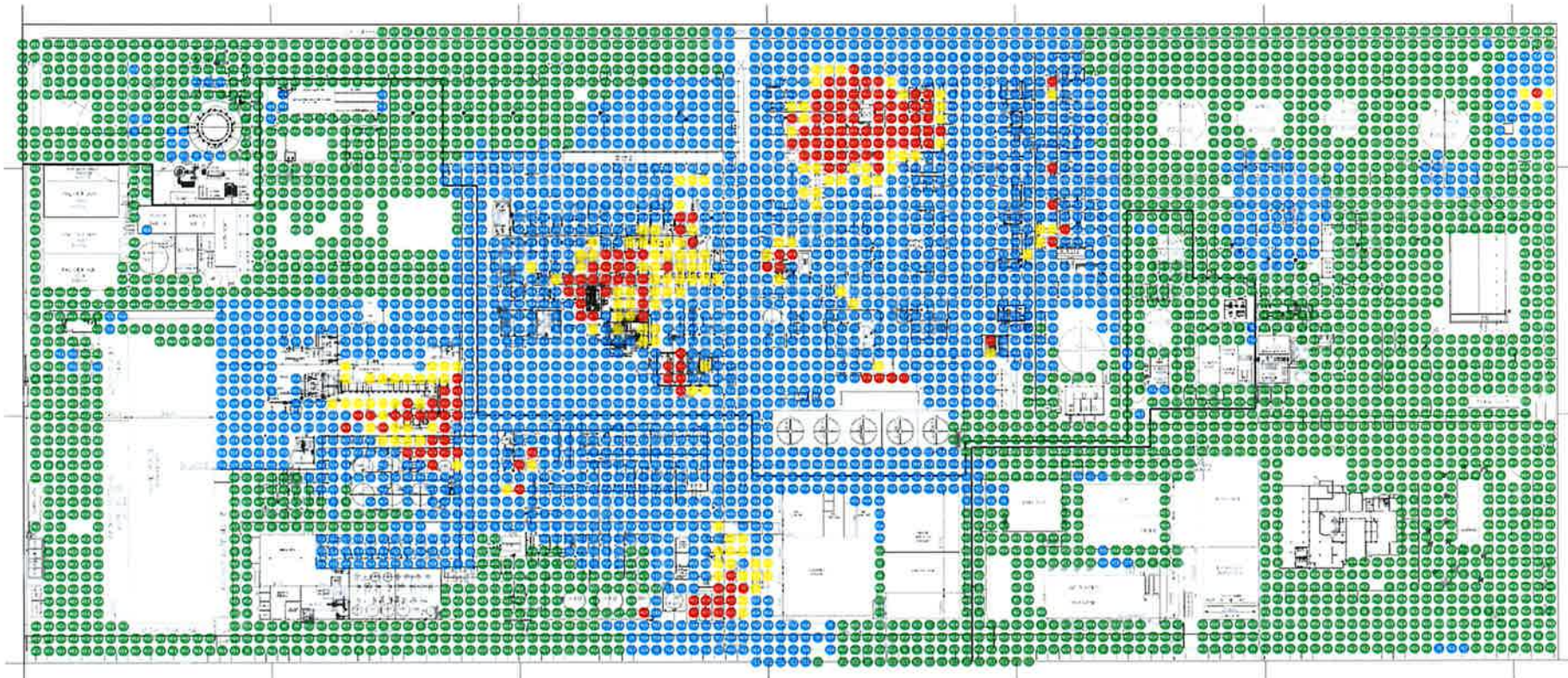



ภาคผนวก ค





เอกสารประกอบการปฏิบัติตาม
มาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม

ภาคผนวก ค.1

เอกสารจัดทำ Noise Contour Map



ตัวเลขใน  หมายถึง ระดับเสียง มีหน่วยเป็นเดซิเบลเอ
ค่าต่ำสุด 51.3 เดซิเบลเอ
ค่าสูงสุด 100.4 เดซิเบลเอ

 หมายถึง ระดับเสียง น้อยกว่า 70 เดซิเบลเอ
 หมายถึง ระดับเสียง น้อยกว่า 83 เดซิเบลเอ
 หมายถึง ระดับเสียง น้อยกว่า 85 เดซิเบลเอ
 หมายถึง ระดับเสียง มากกว่า 85 เดซิเบลเอ

รูปที่ 2 ผลการตรวจวัดระดับเสียง เพื่อจัดทำแผนผังแสดงระดับเสียง (Noise Contour Map)
บริษัท กรุงเทพ ซินธิคส์ จำกัด และ บริษัท ปิเอสที อีลาสโตเมอร์ส จำกัด





รูปที่ 9 แผนผังแสดงระดับเสียง (Noise Contour Map)
บริษัท กรุงเทพ ซินดิเกท จำกัด และ บริษัท ปิเอสที อีลาสโตเมอร์ส จำกัด



ภาคผนวก ง

ใบรับรองผลการตรวจวิเคราะห์คุณภาพสิ่งแวดล้อม

ใบรับรองผลการตรวจวัดคุณภาพอากาศในบรรยากาศ



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 21-28 Apr 2025

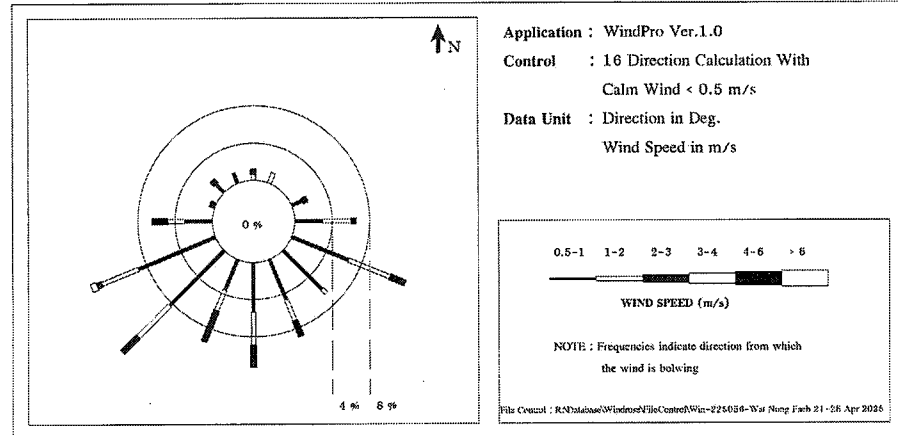
Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0060	0.0060	0.0000	0.0000	0.0000	0.0119
NNE	0.0000	0.0119	0.0000	0.0000	0.0000	0.0000	0.0119
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0119	0.0000	0.0060	0.0000	0.0000	0.0000	0.0179
E	0.0298	0.0298	0.0060	0.0000	0.0000	0.0000	0.0655
ESE	0.0655	0.0476	0.0179	0.0000	0.0000	0.0000	0.1310
SE	0.0595	0.0060	0.0000	0.0000	0.0000	0.0000	0.0655
SSE	0.0476	0.0238	0.0179	0.0000	0.0000	0.0000	0.0893
S	0.0536	0.0357	0.0238	0.0000	0.0000	0.0000	0.1131
SSW	0.0357	0.0238	0.0357	0.0000	0.0000	0.0000	0.0952
SW	0.0833	0.0476	0.0238	0.0000	0.0000	0.0000	0.1548
WSW	0.0893	0.0417	0.0060	0.0000	0.0000	0.0000	0.1429
W	0.0298	0.0179	0.0179	0.0000	0.0000	0.0000	0.0655
WNW	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
NW	0.0119	0.0000	0.0060	0.0000	0.0000	0.0000	0.0179
NNW	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 21-28 Apr 2025

Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Time	21-22 Apr 2025		22-23 Apr 2025		23-24 Apr 2025		24-25 Apr 2025	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
14:00 - 15:00	1.6	S	0.8	SW	0.8	SW	0.9	WSW
15:00 - 16:00	0.8	SW	0.7	SSW	0.7	WSW	0.7	WSW
16:00 - 17:00	0.7	WSW	0.9	SSW	1.1	E	1.5	ESE
17:00 - 18:00	1.0	SSW	0.8	SW	1.0	E	1.0	ESE
18:00 - 19:00	0.7	SW	1.0	SW	0.8	ESE	0.9	SE
19:00 - 20:00	0.9	W	1.0	WSW	1.0	S	0.8	SSE
20:00 - 21:00	2.4	E	2.0	SSE	0.8	SSE	0.8	ESE
21:00 - 22:00	2.9	SW	0.9	SSE	0.7	ESE	2.3	SSW
22:00 - 23:00	0.8	W	2.2	S	1.0	ESE	1.0	W
23:00 - 24:00	0.9	SW	0.8	SW	0.7	SE	0.8	SW
00:00 - 01:00	0.9	S	2.5	W	1.0	ESE	1.0	SW
01:00 - 02:00	0.8	SSW	2.4	WSW	0.7	ESE	1.0	SSW
02:00 - 03:00	0.8	W	0.7	WSW	1.0	ESE	1.0	SW
03:00 - 04:00	0.9	W	0.8	SW	2.6	SSW	0.7	SSW
04:00 - 05:00	0.7	S	0.7	WSW	0.9	SW	0.9	WSW
05:00 - 06:00	0.7	SSW	1.0	SW	0.7	WSW	1.0	W
06:00 - 07:00	0.7	WSW	2.3	NW	1.0	SSW	1.9	SSE
07:00 - 08:00	1.6	E	3.0	WSW	0.9	WSW	0.9	SE
08:00 - 09:00	2.2	SSW	1.0	WSW	1.0	SW	0.9	ESE
09:00 - 10:00	1.1	S	0.7	SW	0.9	SW	0.7	S
10:00 - 11:00	2.8	SSW	1.0	WSW	1.0	SW	0.7	SE
11:00 - 12:00	1.0	WSW	0.8	SSW	0.8	S	0.9	SSE
12:00 - 13:00	2.9	ESE	0.7	WSW	0.8	S	1.0	ESE
13:00 - 14:00	2.6	SW	0.9	WSW	1.0	SW	0.7	SSE



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Sonjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Fash

Monitor period : 21-28 Apr 2025

Wind Speed Model : Novalynx WS-25

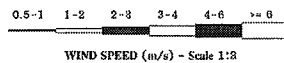
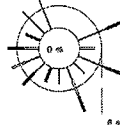
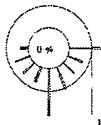
Serial No : A5091

Wind Direction Model : Novalynx WS-25

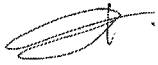
Serial No : A5091


Time	25-26 Apr 2025		26-27 Apr 2025		27-28 Apr 2025		
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	
14:00 - 15:00	0.9	ESE	2.2	ESE	0.9	ENE	
15:00 - 16:00	0.9	SE	1.6	S	2.5	SSE	
16:00 - 17:00	2.2	SSW	2.0	S	2.8	SSW	
17:00 - 18:00	0.8	SW	0.8	SSE	0.8	WSW	
18:00 - 19:00	2.5	S	0.9	SE	1.0	WSW	
19:00 - 20:00	1.0	SSE	0.8	ESE	0.9	SW	
20:00 - 21:00	0.7	E	0.9	SE	2.3	ESE	
21:00 - 22:00	2.8	S	1.0	ESE	0.6	SSE	
22:00 - 23:00	1.7	ESE	0.9	ESE	2.4	SW	
23:00 - 24:00	0.9	SE	0.9	E	1.4	E	
00:00 - 01:00	0.8	E	0.9	ESE	2.1	W	
01:00 - 02:00	2.8	W	0.7	S	0.5	NNW	
02:00 - 03:00	0.7	WSW	0.9	SE	0.6	NNW	
03:00 - 04:00	1.0	SW	1.0	SE	2.4	ENE	
04:00 - 05:00	1.0	SSW	1.3	N	0.5	ENE	
05:00 - 06:00	1.4	E	2.7	N	2.2	WNW	
06:00 - 07:00	0.9	SSE	1.1	NNE	0.5	NW	
07:00 - 08:00	1.0	SSE	2.1	SW	0.7	NW	
08:00 - 09:00	0.8	E	1.0	WSW	0.7	SE	
09:00 - 10:00	0.9	S	1.0	WSW	1.1	W	
10:00 - 11:00	1.5	S	0.7	W	1.4	SSE	
11:00 - 12:00	0.8	WSW	2.4	SSE	0.6	ESE	
12:00 - 13:00	0.7	S	1.8	NNE	0.6	ESE	
13:00 - 14:00	1.0	S	0.9	E	0.5	S	

Wind Rose



File Control : R:\Database\Windrose\File Control\Win-225059-Wat Nong Fash 21-28 Apr 2025


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 21-28 Apr 2025

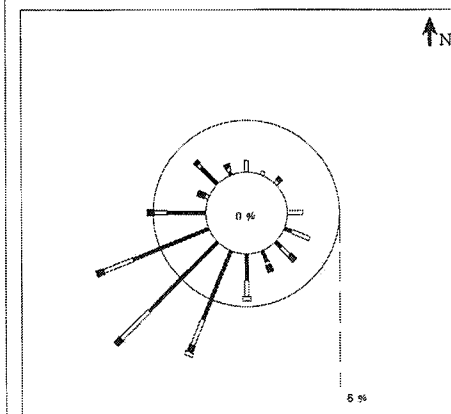
Wind Speed Model : Novalynx NL-32

Serial No : 1203

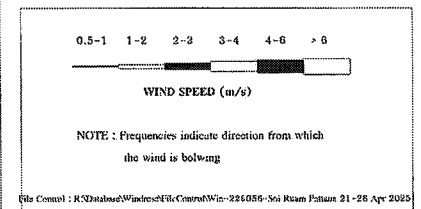
Wind Direction Model : Novalynx NL-32

Serial No : 1203

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0179	0.0000	0.0000	0.0000	0.0000	0.0179
NNE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
NE	0.0000	0.0060	0.0060	0.0000	0.0000	0.0000	0.0119
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0238	0.0000	0.0000	0.0000	0.0000	0.0238
ESE	0.0119	0.0298	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0119	0.0179	0.0119	0.0000	0.0000	0.0000	0.0417
SSE	0.0179	0.0060	0.0119	0.0000	0.0000	0.0000	0.0357
S	0.0417	0.0238	0.0000	0.0060	0.0000	0.0000	0.0714
SSW	0.1131	0.0417	0.0119	0.0060	0.0000	0.0000	0.1726
SW	0.1488	0.0595	0.0119	0.0000	0.0000	0.0000	0.2202
WSW	0.1250	0.0476	0.0119	0.0000	0.0000	0.0000	0.1845
W	0.0595	0.0179	0.0119	0.0000	0.0000	0.0000	0.0893
WNW	0.0000	0.0060	0.0119	0.0000	0.0000	0.0000	0.0179
NW	0.0357	0.0060	0.0060	0.0000	0.0000	0.0000	0.0476
NNW	0.0060	0.0060	0.0060	0.0000	0.0000	0.0000	0.0179
CALM	0.0000						




Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/s

File Control : R:\Database\Windrose\File Control\Win-225059-Soi Ruam Pattana 21-28 Apr 2025


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

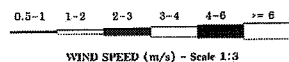
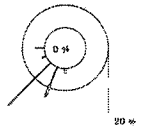
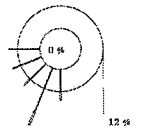
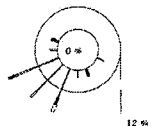
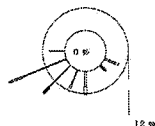


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana Monitor period : 21-28 Apr 2025
Wind Speed Model : Novalynx NL-32 Serial No : 1203
Wind Direction Model : Novalynx NL-32 Serial No : 1203

Time	21-22 Apr 2025		22-23 Apr 2025		23-24 Apr 2025		24-25 Apr 2025	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
13:00 - 14:00	3.0	S	3.0	SSW	0.9	S	0.9	SSW
14:00 - 15:00	0.9	WSW	0.7	SW	0.7	SSW	0.7	SW
15:00 - 16:00	1.0	S	0.9	S	0.7	WSW	1.0	SW
16:00 - 17:00	0.9	WSW	0.8	SW	0.7	W	0.9	SSW
17:00 - 18:00	0.8	SW	0.9	SSW	0.7	SSW	0.8	SW
18:00 - 19:00	0.9	SW	0.8	SW	0.7	SSW	0.7	SW
19:00 - 20:00	0.9	W	0.9	SSW	0.9	SSW	0.7	W
20:00 - 21:00	0.8	SW	2.7	SSE	1.0	SSW	1.0	SSW
21:00 - 22:00	0.7	WSW	0.7	ESE	0.9	WSW	0.9	SW
22:00 - 23:00	0.9	WSW	1.6	WSW	0.9	SSW	0.9	SSW
23:00 - 24:00	0.7	W	0.9	WSW	0.8	SW	0.8	WSW
00:00 - 01:00	0.7	WSW	1.0	SW	0.8	S	1.0	SSW
01:00 - 02:00	0.7	SSW	0.8	SSW	0.9	W	0.9	SW
02:00 - 03:00	1.0	WSW	1.0	WSW	1.0	SW	0.8	SW
03:00 - 04:00	0.7	SW	0.7	SSW	1.0	S	1.0	SSW
04:00 - 05:00	0.9	SSW	0.7	SW	0.7	SW	0.9	W
05:00 - 06:00	1.0	SSW	0.7	SW	0.8	SSW	0.7	SW
06:00 - 07:00	0.7	WSW	2.9	WNW	0.8	WSW	0.9	SSW
07:00 - 08:00	2.0	SE	2.9	WSW	0.7	S	0.9	SW
08:00 - 09:00	1.3	WSW	0.9	WSW	0.9	WSW	1.0	SW
09:00 - 10:00	1.3	ESE	1.7	W	0.9	SW	1.0	SW
10:00 - 11:00	2.5	SW	2.5	SSW	1.0	SSW	0.9	SW
11:00 - 12:00	1.0	S	0.8	WSW	0.9	W	0.9	SW
12:00 - 13:00	1.9	ESE	0.8	WSW	0.8	W	1.0	S

Wind Rose



File Control : R:\Database\Winform\FisControl\Win-225056-Soi Ruam Pattana 21-28 Apr 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

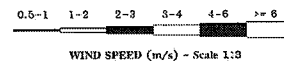
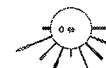


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana Monitor period : 21-28 Apr 2025
Wind Speed Model : Novalynx NL-32 Serial No : 1203
Wind Direction Model : Novalynx NL-32 Serial No : 1203

Time	25-26 Apr 2025		26-27 Apr 2025		27-28 Apr 2025	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
13:00 - 14:00	0.9	SW	0.7	S	2.0	WSW
14:00 - 15:00	1.0	WSW	1.7	SE	2.8	NNW
15:00 - 16:00	0.9	SSW	2.3	SW	0.7	NW
16:00 - 17:00	1.0	WSW	1.9	E	0.7	NW
17:00 - 18:00	0.7	SSW	1.0	ESE	1.7	SSW
18:00 - 19:00	2.5	SE	0.8	SE	1.8	WNW
19:00 - 20:00	0.8	SSE	1.5	SW	0.8	NNW
20:00 - 21:00	0.7	SSE	0.9	S	0.8	W
21:00 - 22:00	0.9	ESE	0.9	SW	1.0	NW
22:00 - 23:00	1.0	SE	1.0	WSW	0.9	W
23:00 - 24:00	1.0	E	0.7	WSW	1.9	SW
00:00 - 01:00	1.0	ESE	2.7	SSE	2.8	WNW
01:00 - 02:00	2.9	W	1.0	SE	1.0	N
02:00 - 03:00	0.9	WSW	1.0	SSE	0.7	NW
03:00 - 04:00	1.0	SW	1.4	NE	1.0	N
04:00 - 05:00	0.9	WSW	2.7	NW	2.9	NE
05:00 - 06:00	1.8	E	0.8	NW	1.0	NNE
06:00 - 07:00	0.9	S	0.9	NW	1.7	W
07:00 - 08:00	1.0	ESE	1.3	WSW	0.7	NW
08:00 - 09:00	0.8	SE	0.8	SSW	1.0	N
09:00 - 10:00	0.8	SSE	0.9	WSW	1.0	NNW
10:00 - 11:00	2.3	SSW	1.0	SW	2.1	W
11:00 - 12:00	0.8	WSW	1.0	SW	0.8	WSW
12:00 - 13:00	0.8	SW	1.7	E	1.0	W

Wind Rose



File Control : R:\Database\Winform\FisControl\Win-225056-Soi Ruam Pattana 21-28 Apr 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

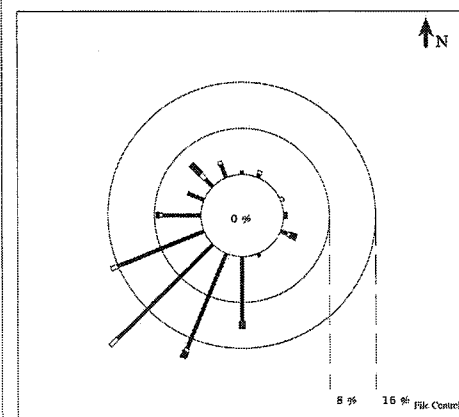
(Miss Preeda Somjai)
Technical Management Team



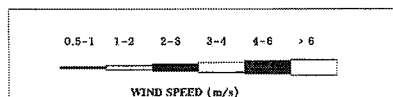
Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 21-28 Apr 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A4907
 Wind Direction Model : Novalynx WS-25 Serial No : A4907

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
NNE	0.0060	0.0060	0.0000	0.0000	0.0000	0.0000	0.0119
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0060	0.0000	0.0000	0.0000	0.0000	0.0060
E	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000	0.0060
ESE	0.0119	0.0060	0.0119	0.0000	0.0000	0.0000	0.0298
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0060	0.0000	0.0000	0.0000	0.0000	0.0000	0.0060
S	0.1131	0.0000	0.0119	0.0000	0.0000	0.0000	0.1250
SSW	0.1786	0.0060	0.0119	0.0000	0.0000	0.0000	0.1964
SW	0.2321	0.0179	0.0000	0.0000	0.0000	0.0000	0.2500
WSW	0.1607	0.0119	0.0000	0.0000	0.0000	0.0000	0.1726
W	0.0655	0.0060	0.0060	0.0000	0.0000	0.0000	0.0774
WNW	0.0298	0.0000	0.0000	0.0000	0.0000	0.0000	0.0298
NW	0.0179	0.0119	0.0238	0.0000	0.0000	0.0000	0.0536
NNW	0.0238	0.0060	0.0000	0.0000	0.0000	0.0000	0.0298
CALM	0.0000						



Application : WindPro Ver.1.0
 Control : 16 Direction Calculation With
 Calm Wind < 0.5 m/s
 Data Unit : Direction in Deg.
 Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team

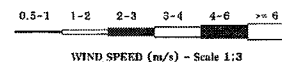
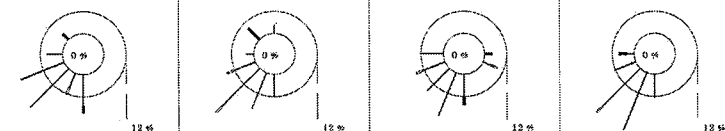


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 21-28 Apr 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A4907
 Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	21-22 Apr 2025		22-23 Apr 2025		23-24 Apr 2025		24-25 Apr 2025	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
09:00 - 10:00	0.7	W	0.7	SW	0.5	S	0.5	SSW
10:00 - 11:00	2.2	S	0.7	WSW	0.7	WSW	0.5	SW
11:00 - 12:00	0.5	SSW	0.5	WSW	0.5	S	0.6	S
12:00 - 13:00	0.7	WSW	0.6	SW	0.5	SSW	0.6	SSW
13:00 - 14:00	0.5	S	0.7	SSW	0.6	W	0.6	WSW
14:00 - 15:00	0.6	S	0.6	SSW	0.7	SSW	2.1	W
15:00 - 16:00	0.6	WSW	0.6	S	0.6	SW	1.9	SW
16:00 - 17:00	0.7	SW	0.6	SSW	0.5	SSW	0.5	SSW
17:00 - 18:00	0.7	SW	0.6	S	0.6	SSW	0.5	SW
18:00 - 19:00	0.7	WSW	0.6	SSW	0.6	SSW	0.6	SSW
19:00 - 20:00	0.5	WSW	0.7	SW	0.7	SW	0.7	W
20:00 - 21:00	0.7	S	0.7	S	0.7	SSW	0.7	SSW
21:00 - 22:00	0.7	S	0.6	WSW	0.6	W	0.6	SSW
22:00 - 23:00	0.5	SW	0.7	SW	0.7	S	0.6	S
23:00 - 24:00	0.5	WSW	0.5	SW	1.9	ESE	0.6	S
00:00 - 01:00	0.6	SSW	0.7	SW	0.6	ESE	0.7	SSW
01:00 - 02:00	0.7	SW	0.7	SW	2.4	S	0.6	SSW
02:00 - 03:00	0.7	W	2.2	NW	2.3	E	0.6	SW
03:00 - 04:00	0.6	SW	1.8	WSW	1.0	WSW	0.6	SW
04:00 - 05:00	0.5	SW	2.0	NW	0.5	WSW	0.7	WSW
05:00 - 06:00	0.7	SW	0.7	W	0.7	SW	0.7	WSW
06:00 - 07:00	2.0	NW	0.6	N	0.6	W	0.5	SW
07:00 - 08:00	1.7	SSW	1.8	SW	0.6	WSW	0.7	SW
08:00 - 09:00	0.7	WSW	0.5	SSW	0.6	SW	0.7	SW

Wind Rose



File Control : R:\Database\Windrose\Windrose\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 21-28 Apr 2025

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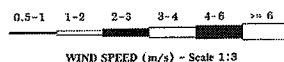
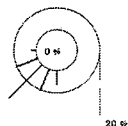
Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 21-28 Apr 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A4907
 Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	25-26 Apr 2025		26-27 Apr 2025		27-28 Apr 2025	
	WS(m/s)	WD	WS(m/s)	WD	WS(m/s)	WD
09:00 - 10:00	0.7	SW	0.5	SW	0.5	WSW
10:00 - 11:00	0.7	S	0.6	SSW	0.5	WSW
11:00 - 12:00	0.5	SW	0.5	WSW	0.7	SSW
12:00 - 13:00	0.5	SW	0.7	SW	2.3	ESE
13:00 - 14:00	0.7	WSW	0.6	SW	2.2	SSW
14:00 - 15:00	0.5	SSW	0.5	WSW	1.7	NW
15:00 - 16:00	0.6	WSW	0.6	SSW	0.5	NNW
16:00 - 17:00	0.6	S	0.6	SSW	0.6	W
17:00 - 18:00	0.7	WSW	0.6	S	1.4	SW
18:00 - 19:00	0.5	WSW	0.5	WSW	1.9	NW
19:00 - 20:00	0.6	SW	0.5	S	0.7	WNW
20:00 - 21:00	0.7	WSW	0.7	SW	0.7	NW
21:00 - 22:00	0.6	SW	0.6	WSW	0.6	NW
22:00 - 23:00	0.7	SW	0.5	W	0.7	NNW
23:00 - 24:00	0.6	SSW	0.6	S	1.3	W
00:00 - 01:00	0.7	SW	2.5	ESE	1.8	NNW
01:00 - 02:00	0.6	W	0.6	SSE	0.7	WNW
02:00 - 03:00	0.7	SSW	0.7	ESE	0.5	WNW
03:00 - 04:00	0.6	SW	1.7	NNE	0.7	WNW
04:00 - 05:00	0.6	SW	0.9	NW	1.4	ENE
05:00 - 06:00	0.7	SSW	0.5	WNW	0.5	NNE
06:00 - 07:00	0.7	S	0.7	NNW	2.2	NW
07:00 - 08:00	0.5	SSW	2.5	SSW	0.7	W
08:00 - 09:00	0.7	SW	0.7	WSW	0.7	NNW

Wind Rose



File Content : R:\Database\Windrose\FileContent\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 21-28 Apr 2025

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



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 TEL. (662) 959-3600 FAX (662) 959-3535 Website : seco.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0706/68
 SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
 SAMPLING DATE : 21-22/04/2025 ANALYTICAL DATE : 03-05/2025
 SAMPLING TIME : 13:47-14:17 SAMPLE CONDITION : Normal
 RECEIVED DATE : 23/04/2025 FILE CODE : 225056 TO-15 April
 REPORT DATE : 05/05/2025

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Fach		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.04	0.17	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

(Miss Siriwan Chimsa-ngai)
 Analyst

(Miss Araya Tipparuk)
 Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0706/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 21-22/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 13:56-13:23	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 23/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a (µg/m ³)
			Soi Ruam Pattana		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	0.04	0.17	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

AR

(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0706/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 21-22/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 14:21-13:38	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 23/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
			Wat Takuan Kongkaram (Ban Ta Kuan-Aon Pra Du)		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

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(Mrs. Araya Tipparak)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0720/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 14:19-14:19	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Faeh		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

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(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0720/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 13:26-13:25	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Soi Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.04	0.17	-

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0720/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 13:39-13:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Tukuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

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(Miss Siriwan Chimsa-nga)

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M. Araya Tippasuk

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0727/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 33-24/04/2025	ANALYTICAL DATE	: 05/07/05/2025
SAMPLING TIME	: 14:20-14:26	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 25/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Nong Faeb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0727/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 23-24/04/2025	ANALYTICAL DATE	: 05/07/05/2025
SAMPLING TIME	: 13:22-13:32	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 25/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
			Soi Ruam Partana		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0727/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 23-24/04/2025	ANALYTICAL DATE	: 05/07/05/2025
SAMPLING TIME	: 13:46-13:51	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 25/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0733/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 24-25/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 14:28-15:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 26/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08-05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Wat Nong Faeb	µg/m ³	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15.1999

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(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

(Mrs. Araya Tipparuk)
Technical Management Team

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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0733/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 24-25/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 13:33-13:27	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 26/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08-05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Soi Ruam Pattana	µg/m ³	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15.1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0733/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 24-25/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 13:53-13:44	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Takoun Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 4th ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0734/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 25-26/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 15:02-15:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 27/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD ^a (µg/m ³)
	Non Detection		Wat Nong Fueb		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 4th ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

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Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0734/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 25-26/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 13:29-13:15	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 27/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
			Soi Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0734/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 25-26/04/2025	ANALYTICAL DATE	: 07/05/2025
SAMPLING TIME	: 13:46-13:33	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 27/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
			Wat Takuan Kongkaram (Ban Ta Kuan-Aon Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)
Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0743/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 15:09-15:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/04/2025	FILE CODE	: 225056 TO-15 April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD ^a (µg/m ³)
	Non Detection		Wat Nong Faeh		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Anya Tipparak)
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0743/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 13:16-12:50	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/04/2025	FILE CODE	: 225056 TO-15 April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Soi Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Anya Tipparak)
(Mrs. Anya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0743/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 26-27/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 13:35-13:05	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 28/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
			Wat Takuan Kongkuram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	ND	ND	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)
(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0749/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 27-28/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 15:03-15:00	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 29/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
			Wat Nong Faeb		
	ppbv	µg/m ³	ppbv	µg/m ³	
Styrene	0.02	0.09	0.35	1.49	-

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparuk)
(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0749/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 27-28/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 12:55-13:10	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 29/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Sol Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.08	0.34	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparak
(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0749/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 27-28/04/2025	ANALYTICAL DATE	: 08/05/2025
SAMPLING TIME	: 13:07-13:10	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 29/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 08/05/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
Styrene	0.02	0.09	0.02	0.09	-

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparak
(Mrs. Araya Tipparak)

Technical Management Team

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Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 07-08 Jan 2025

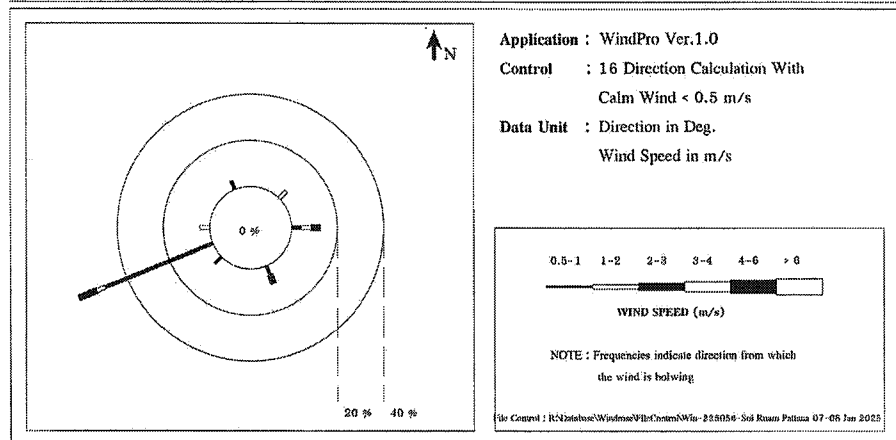
Wind Speed Model : Novalynx WS-25

Serial No : A4905

Wind Direction Model : Novalynx WS-25

Serial No : A4905

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.1250
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0417	0.0000	0.0417	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.5000	0.0417	0.0833	0.0000	0.0000	0.0000	0.6250
W	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						



(Miss Katesarin Vorraderittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 07-08 Jan 2025

Wind Speed Model : Novalynx WS-25

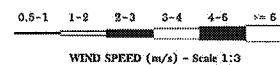
Serial No : A4905

Wind Direction Model : Novalynx WS-25

Serial No : A4905

Time	07-08 Jan 2025	
	WS(m/s)	WD
10:00 - 11:00	1.8	NE
11:00 - 12:00	0.5	NNW
12:00 - 13:00	0.6	SSE
13:00 - 14:00	1.0	WSW
14:00 - 15:00	2.0	SSE
15:00 - 16:00	2.0	WSW
16:00 - 17:00	1.6	W
17:00 - 18:00	0.5	SW
18:00 - 19:00	0.6	WSW
19:00 - 20:00	0.7	WSW
20:00 - 21:00	0.5	WSW
21:00 - 22:00	0.6	WSW
22:00 - 23:00	0.7	WSW
23:00 - 24:00	0.6	WSW
00:00 - 01:00	0.5	WSW
01:00 - 02:00	0.6	WSW
02:00 - 03:00	0.7	WSW
03:00 - 04:00	0.5	WSW
04:00 - 05:00	0.6	WSW
05:00 - 06:00	0.6	WSW
06:00 - 07:00	2.3	WSW
07:00 - 08:00	2.4	E
08:00 - 09:00	1.8	E
09:00 - 10:00	0.6	E

Wind Rose



(Miss Katesarin Vorraderittaya)
Environmental Scientist

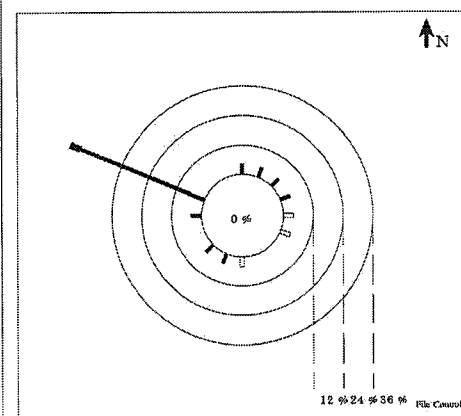
Preeda S.
(Miss Preeda Somjai)
Technical Management Team



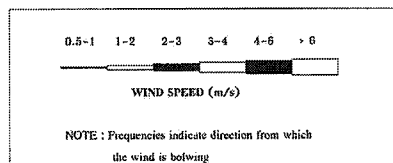
Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 07-08 Jan 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5092
Wind Direction Model : Novalynx WS-25 Serial No : A5092

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
E	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.5417	0.0000	0.0417	0.0000	0.0000	0.0000	0.5833
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0
Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s
Data Unit : Direction in Deg.
Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

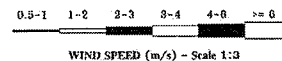
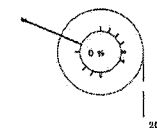


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 07-08 Jan 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5092
Wind Direction Model : Novalynx WS-25 Serial No : A5092

Time	07-08 Jan 2025	
	WS(m/s)	WD
11:00 - 12:00	0.8	SSW
12:00 - 13:00	1.1	E
13:00 - 14:00	0.6	W
14:00 - 15:00	0.5	SW
15:00 - 16:00	1.1	S
16:00 - 17:00	2.4	WNW
17:00 - 18:00	0.7	N
18:00 - 19:00	0.7	WNW
19:00 - 20:00	0.7	WNW
20:00 - 21:00	0.7	WNW
21:00 - 22:00	0.7	WNW
22:00 - 23:00	0.5	WNW
23:00 - 24:00	0.6	WNW
00:00 - 01:00	0.6	WNW
01:00 - 02:00	0.6	WNW
02:00 - 03:00	0.6	WNW
03:00 - 04:00	0.6	WNW
04:00 - 05:00	0.5	WNW
05:00 - 06:00	0.7	WNW
06:00 - 07:00	0.7	WNW
07:00 - 08:00	0.5	NNE
08:00 - 09:00	0.8	NE
09:00 - 10:00	0.6	ENE
10:00 - 11:00	1.9	ESE

Wind Rose



File Control : R:\Database\Windrose\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 07-08 Jan 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 07-08 Jan 2025

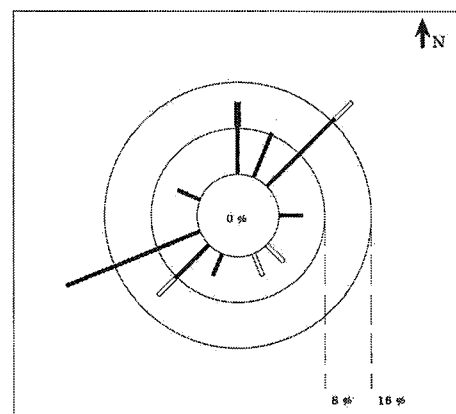
Wind Speed Model : Novalynx WS-25

Serial No : A5084

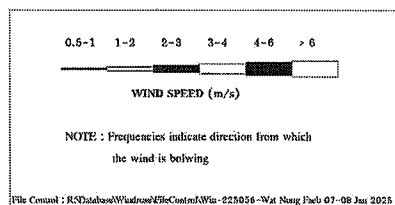
Wind Direction Model : Novalynx WS-25

Serial No : A5084

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0833	0.0000	0.0417	0.0000	0.0000	0.0000	0.1250
NNE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.1667	0.0417	0.0000	0.0000	0.0000	0.0000	0.2083
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.2500	0.0000	0.0000	0.0000	0.0000	0.0000	0.2500
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/s

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 07-08 Jan 2025

Wind Speed Model : Novalynx WS-25

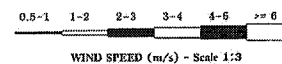
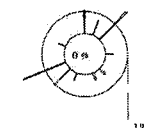
Serial No : A5084

Wind Direction Model : Novalynx WS-25

Serial No : A5084

Time	07-08 Jan 2025	
	WS(m/s)	WD
09:00 - 10:00	0.9	NNE
10:00 - 11:00	0.5	SSW
11:00 - 12:00	1.1	SW
12:00 - 13:00	1.5	SSE
13:00 - 14:00	0.5	SW
14:00 - 15:00	0.8	WSW
15:00 - 16:00	0.6	SW
16:00 - 17:00	0.7	WSW
17:00 - 18:00	0.9	WSW
18:00 - 19:00	0.5	WSW
19:00 - 20:00	0.7	WSW
20:00 - 21:00	0.5	WSW
21:00 - 22:00	2.3	N
22:00 - 23:00	0.5	N
23:00 - 24:00	0.6	WNW
00:00 - 01:00	1.1	NE
01:00 - 02:00	0.7	NE
02:00 - 03:00	0.5	NE
03:00 - 04:00	0.7	NE
04:00 - 05:00	0.5	NE
05:00 - 06:00	0.7	NNE
06:00 - 07:00	0.7	N
07:00 - 08:00	0.7	E
08:00 - 09:00	1.3	SE

Wind Rose



File Control : R:\Database\Windrose\WinControl\Win-225056-Wat Nong Faeb 07-08 Jan 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0049/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 07-08/01/2025 ANALYTICAL DATE : 10-11/01/2025
SAMPLING TIME : 10:58-11:58 SAMPLE CONDITION : Normal
RECEIVED DATE : 09/01/2025 FILE CODE : 225056_TO-15_January
REPORT DATE : 13/01/2025

Compound	Non Detection		SAMPLING LOCATION		STANDARD* (µg/m ³)
			Sol Ruam Pattana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Sirivan Chimsa-nga
(Miss Sirivan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)
Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduce, except in full, without official approval.

3. * Notification of the Pollution Control Department, dated December 18,B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



บริษัท ซีคอต จำกัด
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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0049/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 07-08/01/2025 ANALYTICAL DATE : 10-11/01/2025
SAMPLING TIME : 11:19-12:19 SAMPLE CONDITION : Normal
RECEIVED DATE : 09/01/2025 FILE CODE : 225056_TO-15_January
REPORT DATE : 13/01/2025

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Sirivan Chimsa-nga
(Miss Sirivan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)
Technical Management Team

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND

TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0049/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 07-08/01/2025	ANALYTICAL DATE	: 10-11/01/2025
SAMPLING TIME	: 09:38-10:38	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 09/01/2025	FILE CODE	: 225056_TO-15_January
REPORT DATE	: 13/01/2025		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Wat Nong Faeb		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

Araya Tipparuk
(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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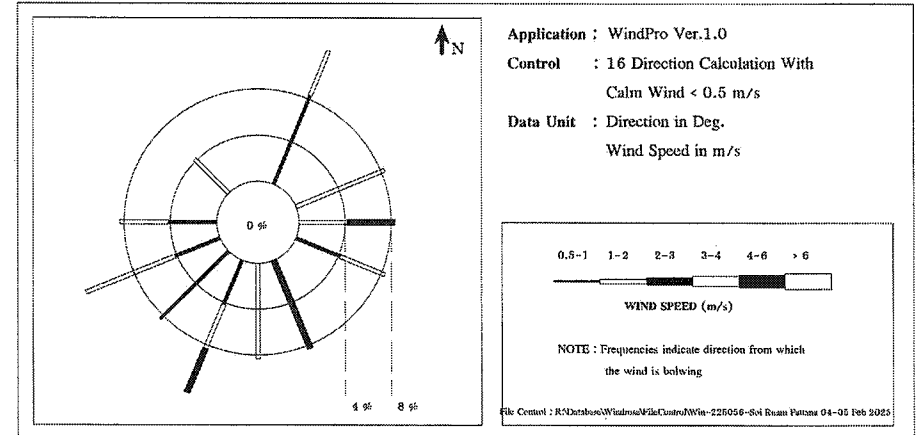
R:\Database\Windows\FiltControl\Win-225056-Soi Ruam Pattana 04-05 Feb 2025



Meteorological Monitoring Results : Wind Rose
MTR-BSTE (Site 1)

Location	: Soi Ruam Pattana	Monitor period	: 04-05 Feb 2025
Wind Speed Model	: Novalynx WS-25	Serial No	: A5088
Wind Direction Model	: Novalynx WS-25	Serial No	: A5088

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	Total
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
E	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
ESE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.1250
SW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
W	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Katesarin Vorradetwittaya
(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda J.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 04-05 Feb 2025

Wind Speed Model : Novalynx WS-25

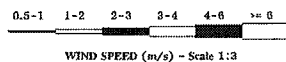
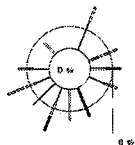
Serial No : A5088

Wind Direction Model : Novalynx WS-25


Serial No : A5088

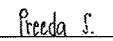
Time	04-05 Feb 2025	
	WS(m/s)	WD
12:00 - 13:00	1.2	WSW
13:00 - 14:00	1.4	NNE
14:00 - 15:00	1.9	WSW
15:00 - 16:00	1.0	S
16:00 - 17:00	0.7	SW
17:00 - 18:00	1.2	SSW
18:00 - 19:00	0.9	SW
19:00 - 20:00	2.4	SSE
20:00 - 21:00	0.7	ESE
21:00 - 22:00	1.4	ENE
22:00 - 23:00	2.2	E
23:00 - 24:00	0.5	SSW
00:00 - 01:00	1.2	ENE
01:00 - 02:00	0.6	NNE
02:00 - 03:00	2.5	SSW
03:00 - 04:00	0.5	WSW
04:00 - 05:00	2.1	SSE
05:00 - 06:00	1.3	E
06:00 - 07:00	1.0	ESE
07:00 - 08:00	0.8	NNE
08:00 - 09:00	1.6	S
09:00 - 10:00	1.6	NW
10:00 - 11:00	1.0	W
11:00 - 12:00	0.5	W

Wind Rose



File Control : R:\Data\Win\Windrose\File\Control\Win-225056-Soi Ruam Pattana 04-05 Feb 2025


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)

Monitor period : 04-05 Feb 2025

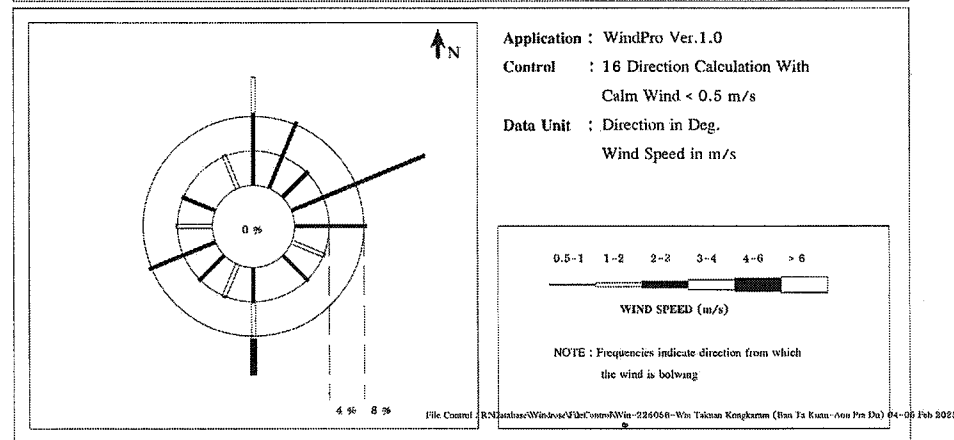
Wind Speed Model : Campbell CR510

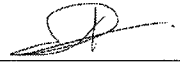
Serial No : 1632

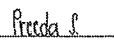
Wind Direction Model : Campbell CR510

Serial No : 1632

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
NNE	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
E	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
ESE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0417	0.0417	0.0417	0.0000	0.0000	0.0000	0.1250
SSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
SW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
W	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						




(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



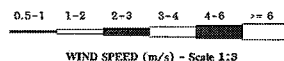
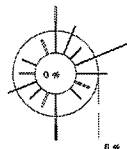
Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 04-05 Feb 2025
 Wind Speed Model : Campbell CR510 Serial No : 1632
 Wind Direction Model : Campbell CR510 Serial No : 1632

Time	04-05 Feb 2025	
	WS(m/s)	WD
11:00 - 12:00	1.6	NNW
12:00 - 13:00	2.3	S
13:00 - 14:00	0.6	SE
14:00 - 15:00	1.8	SSW
15:00 - 16:00	0.7	SW
16:00 - 17:00	0.6	WSW
17:00 - 18:00	0.6	WSW
18:00 - 19:00	0.5	S
19:00 - 20:00	0.6	N
20:00 - 21:00	0.7	ENE
21:00 - 22:00	0.6	NNE
22:00 - 23:00	0.7	ENE
23:00 - 24:00	0.7	NE
00:00 - 01:00	0.7	ENE
01:00 - 02:00	0.7	N
02:00 - 03:00	1.0	S
03:00 - 04:00	0.6	E
04:00 - 05:00	1.1	N
05:00 - 06:00	0.5	ENE
06:00 - 07:00	0.5	NNE
07:00 - 08:00	0.7	E
08:00 - 09:00	1.6	ESE
09:00 - 10:00	0.9	WNW
10:00 - 11:00	1.3	W

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-226056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 04-05 Feb 2025

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team

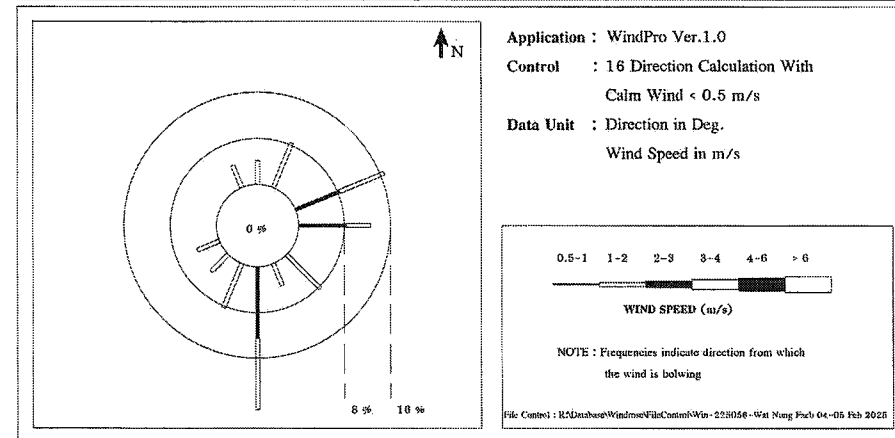


Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb Monitor period : 04-05 Feb 2025
 Wind Speed Model : Novalynx NL-32 Serial No : 1201
 Wind Direction Model : Novalynx NL-32 Serial No : 1201

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0833	0.0833	0.0000	0.0000	0.0000	0.0000	0.1667
E	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SSE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.1250	0.1250	0.0000	0.0000	0.0000	0.0000	0.2500
SSW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WSW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



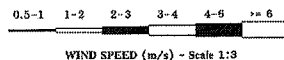
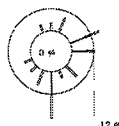
Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb Monitor period : 04-05 Feb 2025
 Wind Speed Model : Novalynx NL-32 Serial No : 1201
 Wind Direction Model : Novalynx NL-32 Serial No : 1201

Time	04-05 Feb 2025	
	WS(m/s)	WD
13:00 - 14:00	0.6	S
14:00 - 15:00	1.6	S
15:00 - 16:00	0.6	S
16:00 - 17:00	0.9	S
17:00 - 18:00	1.2	S
18:00 - 19:00	1.4	SSW
19:00 - 20:00	1.3	SW
20:00 - 21:00	0.7	E
21:00 - 22:00	1.6	ENE
22:00 - 23:00	1.1	ENE
23:00 - 24:00	0.7	E
00:00 - 01:00	1.3	WSW
01:00 - 02:00	1.1	SE
02:00 - 03:00	0.9	ENE
03:00 - 04:00	0.9	ENE
04:00 - 05:00	1.7	N
05:00 - 06:00	1.5	NNW
06:00 - 07:00	1.1	NNE
07:00 - 08:00	1.6	NNE
08:00 - 09:00	1.8	E
09:00 - 10:00	1.4	SSE
10:00 - 11:00	1.8	S
11:00 - 12:00	1.3	SE
12:00 - 13:00	1.7	SSW

Wind Rose



File Control: K:\Database\Windows\FileControl\Win-225056-Wat Nong Faeb 04-05 Feb 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



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 239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
 TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0197/68
 SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
 SAMPLING DATE : 04-05/02/2025 ANALYTICAL DATE : 07/02/2025
 SAMPLING TIME : 12:15-11:15 SAMPLE CONDITION : Normal
 RECEIVED DATE : 06/02/2025 FILE CODE : 225056_TO-15_February
 REPORT DATE : 11/2/2025

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Soi Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	1.68	3.72	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduce, except in full, without official approval.

3. * Notification of the Pollution Control Department, dated December 18.B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0197/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 04-05/02/2025	ANALYTICAL DATE	: 07/02/2025
SAMPLING TIME	: 11:41-10:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/02/2025	FILE CODE	: 225056_TO-15_February
REPORT DATE	: 11/2/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Takuan Kongkarn (Ban Ta Kuan-Aou Pru Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)

Technical Management Team

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0197/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 04-05/02/2025	ANALYTICAL DATE	: 07/02/2025
SAMPLING TIME	: 13:57-14:40	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 06/02/2025	FILE CODE	: 225056_TO-15_February
REPORT DATE	: 11/2/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Faeb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15, 1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tipparak)

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Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 11-12 Mar 2025

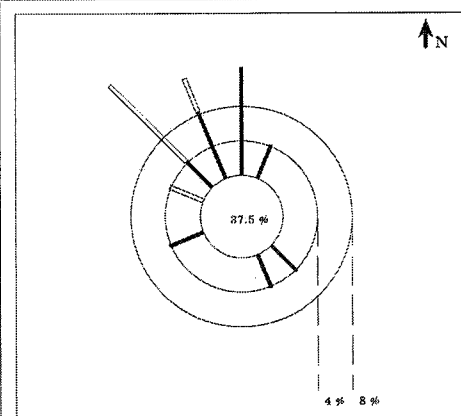
Wind Speed Model : Campbell CR510

Serial No : 10693

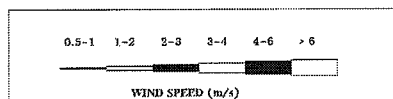
Wind Direction Model : Campbell CR510

Serial No : 10693

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.1250	0.0000	0.0000	0.0000	0.0000	0.0000	0.1250
NNE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0417	0.1250	0.0000	0.0000	0.0000	0.0000	0.1667
NNW	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
CALM	0.3750						



Application : WindPro Ver.1.0

Control : 16 Direction Calculation With
Calm Wind < 0.5 m/sData Unit : Direction in Deg.
Wind Speed in m/sNOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-225056-Sol Ruam Pattana 11-12 Mar 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 11-12 Mar 2025

Wind Speed Model : Campbell CR510

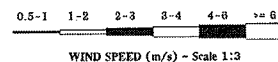
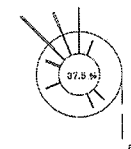
Serial No : 10693

Wind Direction Model : Campbell CR510

Serial No : 10693

Time	11-12 Mar 2025	
	WS(m/s)	WD
08:00 - 09:00	1.7	WNW
09:00 - 10:00	0.4	NW
10:00 - 11:00	0.6	NW
11:00 - 12:00	1.4	NW
12:00 - 13:00	1.2	NW
13:00 - 14:00	1.5	NNW
14:00 - 15:00	0.8	N
15:00 - 16:00	0.6	N
16:00 - 17:00	0.5	NNE
17:00 - 18:00	0.3	N
18:00 - 19:00	0.1	S
19:00 - 20:00	0.1	S
20:00 - 21:00	0.2	WSW
21:00 - 22:00	0.8	WSW
22:00 - 23:00	0.5	N
23:00 - 24:00	0.4	NNW
00:00 - 01:00	1.3	NW
01:00 - 02:00	0.6	NNW
02:00 - 03:00	0.5	NNW
03:00 - 04:00	0.7	SE
04:00 - 05:00	0.9	SSE
05:00 - 06:00	0.3	SSE
06:00 - 07:00	0.2	SSE
07:00 - 08:00	0.1	NW

Wind Rose



WIND SPEED (m/s) - Scale 1:3

File Control : R:\Database\Windrose\FileControl\Win-225056-Sol Ruam Pattana 11-12 Mar 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 11-12 Mar 2025

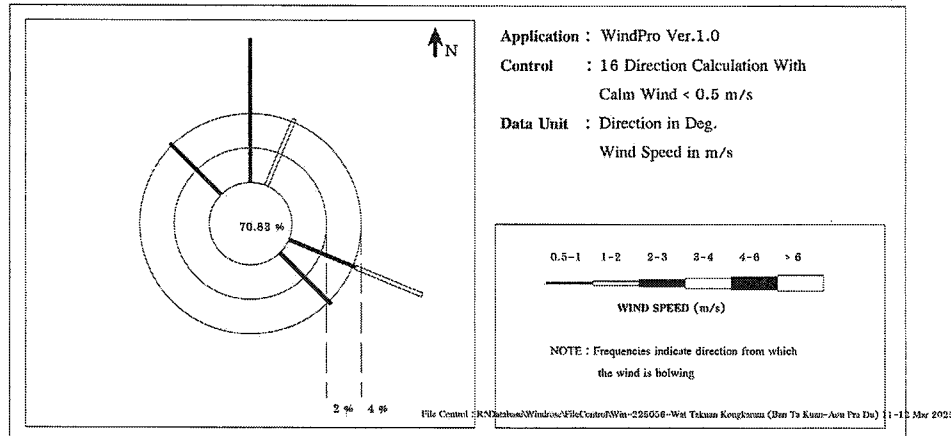
Wind Speed Model : Campbell CR510

Serial No : 10853

Wind Direction Model : Campbell CR510

Serial No : 10853

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NNE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WSW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.7083						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 11-12 Mar 2025

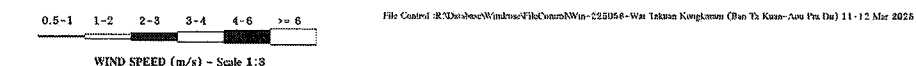
Wind Speed Model : Campbell CR510

Serial No : 10853

Wind Direction Model : Campbell CR510

Serial No : 10853

Time	11-12 Mar 2025	
	WS(m/s)	WD
09:00 - 10:00	0.1	NE
10:00 - 11:00	0.1	NE
11:00 - 12:00	0.3	N
12:00 - 13:00	0.6	N
13:00 - 14:00	1.2	NNE
14:00 - 15:00	0.3	SW
15:00 - 16:00	0.4	W
16:00 - 17:00	0.7	N
17:00 - 18:00	0.1	ENE
18:00 - 19:00	0.2	ENE
19:00 - 20:00	0.2	E
20:00 - 21:00	0.3	ESE
21:00 - 22:00	0.5	ESE
22:00 - 23:00	1.2	ESE
23:00 - 24:00	0.4	SE
00:00 - 01:00	0.3	SSW
01:00 - 02:00	0.1	SSW
02:00 - 03:00	0.1	S
03:00 - 04:00	0.2	SE
04:00 - 05:00	0.4	SE
05:00 - 06:00	0.5	SE
06:00 - 07:00	0.3	SE
07:00 - 08:00	0.3	NNW
08:00 - 09:00	0.8	NW



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 11-12 Mar 2025

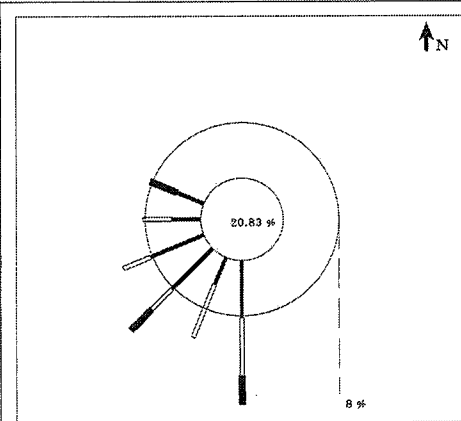
Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0833	0.0833	0.0417	0.0000	0.0000	0.0000	0.2083
SSW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
SW	0.0833	0.0417	0.0417	0.0000	0.0000	0.0000	0.1667
WSW	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
W	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0417	0.0000	0.0417	0.0000	0.0000	0.0000	0.0833
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2083						



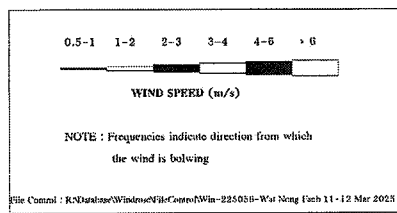
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



File Control : R:\Database\Windrose\File\Control\Win-225056-Wat Nong Faeb 11-12 Mar 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 11-12 Mar 2025

Wind Speed Model : Novalynx WS-25

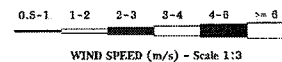
Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Time	11-12 Mar 2025	
	WS(m/s)	WD
10:00 - 11:00	2.2	WNW
11:00 - 12:00	0.5	WNW
12:00 - 13:00	2.7	SW
13:00 - 14:00	0.4	WSW
14:00 - 15:00	1.3	W
15:00 - 16:00	2.2	S
16:00 - 17:00	0.7	SW
17:00 - 18:00	1.2	SW
18:00 - 19:00	1.2	S
19:00 - 20:00	1.2	S
20:00 - 21:00	0.8	S
21:00 - 22:00	0.8	S
22:00 - 23:00	0.4	WSW
23:00 - 24:00	0.7	SSW
00:00 - 01:00	1.6	SSW
01:00 - 02:00	0.3	SSW
02:00 - 03:00	1.1	WSW
03:00 - 04:00	0.7	W
04:00 - 05:00	0.4	W
05:00 - 06:00	0.7	WSW
06:00 - 07:00	0.3	WSW
07:00 - 08:00	1.1	SSW
08:00 - 09:00	0.5	WSW
09:00 - 10:00	0.5	SW

Wind Rose



File Control : R:\Database\Windrose\File\Control\Win-225056-Wat Nong Faeb 11-12 Mar 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0469/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 11-12/03/2025	ANALYTICAL DATE	: 15-16/03/2025
SAMPLING TIME	: 08:50-08:42	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 13/03/2025	FILE CODE	: 225056_TO-15_March
REPORT DATE	: 17/03/2025		

Compound	SAMPLING LOCATION				STANDARD* (µg/m ³)
	Non Detection		Soi Ruam Pattana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd, EPA Methods TO-15.1999


(Miss Siriwan Chimsa-nga)

Analyst


(Mrs. Araya Tipparak)

Technical Management Team

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3. * Notification of the Pollution Control Department, dated December 18,B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0469/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 11-12/03/2025	ANALYTICAL DATE	: 15-16/03/2025
SAMPLING TIME	: 09:26-09:05	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 13/03/2025	FILE CODE	: 225056_TO-15_March
REPORT DATE	: 17/03/2025		

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd, EPA Methods TO-15.1999


(Miss Siriwan Chimsa-nga)

Analyst


(Mrs. Araya Tipparak)

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0469/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 11-12/03/2025	ANALYTICAL DATE	: 15-16/03/2025
SAMPLING TIME	: 10:30-11:11	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 13/03/2025	FILE CODE	: 225056_TO-15_March
REPORT DATE	: 17/03/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Wat Nong Fueb	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd ed., EPA Methods TO-15, 1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

(Mrs. Araya Tippasuk)

(Mrs. Araya Tippasuk)
Technical Management Team

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K:\Database\Win\Control\Win-225056-Soi Ruam Pattana 22-23 Apr 2025



Meteorological Monitoring Results : Wind Rose
MTR-BSTE (Site 1)

Location : Soi Ruam Pattana Monitor period : 22-23 Apr 2025

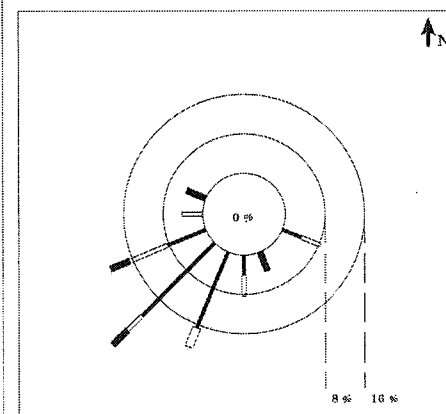
Wind Speed Model : Novalynx NL-32

Serial No : 1203

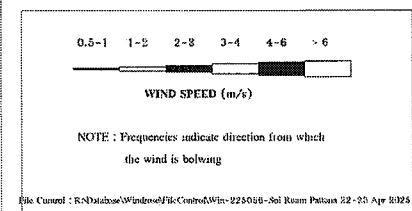
Wind Direction Model : Novalynx NL-32

Serial No : 1203

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
S	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.1667	0.0000	0.0000	0.0417	0.0000	0.0000	0.2083
SW	0.2083	0.0417	0.0417	0.0000	0.0000	0.0000	0.2917
WSW	0.0833	0.0833	0.0417	0.0000	0.0000	0.0000	0.2083
W	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0
Control : 16 Direction Calculation With
Calm Wind < 0.5 m/s
Data Unit : Direction in Deg.
Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Camed : K:\Database\Win\Control\Win-225056-Soi Ruam Pattana 22-23 Apr 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

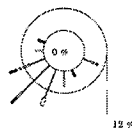


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

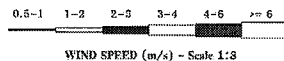
Location : Soi Ruam Pattana Monitor period : 22-23 Apr 2025
Wind Speed Model : Novalynx NL-32 Serial No : 1203
Wind Direction Model : Novalynx NL-32 Serial No : 1203

Time	22-23 Apr 2025	
	WS(m/s)	WD
10:00 - 11:00	2.5	SW
11:00 - 12:00	1.0	S
12:00 - 13:00	1.9	ESE
13:00 - 14:00	3.0	SSW
14:00 - 15:00	0.7	SW
15:00 - 16:00	0.9	S
16:00 - 17:00	0.8	SW
17:00 - 18:00	0.9	SSW
18:00 - 19:00	0.8	SW
19:00 - 20:00	0.9	SSW
20:00 - 21:00	2.7	SSE
21:00 - 22:00	0.7	ESE
22:00 - 23:00	1.6	WSW
23:00 - 24:00	0.9	WSW
00:00 - 01:00	1.0	SW
01:00 - 02:00	0.8	SSW
02:00 - 03:00	1.0	WSW
03:00 - 04:00	0.7	SSW
04:00 - 05:00	0.7	SW
05:00 - 06:00	0.7	SW
06:00 - 07:00	2.9	WNW
07:00 - 08:00	2.9	WSW
08:00 - 09:00	0.9	WSW
09:00 - 10:00	1.7	W

Wind Rose



12 %



WIND SPEED (m/s) - Scale 1:3

File Control : K:\Database\Windrose\FilesControl\Win-225056-Soi Ruam Pattana 22-23 Apr 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

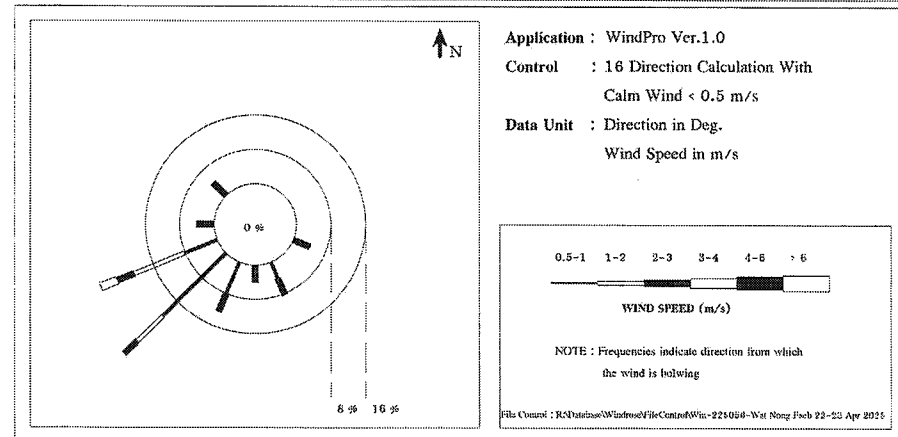
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeh Monitor period : 22-23 Apr 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5091
Wind Direction Model : Novalynx WS-25 Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	Total
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0417	0.0000	0.0417	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
SSW	0.0833	0.0000	0.0417	0.0000	0.0000	0.0000	0.1250
SW	0.2083	0.0833	0.0417	0.0000	0.0000	0.0000	0.3333
WSW	0.0833	0.1250	0.0417	0.0417	0.0000	0.0000	0.2917
W	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

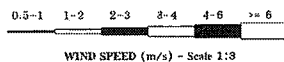
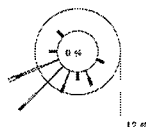


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb Monitor period : 22-23 Apr 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5091
Wind Direction Model : Novalynx WS-25 Serial No : A5091

Time	22-23 Apr 2025	
	WS(m/s)	WD
10:00 - 11:00	2.8	SSW
11:00 - 12:00	1.0	WSW
12:00 - 13:00	2.9	ESE
13:00 - 14:00	2.6	SW
14:00 - 15:00	0.8	SW
15:00 - 16:00	0.7	SSW
16:00 - 17:00	0.9	SSW
17:00 - 18:00	0.8	SW
18:00 - 19:00	1.0	SW
19:00 - 20:00	1.0	WSW
20:00 - 21:00	2.0	SSE
21:00 - 22:00	0.9	SSE
22:00 - 23:00	2.2	S
23:00 - 24:00	0.8	SW
00:00 - 01:00	2.5	W
01:00 - 02:00	2.4	WSW
02:00 - 03:00	0.7	WSW
03:00 - 04:00	0.8	SW
04:00 - 05:00	0.7	WSW
05:00 - 06:00	1.0	SW
06:00 - 07:00	2.3	NW
07:00 - 08:00	3.0	WSW
08:00 - 09:00	1.0	WSW
09:00 - 10:00	0.7	SW

Wind Rose



File Control : R:\Database\Windrose\File\ControllWin-225056-Wat Nong Faeb 22-23 Apr 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

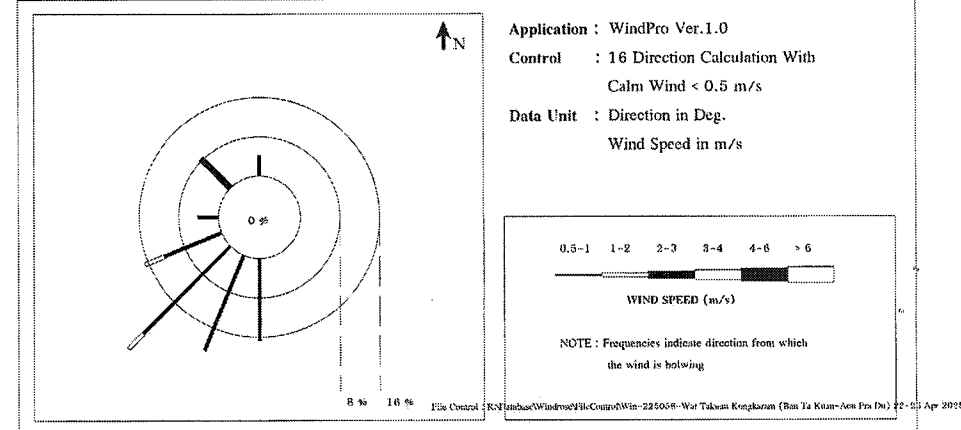
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 22-23 Apr 2025
Wind Speed Model : Novalynx WS-25 Serial No : A4907
Wind Direction Model : Novalynx WS-25 Serial No : A4907

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.1667	0.0000	0.0000	0.0000	0.0000	0.0000	0.1667
SSW	0.2083	0.0000	0.0000	0.0000	0.0000	0.0000	0.2083
SW	0.2500	0.0417	0.0000	0.0000	0.0000	0.0000	0.2917
WSW	0.1250	0.0417	0.0000	0.0000	0.0000	0.0000	0.1667
W	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0833	0.0000	0.0000	0.0000	0.0833
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



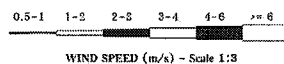
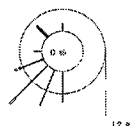
Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 22-23 Apr 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A4907
 Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	22-23 Apr 2025	
	WS(m/s)	WD
10:00 - 11:00	0.7	WSW
11:00 - 12:00	0.5	WSW
12:00 - 13:00	0.6	SW
13:00 - 14:00	0.7	SSW
14:00 - 15:00	0.6	SSW
15:00 - 16:00	0.6	S
16:00 - 17:00	0.6	SSW
17:00 - 18:00	0.6	S
18:00 - 19:00	0.6	SSW
19:00 - 20:00	0.7	SW
20:00 - 21:00	0.7	S
21:00 - 22:00	0.6	WSW
22:00 - 23:00	0.7	SW
23:00 - 24:00	0.5	SW
00:00 - 01:00	0.7	SW
01:00 - 02:00	0.7	SW
02:00 - 03:00	2.2	NW
03:00 - 04:00	1.8	WSW
04:00 - 05:00	2.0	NW
05:00 - 06:00	0.7	W
06:00 - 07:00	0.6	N
07:00 - 08:00	1.8	SW
08:00 - 09:00	0.5	SSW
09:00 - 10:00	0.5	S

Wind Rose



File Control (K:\Database\Winbase\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 22-23 Apr 2025

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0720/68
 SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
 SAMPLING DATE : 22-23/04/2025 ANALYTICAL DATE : 03-05/2025
 SAMPLING TIME : 13:26-13:25 SAMPLE CONDITION : Normal
 RECEIVED DATE : 24/04/2025 FILE CODE : 225056_TO-15_April
 REPORT DATE : 05-05/2025

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Sol Ruam Pattana		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd, EPA Methods 10-15, 1999

(Miss Siriwan Chimsa-ngsa)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0720/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 14:19-14:19	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Nong Faeb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

AR
(Mrs. Araya Tippasuk)

Technical Management Team

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0720/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 22-23/04/2025	ANALYTICAL DATE	: 03/05/2025
SAMPLING TIME	: 13:39-13:45	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 24/04/2025	FILE CODE	: 225056_TO-15_April
REPORT DATE	: 05/05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD* ($\mu\text{g}/\text{m}^3$)
			Wat Takuan Kongkarani (Ban Ta Kuan-Aou Pra Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15,1999

Siriwan Chimsa-nga
(Miss Siriwan Chimsa-nga)

Analyst

AR
(Mrs. Araya Tippasuk)

Technical Management Team

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Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 20-21 May 2025

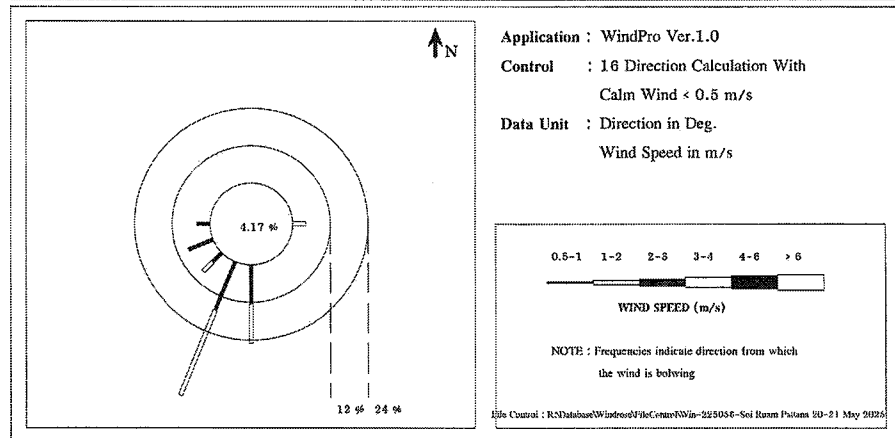
Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.1250	0.1250	0.0000	0.0000	0.0000	0.0000	0.2500
SSW	0.1667	0.2917	0.0000	0.0000	0.0000	0.0000	0.4583
SW	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
WSW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
W	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0417						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda J.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Soi Ruam Pattana

Monitor period : 20-21 May 2025

Wind Speed Model : Novalynx WS-25

Serial No : A5091

Wind Direction Model : Novalynx WS-25

Serial No : A5091

Time	20-21 May 2025	
	WS(m/s)	WD
13:00 - 14:00	0.7	SSW
14:00 - 15:00	1.0	SSW
15:00 - 16:00	0.7	SSW
16:00 - 17:00	0.7	SSW
17:00 - 18:00	0.6	SSW
18:00 - 19:00	1.1	SSW
19:00 - 20:00	1.1	SSW
20:00 - 21:00	0.9	S
21:00 - 22:00	1.7	S
22:00 - 23:00	1.4	S
23:00 - 24:00	0.9	S
00:00 - 01:00	1.3	S
01:00 - 02:00	1.7	SSW
02:00 - 03:00	0.8	S
03:00 - 04:00	1.5	SSW
04:00 - 05:00	1.4	SSW
05:00 - 06:00	1.2	SSW
06:00 - 07:00	1.3	SW
07:00 - 08:00	0.4	WSW
08:00 - 09:00	1.1	E
09:00 - 10:00	0.7	W
10:00 - 11:00	0.5	WSW
11:00 - 12:00	0.5	WSW
12:00 - 13:00	0.7	SW



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda J.
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 20-21 May 2025

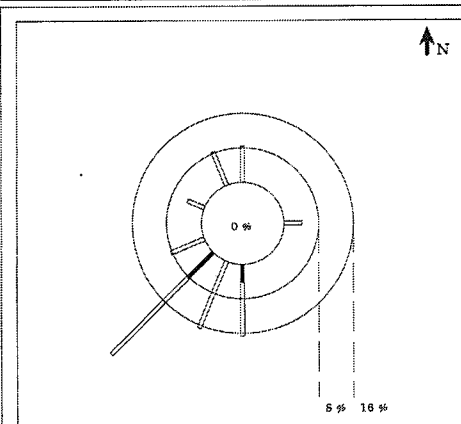
Wind Speed Model : Novalynx WS-25

Serial No : A5086

Wind Direction Model : Novalynx WS-25

Serial No : A5086

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5 - 1 m/s	1 - 2 m/s	2 - 3 m/s	3 - 4 m/s	4 - 6 m/s	More than 6	
N	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0417	0.1250	0.0000	0.0000	0.0000	0.0000	0.1667
SSW	0.0000	0.1667	0.0000	0.0000	0.0000	0.0000	0.1667
SW	0.0833	0.2500	0.0000	0.0000	0.0000	0.0000	0.3333
WSW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
W	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WNW	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
CALM	0.0000						



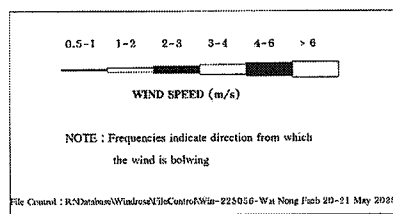
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Nong Faeb

Monitor period : 20-21 May 2025

Wind Speed Model : Novalynx WS-25

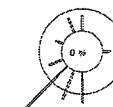
Serial No : A5086

Wind Direction Model : Novalynx WS-25

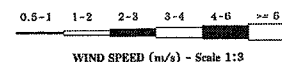
Serial No : A5086

Time	20-21 May 2025	
	WS(m/s)	WD
12:00 - 13:00	1.6	SSW
13:00 - 14:00	1.5	SW
14:00 - 15:00	1.1	SW
15:00 - 16:00	1.7	SW
16:00 - 17:00	1.6	SW
17:00 - 18:00	1.8	WSW
18:00 - 19:00	1.5	SSW
19:00 - 20:00	0.8	SW
20:00 - 21:00	1.6	S
21:00 - 22:00	1.0	SSW
22:00 - 23:00	1.7	SW
23:00 - 24:00	0.9	SW
00:00 - 01:00	1.0	SSW
01:00 - 02:00	1.4	S
02:00 - 03:00	0.8	S
03:00 - 04:00	1.6	S
04:00 - 05:00	1.4	SW
05:00 - 06:00	1.7	NNW
06:00 - 07:00	1.0	WNW
07:00 - 08:00	1.4	NNW
08:00 - 09:00	1.4	E
09:00 - 10:00	1.6	N
10:00 - 11:00	1.0	N
11:00 - 12:00	1.6	WSW

Wind Rose



12 46



File Control : R:\Database\Windrose\Win-225056-Wat Nong Faeb 20-21 May 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

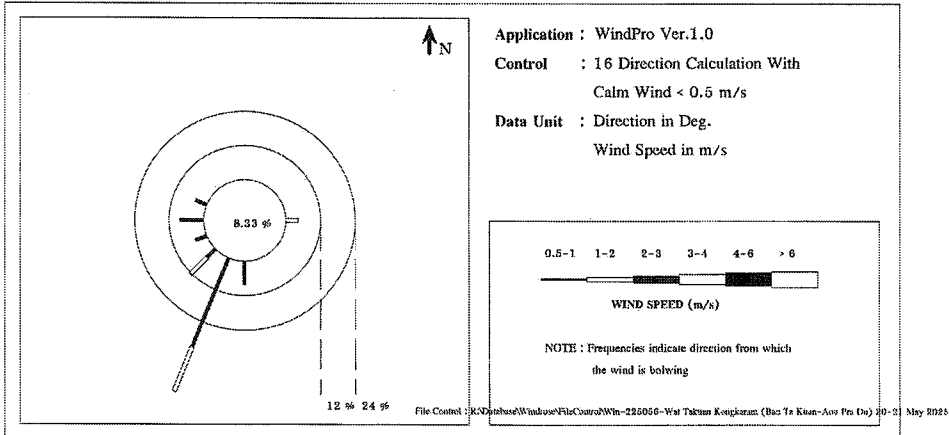
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 20-21 May 2025
Wind Speed Model : Novalynx WS-25 Serial No : A4907
Wind Direction Model : Novalynx WS-25 Serial No : A4907

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SSW	0.3333	0.1667	0.0000	0.0000	0.0000	0.0000	0.5000
SW	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
WSW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
W	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0833						



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

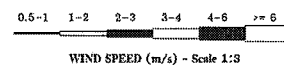


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 20-21 May 2025
Wind Speed Model : Novalynx WS-25 Serial No : A4907
Wind Direction Model : Novalynx WS-25 Serial No : A4907

Time	20-21 May 2025	
	WS(m/s)	WD
12:00 - 13:00	0.7	SSW
13:00 - 14:00	1.0	SW
14:00 - 15:00	0.7	SW
15:00 - 16:00	0.7	SSW
16:00 - 17:00	0.6	SSW
17:00 - 18:00	1.1	SSW
18:00 - 19:00	1.1	SSW
19:00 - 20:00	0.9	SSW
20:00 - 21:00	0.7	S
21:00 - 22:00	0.4	S
22:00 - 23:00	0.9	S
23:00 - 24:00	1.3	SSW
00:00 - 01:00	1.7	SSW
01:00 - 02:00	0.8	SSW
02:00 - 03:00	0.6	SSW
03:00 - 04:00	0.7	SSW
04:00 - 05:00	0.7	SSW
05:00 - 06:00	1.3	SW
06:00 - 07:00	0.4	WSW
07:00 - 08:00	1.1	E
08:00 - 09:00	0.7	WNW
09:00 - 10:00	0.5	W
10:00 - 11:00	0.5	W
11:00 - 12:00	0.7	WSW

Wind Rose



(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800
239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0930/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 20-21/05/2025	ANALYTICAL DATE	: 24-26/05/2025
SAMPLING TIME	: 13:14-12:49	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 22-05/2025	FILE CODE	: 225056_TO-15_May
REPORT DATE	: 26-05/2025		

Compound	SAMPLING LOCATION				STANDARD ^a (µg/m ³)
	Non Detection		Sol Ruam Pattana		
	ppbv	µg/m ³	ppbv	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

NT

(Mrs. Anaya Tippasuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduce, except in full, without official approval.

3. * Notification of the Pollution Control Department, dated December 18, B.E.2551(2008), which was published in the Royal Government

Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



บริษัท ซีคอต จำกัด
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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0930/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 20-21/05/2025	ANALYTICAL DATE	: 24-26/05/2025
SAMPLING TIME	: 12:31-12:20	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 22-05/2025	FILE CODE	: 225056_TO-15_May
REPORT DATE	: 26-05/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD ^a ($\mu\text{g}/\text{m}^3$)
			Wat Nang Faeb		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003 ^b	0.007	0.35	0.77	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd : EPA Methods TO-15,1999

Siriwan Chimsa-nga

(Miss Siriwan Chimsa-nga)

Analyst

NT

(Mrs. Anaya Tippasuk)

Technical Management Team

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239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND
TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envs@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co. Ltd. (BSTE) REQUEST SERVICE No. : 0930/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 20-21/05/2025 ANALYTICAL DATE : 24/26/05/2025
SAMPLING TIME : 12:53-12:55 SAMPLE CONDITION : Normal
RECEIVED DATE : 22/05/2025 FILE CODE : 225056_TO-15_May
REPORT DATE : 26/05/2025

Compound	SAMPLING LOCATION				STANDARD* ($\mu\text{g}/\text{m}^3$)
	Non Detection		Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pru Du)		
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 2nd EPA Methods TO-15, 1999

Sirwan Chimsa-nga
(Miss Sirwan Chimsa-nga)

Analyst

(Mrs. Anaya Tippasuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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Gazette Vol. 126. Special Part 13D dated January 27, B.E. 2552 (2009).

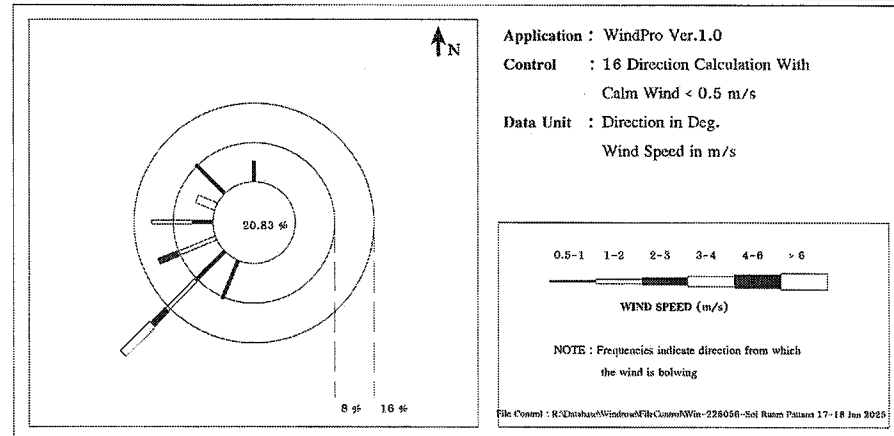
R:\Database\Windrose\BstControl\Win-225056-Soi Ruam Pattana 17-18 Jun 2025



Meteorological Monitoring Results : Wind Rose
MTR-BSTE (Site 1)

Location : Soi Ruam Pattana Monitor period : 17-18 Jun 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5084
Wind Direction Model : Novalynx WS-25 Serial No : A5084

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0833	0.0833	0.0417	0.0833	0.0000	0.0000	0.2917
WSW	0.0000	0.0833	0.0417	0.0000	0.0000	0.0000	0.1250
W	0.0417	0.0833	0.0000	0.0000	0.0000	0.0000	0.1250
WNW	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	0.0417
NW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.2083						



(Miss Katesarin Vorradevitayaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

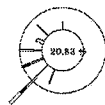


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

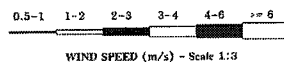
Location : Soi Ruam Pattana Monitor period : 17-18 Jun 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5084
Wind Direction Model : Novalynx WS-25 Serial No : A5084

Time	17-18 Jun 2025	
	WS(m/s)	WD
13:00 - 14:00	2.4	SW
14:00 - 15:00	3.4	SW
15:00 - 16:00	1.0	SW
16:00 - 17:00	2.6	WSW
17:00 - 18:00	1.9	SW
18:00 - 19:00	0.4	SW
19:00 - 20:00	0.8	SW
20:00 - 21:00	3.2	SW
21:00 - 22:00	0.7	SSW
22:00 - 23:00	1.4	WSW
23:00 - 24:00	0.9	SW
00:00 - 01:00	1.4	W
01:00 - 02:00	1.9	W
02:00 - 03:00	0.8	NW
03:00 - 04:00	0.0	N
04:00 - 05:00	0.1	N
05:00 - 06:00	0.0	N
06:00 - 07:00	0.0	N
07:00 - 08:00	0.5	W
08:00 - 09:00	3.2	WNW
09:00 - 10:00	0.9	NW
10:00 - 11:00	0.7	N
11:00 - 12:00	1.8	WSW
12:00 - 13:00	0.8	SSW

Wind Rose



12 %



File Control : R:\Database\Winrose\Win-Control\Win-225056-U-Soi Ruam Pattana 17-18 Jun 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

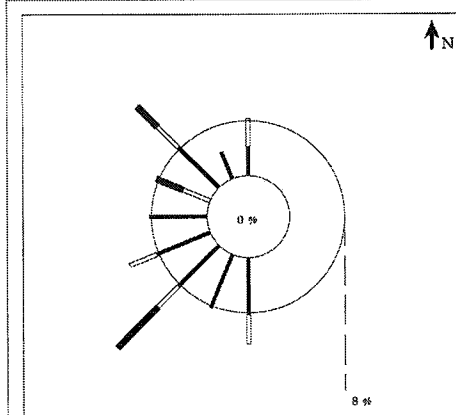
(Miss Preeda Somjai)
Technical Management Team



Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeh Monitor period : 17-18 Jun 2025
Wind Speed Model : Novalynx WS-25 Serial No : A5088
Wind Direction Model : Novalynx WS-25 Serial No : A5088

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0417	0.0417	0.0000	0.0000	0.0000	0.0000	0.0833
NNE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ENE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
S	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
SSW	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
SW	0.0833	0.0417	0.0833	0.0000	0.0000	0.0000	0.2083
WSW	0.0833	0.0417	0.0000	0.0000	0.0000	0.0000	0.1250
W	0.0833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0417	0.0417	0.0000	0.0000	0.0000	0.0833
NW	0.0833	0.0417	0.0417	0.0000	0.0000	0.0000	0.1667
NNW	0.0417	0.0000	0.0000	0.0000	0.0000	0.0000	0.0417
CALM	0.0000						



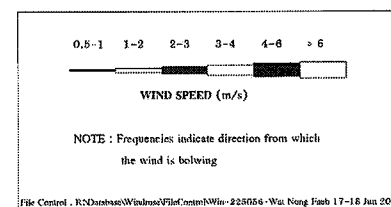
Application : WindPro Ver.1.0

Control : 16 Direction Calculation With

Calm Wind < 0.5 m/s

Data Unit : Direction in Deg.

Wind Speed in m/s



NOTE : Frequencies indicate direction from which
the wind is blowing

File Control : R:\Database\Winrose\Win-Control\Win-225056-U-Wat Nong Faeh 17-18 Jun 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team

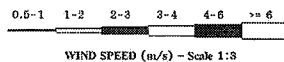


Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Nong Faeb Monitor period : 17-18 Jun 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A5088
 Wind Direction Model : Novalynx WS-25 Serial No : A5088

Time	17-18 Jun 2025	
	WS(m/s)	WD
13:00 - 14:00	0.8	W
14:00 - 15:00	0.7	W
15:00 - 16:00	0.8	SSW
16:00 - 17:00	2.5	NW
17:00 - 18:00	2.9	SW
18:00 - 19:00	0.7	WSW
19:00 - 20:00	0.7	S
20:00 - 21:00	1.5	N
21:00 - 22:00	1.3	WSW
22:00 - 23:00	0.9	S
23:00 - 24:00	1.0	S
00:00 - 01:00	0.8	SSW
01:00 - 02:00	0.8	SW
02:00 - 03:00	0.8	WSW
03:00 - 04:00	2.0	WNW
04:00 - 05:00	1.0	NW
05:00 - 06:00	0.9	NW
06:00 - 07:00	0.8	NW
07:00 - 08:00	0.8	N
08:00 - 09:00	0.8	NNW
09:00 - 10:00	1.0	WNW
10:00 - 11:00	2.6	SW
11:00 - 12:00	0.7	SW
12:00 - 13:00	1.0	SW

Wind Rose



File Control : R:\Database\Windrose\FileControl\Win-225056-Wat Nong Faeb 17-18 Jun 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

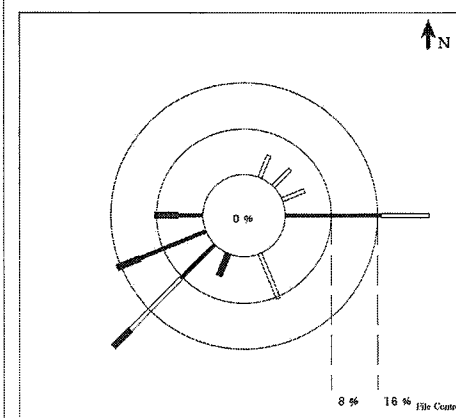
Preeda S.
(Miss Preeda Somjai)
Technical Management Team



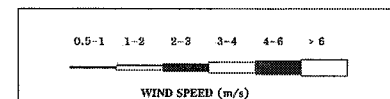
Meteorological Monitoring Results : Wind Rose MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 17-18 Jun 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A5086
 Wind Direction Model : Novalynx WS-25 Serial No : A5086

Direction	Percentage of Occurrence of Wind Direct Grouped in Various Wind Speed						Total
	0.5-1 m/s	1-2 m/s	2-3 m/s	3-4 m/s	4-6 m/s	More than 6	
N	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
NE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
ENE	0.0000	0.0417	0.0000	0.0000	0.0000	0.0000	0.0417
E	0.1667	0.0833	0.0000	0.0000	0.0000	0.0000	0.2500
ESE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSE	0.0000	0.0833	0.0000	0.0000	0.0000	0.0000	0.0833
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SSW	0.0000	0.0000	0.0417	0.0000	0.0000	0.0000	0.0417
SW	0.0833	0.1250	0.0417	0.0000	0.0000	0.0000	0.2500
WSW	0.1250	0.0000	0.0417	0.0000	0.0000	0.0000	0.1667
W	0.0417	0.0000	0.0417	0.0000	0.0000	0.0000	0.0833
WNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NNW	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CALM	0.0000						



Application : WindPro Ver.1.0
 Control : 16 Direction Calculation With
 Calm Wind < 0.5 m/s
 Data Unit : Direction in Deg.
 Wind Speed in m/s



NOTE : Frequencies indicate direction from which the wind is blowing

File Control : R:\Database\Windrose\FileControl\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 17-18 Jun 2025

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team



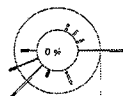
Meteorological Monitoring Results : Wind Rose

MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) Monitor period : 17-18 Jun 2025
 Wind Speed Model : Novalynx WS-25 Serial No : A5086
 Wind Direction Model : Novalynx WS-25 Serial No : A5086

17-18 Jun 2025		
Time	WS(m/s)	WD
13:00 - 14:00	0.5	SW
14:00 - 15:00	1.8	ENE
15:00 - 16:00	2.5	SSW
16:00 - 17:00	1.8	NNE
17:00 - 18:00	1.2	SW
18:00 - 19:00	1.7	SSE
19:00 - 20:00	2.5	W
20:00 - 21:00	2.2	SW
21:00 - 22:00	1.3	E
22:00 - 23:00	2.1	WSW
23:00 - 24:00	0.7	W
00:00 - 01:00	0.5	WSW
01:00 - 02:00	0.7	WSW
02:00 - 03:00	1.9	NE
03:00 - 04:00	0.5	E
04:00 - 05:00	0.7	E
05:00 - 06:00	0.7	E
06:00 - 07:00	0.6	E
07:00 - 08:00	1.2	E
08:00 - 09:00	1.4	SW
09:00 - 10:00	0.7	SW
10:00 - 11:00	0.7	WSW
11:00 - 12:00	1.8	SSE
12:00 - 13:00	1.6	SW

Wind Rose



12 hr

0.5-1 1-2 2-3 3-4 4-6 >=6

WIND SPEED (m/s) - Scale 1:3

File Content: R:\Database\Windrose\Win-225056-Wat Takuan Kongkaram (Ban Ta Kuan-Aou Pra Du) 17-18 Jun 2025

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Preeda Somjai)
 Technical Management Team



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 TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 1141/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Subatmospheric Pressure Sampling
SAMPLING DATE	: 17-18/06/2025	ANALYTICAL DATE	: 22-24/06/2025
SAMPLING TIME	: 14:10-14:09	SAMPLE CONDITION	: Normal
RECEIVED DATE	: 19/06/2025	FILE CODE	: 225056_TO-15_June
REPORT DATE	: 24/06/2025		

Compound	Non Detection		SAMPLING LOCATION		STANDARD*
	ppbv	µg/m ³	Wat Nong Fach	µg/m ³	
1,3-butadiene	0.003	0.007	ND	ND	5.3

Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd ed., EPA Methods TO-15.1992

(Miss Siriwan Chimsa-nga)
 Analyst

(Mrs. Araya Tipparuk)
 Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduce, except in full, without official approval.

3. * Notification of the Pollution Control Department, dated December 18.B.E.2551(2008), which was published in the Royal Government Gazette Vol. 126, Special Part 13D dated January 27, B.E. 2552 (2009).



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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1141/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 17-18/06/2025 ANALYTICAL DATE : 22-24/06/2025
SAMPLING TIME : 15:12-15:02 SAMPLE CONDITION : Normal
RECEIVED DATE : 19/06/2025 FILE CODE : 225056_TO-15_June
REPORT DATE : 24/06/2025

Compound	Non Detection		SAMPLING LOCATION Sri Rung Pattana		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	0.40	0.80	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 4th : EPA Methods TO-15,1999

Sirivan Chimsanaga

(Miss Sirivan Chimsanaga)

Analyst

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)

Technical Management Team

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AMBIENT AIR QUALITY ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1141/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Subatmospheric Pressure Sampling
SAMPLING DATE : 17-18/06/2025 ANALYTICAL DATE : 22-24/06/2025
SAMPLING TIME : 14:50-14:32 SAMPLE CONDITION : Normal
RECEIVED DATE : 19/06/2025 FILE CODE : 225056_TO-15_June
REPORT DATE : 24/06/2025

Compound	Non Detection		SAMPLING LOCATION Wat Takuan Kongkaram (Ban Ta Kuan-Anu Pra Du)		STANDARD* ($\mu\text{g}/\text{m}^3$)
	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$	
1,3-butadiene	0.003	0.007	0.37	0.82	5.3

Methods for the Determination of Toxic Organic Compound in Ambient Air, 4th : EPA Methods TO-15,1999

Sirivan Chimsanaga

(Miss Sirivan Chimsanaga)

Analyst

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)

Technical Management Team

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จากปล่องระบายอากาศ



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 21/04/2025
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : SBR Dryer (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 11.60 m/s
Diameter : 0.92 x 0.63 m Flow Rate* : 22,234 Ncu.m/hr
Temperature : 36.0 °C Moisture : 4.0 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	ND (<0.01)	-	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Maing Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. ND = non-detectable

6. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 22/04/2025
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : SBR Dryer (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 11.4 m/s
Diameter : 0.92 x 0.63 m Flow Rate* : 21,811 Ncu.m/hr
Temperature : 38.0 °C Moisture : 3.8 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	1.36	-	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Maing Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

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2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 23/04/2025
RECEIVED DATE : 24/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : SBR Dryer (Outlet) OPERATOR : Mr.Romniadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 11 m/s
Diameter : 0.92 x 0.63 m Flow Rate* : 20,914 Ncu.m/hr
Temperature : 41.0 °C Moisture : 3.7 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	2.93	-	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 24/04/2025
RECEIVED DATE : 25/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : SBR Dryer (Outlet) OPERATOR : Mr.Romniadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 30.0 m Gas Velocity : 10.9 m/s
Diameter : 0.92 x 0.63 m Flow Rate* : 20,520 Ncu.m/hr
Temperature : 42.0 °C Moisture : 3.6 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	0.99	-	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

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2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 225056-Sik-2504-0240
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 25/04/2025
RECEIVED DATE	: 28/04/2025	ANALYTICAL DATE	: 28/04/2025
REPORT DATE	: 09/05/2025	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr.Rommadon Lemmad
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 10.40	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 19,553	Ncu.m/hr
Temperature	: 44.0	°C	Moisture	: 3.8	%
Excess Oxygen	: 20.8	%			

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	2.0	*	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 225056-Sik-2504-0240
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 26/04/2025
RECEIVED DATE	: 30/04/2025	ANALYTICAL DATE	: 02/05/2025
REPORT DATE	: 09/05/2025	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr.Rommadon Lemmad
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 10.8	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 20,724	Ncu.m/hr
Temperature	: 36.0	°C	Moisture	: 3.8	%
Excess Oxygen	: 20.9	%			

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	ND (<0.01)	*	US.EPA Method 18

Sudaporn S.
(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch
(Miss Narisa Poowasanpetch)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. ND = non-detectable

6. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 225056-Stk-2504-0240
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 27/04/2025
RECEIVED DATE	: 30/04/2025	ANALYTICAL DATE	: 02/05/2025
REPORT DATE	: 09/05/2025	SAMPLE CONDITION	: Normal
STACK LOCATION	: SBR Dryer (Outlet)	OPERATOR	: Mr.Rommadon Lemmad
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 30.0	m	Gas Velocity	: 11.1	m/s
Diameter	: 0.92 x 0.63	m	Flow Rate*	: 21.145	Ncu.m/hr
Temperature	: 40.0	°C	Moisture	: 3.7	%
Excess Oxygen	: 20.9	%			

PARAMETER	UNITS	RESULTS ^{1/}	STANDARD	REFERENCE METHOD
*Styrene	ppm	ND (<0.01)		US.EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Narisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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3. ^{1/} At standard pressure of 760 mmHg and temperature of 25 °C, dry basis.

4. Production grade during the measurement period is SBR 1502

5. ND = non-detectable

6. * Not registered with the Department of Industrial Works.



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STACK EMISSION ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd.	REF. NO.	: 225056-Stk-2504-0240
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING DATE	: 21/04/2025
RECEIVED DATE	: 23/04/2025	ANALYTICAL DATE	: 28/04/2025
REPORT DATE	: 09/05/2025	SAMPLE CONDITION	: Normal
STACK LOCATION	: A/C Unit of Surge II (Outlet)	OPERATOR	: Mr.Rommadon Lemmad
SOURCE DESCRIPTION	: Process	FUEL TYPE	: *

STACK DESCRIPTION

Height	: 6.0	m	Gas Velocity	: 0.60	m/s
Diameter	: 0.30	m	Flow Rate*	: 131.4	Ncu.m/hr
Temperature	: 37.0	°C	Moisture	: 4.2	%
Excess Oxygen	: 20.9	%			

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US.EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

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4. ^{1/} Emission standard according to EIA report.

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Suk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 22/04/2025
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 131.4 Nm³/hr
Temperature : 38.0 °C Moisture : 4.0 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US.EPA Method 18

Sudaporn S.

(Miss Sudaporn Soonthorn)

Analyst

Miss Narisa Poowasanpetch

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Technical Management Team

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Suk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 23/04/2025
RECEIVED DATE : 24/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 131.4 Nm³/hr
Temperature : 38.0 °C Moisture : 3.7 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US.EPA Method 18

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 24/04/2025
RECEIVED DATE : 25/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 131.4 Nm³/hr
Temperature : 38.0 °C Moisture : 3.7 %
Excess Oxygen : 20.9 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US.EPA Method 18

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 25/04/2025
RECEIVED DATE : 28/04/2025 ANALYTICAL DATE : 28/04/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 131.4 Nm³/hr
Temperature : 37.0 °C Moisture : 3.7 %
Excess Oxygen : 20.8 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US.EPA Method 18

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 26/04/2025
RECEIVED DATE : 30/04/2025 ANALYTICAL DATE : 02/05/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 131.40 Nm³/hr
Temperature : 38.0 °C Moisture : 3.7 %
Excess Oxygen : 20.8 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US EPA Method 18

Sudaporn S.
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Analyst

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(Miss Narisa Poowasanpetch)

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STACK EMISSION ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. REF. NO. : 225056-Stk-2504-0240
SAMPLING BY : SECOT Co., Ltd. SAMPLING DATE : 27/04/2025
RECEIVED DATE : 30/04/2025 ANALYTICAL DATE : 02/05/2025
REPORT DATE : 09/05/2025 SAMPLE CONDITION : Normal
STACK LOCATION : A/C Unit of Surge II (Outlet) OPERATOR : Mr.Rommadon Lemmad
SOURCE DESCRIPTION : Process FUEL TYPE : *

STACK DESCRIPTION

Height : 6.0 m Gas Velocity : 0.60 m/s
Diameter : 0.30 m Flow Rate* : 133.80 Nm³/hr
Temperature : 32.0 °C Moisture : 2.9 %
Excess Oxygen : 20.8 %

PARAMETER	UNITS	RESULTS*	STANDARD	REFERENCE METHOD
**1,3-Butadiene	ppm	ND (<0.01)	5 ^{1/}	US EPA Method 18

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ใบรับรองผลการตรวจวัดระดับเสียงทั่วไป





Noise Monitoring Result : Community Noise MTR-BSTE (Site 1)

Location : Boundary-S			Monitor Period : 21-28 Apr 2025				
SLM Model : Cirrus CR162B			Serial No : G300990				
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR:515			Serial No : 97097				
Calibration Ref dB(A) : 94.0			Certified Date : 02 Oct 2024				
SLM Reading / Adjust dB(A) : 93.0/0.7			Expire Date : 01 Oct 2025				
Cal Sheet No.: CR-515-2025-110							
Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	59.4	59.5	69.3	58.5	58.9	61.7	61.3
12:00 - 13:00	58.9	58.7	60.1	57.6	57.3	62.1	62.1
13:00 - 14:00	60.0	63.1	61.2	58.3	58.2	61.8	62.6
14:00 - 15:00	59.5	60.3	61.6	61.7	62.1	62.7	62.0
15:00 - 16:00	62.8	64.0	59.1	59.6	60.5	61.9	62.0
16:00 - 17:00	58.5	58.0	66.5	59.1	65.5	62.2	61.5
17:00 - 18:00	58.4	65.1	60.2	61.4	58.6	62.7	62.0
18:00 - 19:00	57.9	58.9	58.7	58.4	58.1	62.5	61.5
19:00 - 20:00	58.3	58.8	59.0	58.9	58.3	63.3	61.4
20:00 - 21:00	59.3	58.5	58.7	58.2	59.7	63.3	61.7
21:00 - 22:00	58.8	58.8	59.4	59.6	59.4	62.8	62.7
22:00 - 23:00	62.4	62.3	63.1	62.6	63.3	62.2	61.5
23:00 - 00:00	62.5	62.0	63.5	63.5	63.2	62.6	61.6
00:00 - 01:00	62.0	61.6	63.2	62.9	63.1	62.7	60.1
01:00 - 02:00	61.9	61.2	63.6	62.7	62.5	62.5	60.1
02:00 - 03:00	62.0	61.1	62.8	62.4	62.2	62.4	62.2
03:00 - 04:00	61.8	61.5	62.6	62.1	62.1	62.4	61.9
04:00 - 05:00	61.8	61.4	61.9	61.7	62.4	61.9	62.5
05:00 - 06:00	61.7	61.5	61.9	61.7	62.0	61.9	62.5
06:00 - 07:00	62.1	61.4	61.8	61.6	62.5	65.7	62.5
07:00 - 08:00	62.0	61.2	61.7	61.4	62.1	65.8	62.6
08:00 - 09:00	61.2	61.8	61.3	62.1	61.9	62.3	62.4
09:00 - 10:00	59.9	63.1	62.2	61.2	61.9	61.5	61.8
10:00 - 11:00	59.5	62.5	60.0	58.4	61.7	61.8	62.5
Leq(24)*	60.8	61.5	61.8	61.0	61.6	62.8	61.9
Ldn	68.2	68.0	69.0	68.5	68.8	69.3	68.2
Lmax **	91.1	90.4	90.2	88.3	88.3	85.1	87.9
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 11:00-11:00

** Maximum Sound Pressure Level between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-BSTE (Site 1)

Location : Boundary-S		Monitor Period : 21-28 Apr 2025					
SLM Model : Cirrus CR162B		Serial No : G300990					
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR:515		Serial No : 97097					
Calibration Ref dB(A) : 94.0		Certified Date : 02 Oct 2024					
SLM Reading / Adjust dB(A) : 93.0/0.7		Expire Date : 01 Oct 2025					
Cal Sheet No.: CR-515-2025-110							
Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	57.6	57.0	58.7	56.9	56.3	60.2	60.4
12:00 - 13:00	57.4	56.4	56.7	56.3	56.3	60.5	60.6
13:00 - 14:00	57.7	56.6	57.0	56.6	56.3	60.8	61.7
14:00 - 15:00	57.6	56.7	57.6	56.9	57.2	61.1	60.8
15:00 - 16:00	57.8	56.8	57.5	56.9	57.1	60.7	61.0
16:00 - 17:00	57.4	56.7	57.4	57.2	57.4	61.1	60.7
17:00 - 18:00	57.2	57.6	57.8	57.5	57.2	61.3	61.1
18:00 - 19:00	56.9	57.2	57.9	57.2	57.4	61.2	60.6
19:00 - 20:00	57.4	57.2	58.0	57.4	57.5	61.7	60.5
20:00 - 21:00	58.1	57.4	57.9	57.4	58.1	61.9	60.7
21:00 - 22:00	58.2	57.9	58.3	57.9	58.3	61.4	61.0
22:00 - 23:00	61.6	61.3	62.1	61.3	62.3	60.9	60.6
23:00 - 00:00	61.5	61.0	62.1	61.8	62.1	61.5	59.7
00:00 - 01:00	60.9	60.6	62.0	61.8	62.0	61.7	59.6
01:00 - 02:00	60.9	60.3	62.4	61.5	61.4	61.6	59.7
02:00 - 03:00	61.0	60.2	61.8	61.3	61.2	61.4	61.4
03:00 - 04:00	60.7	60.6	61.5	61.0	61.1	61.3	61.2
04:00 - 05:00	60.9	60.5	60.9	60.8	61.3	61.0	61.7
05:00 - 06:00	60.8	60.5	60.9	60.9	61.2	60.9	61.4
06:00 - 07:00	61.1	60.5	60.9	60.5	61.4	60.5	61.6
07:00 - 08:00	61.0	60.1	60.4	60.1	61.1	61.4	60.7
08:00 - 09:00	59.5	60.0	60.1	59.9	60.9	61.4	60.8
09:00 - 10:00	57.7	57.6	57.9	57.9	60.2	60.5	57.5
10:00 - 11:00	57.6	57.1	57.3	56.5	60.2	60.0	57.8
L90(avg)*	59.4	59.0	59.7	59.4	59.9	61.1	60.6

Remark : * Average time between 11:00-11:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-BSTE (Site 1)


Location : Boundary-E Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302333
Site Operator : Mr. Siwanon Kulawong


Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	59.4	60.0	60.5	60.8	61.2	60.9	60.0
12:00 - 13:00	58.5	58.0	59.5	58.3	59.5	60.6	59.6
13:00 - 14:00	59.5	61.1	62.3	61.1	61.4	61.1	60.5
14:00 - 15:00	59.3	61.6	64.4	62.4	61.4	61.3	60.4
15:00 - 16:00	59.2	60.0	61.1	60.1	60.1	60.6	60.5
16:00 - 17:00	61.2	60.5	61.4	60.4	60.9	61.4	60.5
17:00 - 18:00	63.8	62.9	64.3	60.7	62.9	61.1	61.5
18:00 - 19:00	61.2	61.4	62.5	63.3	60.4	60.9	61.5
19:00 - 20:00	60.1	59.2	61.8	61.7	59.9	60.1	59.9
20:00 - 21:00	57.1	58.9	58.3	57.2	58.2	59.6	60.0
21:00 - 22:00	65.1	59.8	58.1	57.9	58.7	59.9	59.1
22:00 - 23:00	60.4	61.2	59.9	60.1	60.1	58.9	59.3
23:00 - 00:00	60.5	60.3	59.6	60.8	59.8	58.7	59.6
00:00 - 01:00	60.5	60.1	61.0	60.8	60.7	59.0	59.1
01:00 - 02:00	60.5	59.6	60.6	61.0	60.5	58.5	59.0
02:00 - 03:00	61.3	59.6	60.7	60.2	60.2	58.0	59.7
03:00 - 04:00	60.4	59.4	60.2	59.8	59.5	58.2	59.3
04:00 - 05:00	60.1	59.4	60.2	60.2	59.7	58.3	59.3
05:00 - 06:00	60.1	61.0	61.1	60.3	60.2	59.1	60.6
06:00 - 07:00	62.3	63.7	61.8	61.8	61.1	63.0	63.9
07:00 - 08:00	66.9	71.1	65.4	65.4	62.6	64.2	66.7
08:00 - 09:00	63.0	63.8	64.5	64.6	62.5	60.9	63.1
09:00 - 10:00	64.7	62.7	64.3	62.9	60.5	59.9	63.8
10:00 - 11:00	60.8	64.7	61.7	60.5	61.1	59.8	61.8
Leq(24)*	61.7	62.5	61.9	61.3	60.7	60.4	61.3
Ldn	67.4	67.6	67.3	67.2	66.8	66.1	67.0
Lmax **	92.7	95.5	94.1	94.7	90.1	89.2	96.6
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 11:00-11:00

** Maximum Sound Pressure Level between 11:00-11:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-BSTE (Site 1)

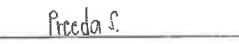
Location : Boundary-E Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302333
Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	56.3	56.3	56.6	57.2	56.3	58.2	58.1
12:00 - 13:00	55.4	55.3	56.3	55.5	55.2	58.1	57.7
13:00 - 14:00	55.9	56.3	57.7	57.2	56.8	58.9	58.5
14:00 - 15:00	56.1	57.0	57.7	56.6	57.0	59.1	58.5
15:00 - 16:00	56.3	56.4	57.2	57.1	55.9	58.6	58.4
16:00 - 17:00	56.8	57.1	56.8	55.8	56.2	58.5	58.5
17:00 - 18:00	56.9	56.9	57.7	56.5	56.9	58.1	59.1
18:00 - 19:00	56.5	56.5	57.6	56.6	56.4	58.0	58.8
19:00 - 20:00	56.0	55.6	55.7	55.5	54.9	58.1	58.4
20:00 - 21:00	55.4	55.7	55.9	55.2	55.6	58.2	58.7
21:00 - 22:00	55.7	56.6	56.4	56.0	56.4	58.1	58.0
22:00 - 23:00	58.9	59.5	58.6	58.5	58.4	57.7	57.8
23:00 - 00:00	59.2	58.8	58.2	58.7	58.4	57.7	58.1
00:00 - 01:00	59.1	59.0	59.2	59.2	58.9	58.0	57.9
01:00 - 02:00	59.2	58.6	59.2	59.3	59.1	57.4	57.9
02:00 - 03:00	59.2	58.6	59.1	58.9	58.8	57.0	58.6
03:00 - 04:00	58.9	58.4	59.0	58.7	58.4	57.0	58.7
04:00 - 05:00	58.4	58.3	58.9	58.6	58.4	57.4	58.3
05:00 - 06:00	58.4	58.5	58.7	58.4	57.9	57.8	58.6
06:00 - 07:00	59.4	59.3	59.5	59.1	58.4	58.9	59.1
07:00 - 08:00	59.8	60.3	59.9	58.9	59.1	59.3	59.5
08:00 - 09:00	58.8	60.2	59.4	58.4	58.8	58.4	59.3
09:00 - 10:00	58.1	57.8	59.4	58.6	58.1	58.0	57.7
10:00 - 11:00	57.4	57.1	57.3	57.5	58.3	57.8	57.9
L90(avg)*	57.8	57.9	58.2	57.7	57.6	58.1	58.4

Remark : * Average time between 11:00-11:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

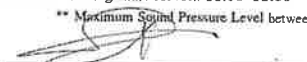



Noise Monitoring Result : Community Noise MTR-BSTE (Site 1)

Location : Boundary-W		Monitor Period : 21-28 Apr 2025					
SLM Model : Cirrus CR162B		Serial No : G300769					
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR:515		Serial No : 97097					
Calibration Ref dB(A) : 94.0		Certified Date : 02 Oct 2024					
SLM Reading / Adjust dB(A) : 94.4/-0.7		Expire Date : 01 Oct 2025					
Cal Sheet No.: CR-515-2025-110							
Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	69.4	69.6	68.4	68.7	66.9	68.2	67.4
12:00 - 13:00	68.7	67.8	68.1	67.7	66.3	68.5	67.8
13:00 - 14:00	69.7	67.1	68.2	68.0	65.9	68.7	67.3
14:00 - 15:00	67.8	67.3	69.3	67.6	66.7	68.5	68.3
15:00 - 16:00	68.4	67.3	68.9	67.6	67.4	68.4	68.0
16:00 - 17:00	69.0	66.8	69.3	67.9	67.0	67.7	67.5
17:00 - 18:00	71.6	70.7	70.7	69.6	69.9	71.0	70.2
18:00 - 19:00	69.3	70.5	70.2	69.6	70.9	71.0	67.4
19:00 - 20:00	70.0	69.5	70.3	71.0	70.3	69.8	69.4
20:00 - 21:00	69.2	67.9	70.4	67.6	69.9	67.0	68.8
21:00 - 22:00	66.5	66.4	68.0	65.7	67.0	65.2	66.4
22:00 - 23:00	65.5	66.4	68.1	65.5	67.3	64.4	65.7
23:00 - 00:00	66.0	67.1	67.5	66.3	65.4	65.0	66.0
00:00 - 01:00	65.8	66.1	66.6	66.8	66.3	65.3	65.6
01:00 - 02:00	63.9	65.7	65.9	66.1	66.7	65.1	64.6
02:00 - 03:00	64.7	65.0	66.5	66.9	66.2	64.9	64.7
03:00 - 04:00	65.9	66.1	66.7	66.4	67.0	65.9	67.4
04:00 - 05:00	65.5	66.0	66.6	66.6	66.9	67.4	66.3
05:00 - 06:00	67.4	66.9	66.6	66.1	66.6	67.7	67.7
06:00 - 07:00	69.8	69.6	69.9	68.8	69.7	69.8	71.2
07:00 - 08:00	71.9	72.3	72.2	71.5	72.7	71.1	72.6
08:00 - 09:00	69.1	70.5	69.4	68.3	68.8	68.8	71.8
09:00 - 10:00	68.4	68.1	68.8	69.4	67.0	68.8	69.6
10:00 - 11:00	71.2	68.0	67.3	67.6	67.7	67.4	69.2
Leq(24)*	68.6	68.3	68.8	68.2	68.4	68.2	68.5
Ldn	73.4	73.5	74.1	73.9	74.0	73.4	73.9
Lmax **	99.6	100.9	95.0	100.6	95.3	97.9	97.0
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 11:00-11:00

** Maximum Sound Pressure Level between 11:00-11:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team




Noise Monitoring Result : Background Noise MTR-BSTE (Site 1)

Location : Boundary-W		Monitor Period : 21-28 Apr 2025					
SLM Model : Cirrus CR162B		Serial No : G300769					
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR:515		Serial No : 97097					
Calibration Ref dB(A) : 94.0		Certified Date : 02 Oct 2024					
SLM Reading / Adjust dB(A) : 94.4/-0.7		Expire Date : 01 Oct 2025					
Cal Sheet No.: CR-515-2025-110							
Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
11:00 - 12:00	64.4	63.9	63.8	61.6	60.3	62.3	63.4
12:00 - 13:00	62.8	61.3	63.7	60.7	60.0	62.7	63.3
13:00 - 14:00	63.8	60.0	64.1	61.6	60.0	63.0	64.4
14:00 - 15:00	63.5	61.5	64.1	62.0	60.5	63.9	64.6
15:00 - 16:00	62.6	61.2	63.2	61.6	60.5	64.0	64.4
16:00 - 17:00	63.4	60.6	62.9	61.3	60.4	64.3	63.5
17:00 - 18:00	63.7	62.7	63.9	61.4	61.0	64.2	63.5
18:00 - 19:00	62.1	61.4	63.6	60.9	65.4	63.6	62.9
19:00 - 20:00	63.3	62.8	64.7	61.2	65.1	63.8	62.6
20:00 - 21:00	62.4	62.6	64.0	62.3	64.6	62.2	63.1
21:00 - 22:00	62.1	61.5	63.6	62.1	63.5	62.3	62.2
22:00 - 23:00	61.7	61.7	63.3	62.0	63.6	61.7	63.0
23:00 - 00:00	62.5	62.5	63.1	62.8	63.5	62.0	62.0
00:00 - 01:00	62.1	62.1	62.3	65.9	63.6	62.2	61.9
01:00 - 02:00	61.3	63.1	62.7	66.4	63.8	62.4	62.1
02:00 - 03:00	61.6	63.6	63.1	64.6	63.8	62.5	62.0
03:00 - 04:00	61.9	62.2	63.1	64.0	64.2	62.4	61.7
04:00 - 05:00	61.7	62.5	62.7	63.1	64.6	62.8	62.9
05:00 - 06:00	61.8	62.2	63.3	62.8	64.5	64.2	64.9
06:00 - 07:00	63.6	64.8	64.4	61.9	64.9	63.5	65.8
07:00 - 08:00	65.4	65.7	66.0	63.4	65.7	65.7	66.1
08:00 - 09:00	62.8	64.8	63.2	61.3	61.6	64.6	65.0
09:00 - 10:00	62.0	64.0	62.8	61.8	61.3	63.6	63.6
10:00 - 11:00	65.3	63.8	61.6	60.6	62.2	63.5	64.1
L90(avg)*	63.0	62.8	63.6	62.7	63.2	63.3	63.6

Remark : * Average time between 11:00-11:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team



Noise Monitoring Result : Community Noise MTR-BSTE (Site 1)

Location : Takuan-Ao Pradu Community Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302743
Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	53.5	51.8	50.4	51.4	52.3	53.2	51.6
15:00 - 16:00	50.9	51.2	51.2	51.0	51.6	55.8	53.8
16:00 - 17:00	53.4	53.2	53.1	53.7	54.7	52.0	52.5
17:00 - 18:00	54.9	54.9	56.7	55.1	53.7	53.2	51.7
18:00 - 19:00	56.8	55.1	54.9	55.8	55.6	56.2	56.1
19:00 - 20:00	52.3	50.8	50.2	50.4	51.3	51.1	50.9
20:00 - 21:00	49.3	49.5	48.7	49.7	49.9	50.5	51.2
21:00 - 22:00	48.4	48.9	45.9	51.4	47.4	48.2	50.3
22:00 - 23:00	49.7	50.8	50.1	51.0	48.1	48.5	48.7
23:00 - 00:00	50.4	49.7	46.8	50.6	47.0	48.3	48.8
00:00 - 01:00	50.2	49.4	47.5	51.1	49.5	47.5	47.7
01:00 - 02:00	49.5	49.5	51.8	50.7	51.1	46.4	48.8
02:00 - 03:00	53.1	50.4	49.1	50.2	50.5	55.1	52.9
03:00 - 04:00	50.1	49.8	49.1	50.1	49.3	46.1	48.1
04:00 - 05:00	49.7	50.2	50.8	50.7	49.5	48.4	46.2
05:00 - 06:00	56.5	54.9	55.6	55.8	56.1	56.7	56.5
06:00 - 07:00	54.1	54.2	54.4	54.1	53.8	54.4	54.0
07:00 - 08:00	54.3	54.8	57.9	54.4	53.7	56.1	53.3
08:00 - 09:00	52.1	53.9	53.7	52.6	52.6	52.2	51.9
09:00 - 10:00	52.7	52.4	52.8	49.9	52.5	56.8	53.5
10:00 - 11:00	51.5	55.7	54.6	57.5	52.9	51.3	52.8
11:00 - 12:00	51.3	54.5	56.6	50.7	54.2	51.4	51.4
12:00 - 13:00	51.5	52.9	54.2	54.4	57.9	52.9	51.0
13:00 - 14:00	50.8	52.3	51.5	52.8	55.6	52.1	52.6
Leq(24)*	52.6	52.7	53.1	52.9	53.0	53.0	52.2
Ldn	58.7	58.2	58.4	58.7	58.3	58.6	58.2
Lmax **	55.8	55.8	58.3	61.9	61.5	65.0	60.7
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 14:00-14:00

** Maximum Sound Pressure Level between 14:00-14:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Sonjai)
Technical Management Team



Noise Monitoring Result : Background Noise MTR-BSTE (Site 1)

Location : Takuan-Ao Pradu Community Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302743
Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	46.9	47.3	46.6	47.0	46.9	47.6	44.0
15:00 - 16:00	47.1	48.1	46.8	46.3	46.8	47.8	46.1
16:00 - 17:00	49.0	49.1	46.8	46.5	48.3	47.3	49.1
17:00 - 18:00	49.5	49.9	47.7	47.4	48.4	45.8	47.9
18:00 - 19:00	48.8	49.6	46.3	48.3	47.2	46.6	49.1
19:00 - 20:00	47.0	47.2	45.0	45.3	48.0	48.0	48.7
20:00 - 21:00	45.6	46.6	44.5	46.0	43.9	46.1	48.7
21:00 - 22:00	45.7	45.8	43.6	46.9	43.8	45.5	48.4
22:00 - 23:00	47.5	48.6	44.3	49.0	44.2	43.3	46.5
23:00 - 00:00	48.6	48.5	44.5	49.4	44.7	43.9	46.4
00:00 - 01:00	48.3	48.2	45.1	49.4	47.7	44.6	46.4
01:00 - 02:00	48.2	48.5	46.8	48.6	48.3	44.4	47.1
02:00 - 03:00	48.2	48.5	47.3	48.8	48.4	44.0	48.6
03:00 - 04:00	48.3	48.5	47.7	48.9	47.8	43.3	44.5
04:00 - 05:00	47.5	48.6	48.7	48.9	47.6	43.3	43.4
05:00 - 06:00	48.6	49.2	49.4	49.8	47.9	43.4	45.2
06:00 - 07:00	49.0	49.9	49.9	49.8	47.7	45.8	47.6
07:00 - 08:00	48.7	49.8	50.1	48.7	47.6	50.8	47.5
08:00 - 09:00	46.0	48.1	48.4	44.4	47.5	46.7	44.3
09:00 - 10:00	45.8	46.7	47.3	43.1	47.6	44.8	46.4
10:00 - 11:00	45.4	46.5	47.3	44.1	48.5	47.4	47.2
11:00 - 12:00	45.1	46.8	47.1	43.8	45.4	46.9	45.3
12:00 - 13:00	46.1	46.9	47.9	45.4	49.5	42.9	44.9
13:00 - 14:00	46.6	46.9	47.0	46.0	48.4	45.1	46.5
L90(avg)*	47.6	48.2	47.3	47.6	47.4	46.0	47.0

Remark : * Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Sonjai)
Technical Management Team




Noise Monitoring Result : Community Noise MTR-BSTE (Site 1)

Location : Soi Ruam Pattana				Monitor Period : 21-28 Apr 2025			
SLM Model : Cirrus CR162B				Serial No : G302741			
Site Operator : Mr. Siwanon Kulawong							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 02 Oct 2024			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 01 Oct 2025			
Cal Sheet No.: CR-515-2025-110							
Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	51.9	50.1	48.7	49.9	50.4	49.9	53.3
15:00 - 16:00	51.9	50.6	50.0	50.0	49.9	52.1	53.8
16:00 - 17:00	53.8	52.4	57.8	58.9	58.0	52.8	53.6
17:00 - 18:00	57.2	54.1	54.3	52.2	52.5	52.4	53.2
18:00 - 19:00	58.3	53.9	52.0	51.9	52.7	54.8	53.8
19:00 - 20:00	55.5	51.3	49.1	50.2	52.2	52.7	51.1
20:00 - 21:00	60.8	51.4	49.9	51.6	50.6	51.8	52.0
21:00 - 22:00	50.4	46.4	49.2	48.5	47.8	50.7	47.3
22:00 - 23:00	50.4	45.2	47.2	47.1	45.8	48.2	47.2
23:00 - 00:00	49.4	44.9	45.2	47.9	49.6	48.4	47.7
00:00 - 01:00	51.4	47.7	43.4	44.7	46.0	46.2	46.1
01:00 - 02:00	48.7	46.5	49.2	44.3	45.5	46.3	44.8
02:00 - 03:00	49.3	42.3	44.0	46.0	47.2	43.8	44.0
03:00 - 04:00	43.8	46.3	48.5	48.3	46.2	47.6	44.7
04:00 - 05:00	48.5	50.9	50.3	49.1	49.0	48.5	49.6
05:00 - 06:00	55.5	56.1	54.8	53.7	52.4	52.8	51.9
06:00 - 07:00	56.8	54.3	55.6	54.1	54.6	53.4	53.9
07:00 - 08:00	53.3	54.6	54.9	53.4	54.7	55.3	54.1
08:00 - 09:00	55.9	52.6	51.9	56.5	52.2	51.3	51.9
09:00 - 10:00	50.7	50.9	49.7	61.7	50.0	51.2	50.4
10:00 - 11:00	49.8	47.5	49.9	57.2	50.1	50.0	51.0
11:00 - 12:00	50.8	50.2	55.8	60.0	51.7	52.8	50.3
12:00 - 13:00	53.2	55.4	54.2	52.8	52.6	52.4	54.0
13:00 - 14:00	53.6	49.3	50.7	52.9	54.1	54.8	49.1
Leq(24)*	54.1	51.5	52.1	52.5	51.8	51.7	51.4
L _{dn}	59.0	57.2	57.4	57.0	56.7	56.4	56.1
L _{max} **	90.0	82.8	80.4	85.5	81.3	81.9	78.4
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 14:00-14:00

** Maximum Sound Pressure Level between 14:00-14:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team




Noise Monitoring Result : Background Noise MTR-BSTE (Site 1)

Location : Soi Ruam Pattana				Monitor Period : 21-28 Apr 2025			
SLM Model : Cirrus CR162B				Serial No : G302741			
Site Operator : Mr. Siwanon Kulawong-							
Calibrator Model : Cirrus CR:515				Serial No : 97097			
Calibration Ref dB(A) : 94.0				Certified Date : 02 Oct 2024			
SLM Reading / Adjust dB(A) : 93.7/0.0				Expire Date : 01 Oct 2025			
Cal Sheet No.: CR-515-2025-110							
Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	46.1	44.6	41.5	43.5	43.4	43.3	45.6
15:00 - 16:00	46.8	44.5	41.8	42.7	43.3	43.3	45.7
16:00 - 17:00	48.4	45.4	43.2	43.8	45.2	43.1	46.2
17:00 - 18:00	51.9	47.6	45.0	43.9	43.8	44.9	44.8
18:00 - 19:00	54.2	47.5	45.6	44.9	45.0	47.9	46.8
19:00 - 20:00	52.3	45.8	43.5	43.2	43.3	46.2	44.7
20:00 - 21:00	50.7	44.4	43.4	42.7	43.3	45.2	43.1
21:00 - 22:00	47.3	40.6	41.5	42.0	42.1	46.8	41.0
22:00 - 23:00	43.9	40.7	40.9	41.6	39.6	41.4	40.5
23:00 - 00:00	43.4	40.6	39.5	41.5	39.3	42.7	39.9
00:00 - 01:00	43.1	40.4	39.1	41.5	40.1	42.2	39.8
01:00 - 02:00	41.7	40.4	40.0	40.7	40.7	39.9	41.0
02:00 - 03:00	40.4	39.8	39.7	40.4	40.2	37.8	40.9
03:00 - 04:00	39.7	40.0	40.4	40.6	39.5	38.4	40.7
04:00 - 05:00	39.9	39.6	40.8	40.8	39.7	37.0	40.3
05:00 - 06:00	41.1	41.4	43.0	42.3	40.5	38.9	39.2
06:00 - 07:00	46.7	46.4	47.1	45.8	45.0	44.5	46.0
07:00 - 08:00	44.5	43.4	46.0	43.5	44.5	46.2	44.9
08:00 - 09:00	44.6	42.2	43.3	42.8	42.9	43.8	42.2
09:00 - 10:00	41.2	41.3	43.3	41.8	42.8	43.2	41.8
10:00 - 11:00	41.1	40.7	42.5	41.7	43.0	43.4	42.0
11:00 - 12:00	40.9	42.8	42.9	41.6	43.5	44.5	42.3
12:00 - 13:00	41.5	43.7	43.4	43.8	44.0	43.9	42.5
13:00 - 14:00	43.5	41.8	43.7	43.2	43.4	47.7	42.8
L90(avg)*	47.1	43.5	43.1	42.7	42.8	44.0	43.3

Remark : * Average time between 14:00-14:00


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


(Miss Preeda Somjai)
Technical Management Team

**Noise Monitoring Result : Community Noise**
MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302330
Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	Equivalent Sound Pressure Level (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	50.0	47.7	49.9	50.5	57.8	49.9	45.7
15:00 - 16:00	51.7	57.4	52.5	48.6	60.8	62.7	46.6
16:00 - 17:00	46.5	55.2	47.6	47.8	53.9	55.4	48.9
17:00 - 18:00	48.5	49.2	48.2	47.2	51.8	61.9	48.1
18:00 - 19:00	63.2	65.9	65.8	65.1	65.0	65.1	65.4
19:00 - 20:00	51.6	44.9	43.6	44.3	51.6	43.7	46.2
20:00 - 21:00	49.1	43.9	43.4	49.6	48.4	43.9	44.8
21:00 - 22:00	50.3	54.4	43.7	47.8	57.0	43.8	51.7
22:00 - 23:00	51.3	47.3	57.4	60.8	49.2	56.5	46.1
23:00 - 00:00	48.1	43.6	51.9	49.7	45.4	50.3	46.0
00:00 - 01:00	44.3	50.5	47.9	49.9	49.5	44.0	50.1
01:00 - 02:00	42.6	56.7	47.1	45.3	50.4	42.6	42.3
02:00 - 03:00	42.6	43.3	63.0	61.2	50.3	62.2	42.9
03:00 - 04:00	45.0	42.9	44.4	46.8	50.0	44.0	49.5
04:00 - 05:00	45.1	42.7	43.4	50.6	54.5	43.0	47.5
05:00 - 06:00	63.0	68.5	69.7	67.6	65.1	65.8	70.7
06:00 - 07:00	45.8	50.6	52.5	54.2	50.8	53.4	50.8
07:00 - 08:00	51.6	54.9	50.3	51.6	46.8	57.9	49.8
08:00 - 09:00	52.0	52.9	51.2	54.9	48.2	50.9	50.6
09:00 - 10:00	52.5	52.7	52.2	50.9	48.9	49.7	51.8
10:00 - 11:00	51.3	51.5	51.3	50.2	51.3	45.4	51.6
11:00 - 12:00	50.8	50.7	50.4	55.8	52.4	48.0	56.5
12:00 - 13:00	47.0	51.8	52.7	48.1	48.5	49.0	50.9
13:00 - 14:00	47.8	48.3	51.5	58.2	50.7	52.9	49.6
Leq(24) *	54.0	57.8	58.7	57.8	58.8	57.4	58.6
Ldn	60.5	65.5	67.3	66.0	63.0	64.7	67.3
Lmax **	78.0	83.3	90.0	94.3	81.1	87.1	80.8
Standard-24Hr	70 dB(A)						
Standard-Max	115 dB(A)						

Remark : * Average time between 14:00-14:00

** Maximum Sound Pressure Level between 14:00-14:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

**Noise Monitoring Result : Background Noise**
MTR-BSTE (Site 1)

Location : Wat Takuan Kongkaram Monitor Period : 21-28 Apr 2025
SLM Model : Cirrus CR162B Serial No : G302330
Site Operator : Mr. Siwanon Kulawong

Calibrator Model : Cirrus CR:515 Serial No : 97097
Calibration Ref dB(A) : 94.0 Certified Date : 02 Oct 2024
SLM Reading / Adjust dB(A) : 93.7/0.0 Expire Date : 01 Oct 2025
Cal Sheet No.: CR-515-2025-110

Time	L90 (dB(A))						
	21-22 Apr 2025	22-23 Apr 2025	23-24 Apr 2025	24-25 Apr 2025	25-26 Apr 2025	26-27 Apr 2025	27-28 Apr 2025
14:00 - 15:00	43.7	41.4	41.7	44.0	43.2	43.2	40.1
15:00 - 16:00	42.6	45.0	41.6	41.9	51.2	42.6	40.2
16:00 - 17:00	40.8	41.7	41.5	41.7	43.1	40.8	39.6
17:00 - 18:00	41.2	40.2	41.2	39.7	39.6	39.7	38.9
18:00 - 19:00	41.2	39.8	40.5	41.0	40.9	40.6	38.2
19:00 - 20:00	39.8	40.1	40.4	38.9	39.7	40.7	38.8
20:00 - 21:00	41.5	41.9	41.7	40.3	40.3	41.3	40.7
21:00 - 22:00	40.9	41.4	41.8	40.9	41.4	40.9	41.3
22:00 - 23:00	41.1	41.5	43.0	42.1	41.4	41.6	41.3
23:00 - 00:00	42.0	40.8	43.8	43.6	42.3	41.3	41.1
00:00 - 01:00	42.4	40.5	44.4	43.6	43.2	40.9	40.1
01:00 - 02:00	41.1	40.1	44.6	42.6	43.2	40.8	40.0
02:00 - 03:00	40.2	39.0	43.9	42.7	42.3	41.4	39.7
03:00 - 04:00	38.3	38.8	41.9	40.5	40.4	40.9	40.0
04:00 - 05:00	37.2	38.5	40.3	39.5	39.2	39.0	38.6
05:00 - 06:00	37.0	37.9	39.1	38.3	39.4	38.2	44.1
06:00 - 07:00	38.4	40.8	40.9	41.7	40.8	40.5	43.6
07:00 - 08:00	40.6	41.4	42.0	40.3	41.0	42.1	42.6
08:00 - 09:00	41.5	43.5	41.3	41.2	42.0	41.4	43.9
09:00 - 10:00	42.6	42.7	41.9	42.1	41.6	40.5	43.3
10:00 - 11:00	42.8	44.0	42.4	42.6	42.9	39.6	46.9
11:00 - 12:00	41.5	42.2	43.2	41.6	43.8	40.7	42.8
12:00 - 13:00	40.1	42.5	45.9	42.6	40.2	38.9	41.8
13:00 - 14:00	40.8	41.8	44.8	50.2	40.4	43.8	43.2
L90(avg)*	41.1	41.5	42.6	42.7	42.9	41.1	41.8

Remark : * Average time between 14:00-14:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

Preeda S.
(Miss Preeda Somjai)
Technical Management Team

ใบรับรองผลการตรวจวัดคุณภาพดิน



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

239 ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร 10800
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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:22-14:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224056_SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW1	STANDARD ^u
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE : US EPA SW 846 TEST METHOD FOR EVALUATING WATER AND SOLID WASTE, 7th ED., 2023.

Jutarat Jaernruen

(Miss Jutarat Jaernruen)

Analyst

REG. NO. 7-239-9-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

- Remark : 1. Reported analysis refers to submitted sample only.
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3. ^u Notification of the Ministry of Industry, B.E.2559 (2016).



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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 11:13-11:24
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224056_SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW2	STANDARD ^u
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE : US EPA SW 846 TEST METHOD FOR EVALUATING WATER AND SOLID WASTE, 7th ED., 2023.

Jutarat Jaernruen

(Miss Jutarat Jaernruen)

Analyst

REG. NO. 7-239-9-0022

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 11/04/2024 SAMPLING TIME : 10:37-10:47
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL, April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2016.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-0-0022

MR

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 7-239-0-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 17:02-17:11
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pinwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL, April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW4	STANDARD ¹⁾
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd ED., 2016.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-0-0022

MR

(Mrs. Araya Tipparak)

Technical Management Team

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 14:54-15:01
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Punwanua
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW5	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 1st ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-n-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 16:29-16:37
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Punwanua
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW6	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	*
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1,700

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 1st ED., 2020.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-n-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 15:57-16:05
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW7	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1.700

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd Ed., 2001.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-9-0004

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SOIL SAMPLES ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0731/67
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 10/04/2024 SAMPLING TIME : 15:24-15:34
RECEIVED DATE : 12/04/2024 ANALYTICAL DATE : 19-20/04/2024
REPORT DATE : 24/04/2024 SITE OPERATOR : Mr. Aniwat Pimwanna
SAMPLE CONDITION : Normal FILE CODE : 224056 SOIL April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW8	STANDARD ^{1/}
1,3-Butadiene	mg/kg	SW 846 5035A /8260D	< 0.001	ND	
Styrene	mg/kg	SW 846 5035A /8260D	< 0.00025	ND	≤ 1.700

REFERENCE : US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 3rd Ed., 2001.

Jutarat Jaemruen

(Miss Jutarat Jaemruen)

Analyst

REG. NO. 7-239-9-0022

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 08:51-08:59
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 25-26/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Nathachai Chaiyakhut
SAMPLE CONDITION : Normal FILE CODE : 225056 GW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹
				MW1	
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Styrene	mg/l	6200 B	< 0.0002	ND	24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2015 (AWWA-WEF)

REFERENCE: US EPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED., 2000

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(Miss Jutarat Jaemruen)

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 20/03/2025 SAMPLING TIME : 13:47-13:55
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Nathachai Chaiyakhut
SAMPLE CONDITION : Normal FILE CODE : 225056 GW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹
				MW2	
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Styrene	mg/l	6200 B	< 0.0002	ND	24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2015 (AWWA-WEF)

REFERENCE: US EPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 3rd ED., 2000

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Technical Management Team

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 20/03/2025 SAMPLING TIME : 14:23-14:31
RECEIVED DATE : 22-03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhot
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW3	STANDARD ¹⁾
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED., 2012 (ASWA, AHA, WED)

REFERENCE : USEPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 5TH ED., 2002

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 11:17-11:28
RECEIVED DATE : 22-03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhot
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW4	STANDARD ¹⁾
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	-
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21ST ED., 2012 (ASWA, AHA, WED)

REFERENCE : USEPA SW-846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE, 5TH ED., 2002

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 09:23-09:31
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhol
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW5	STANDARD ¹⁾
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	24

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED., 2017 (AWWA-APHA-WEF)

REFERENCE : US EPA SW 846 TEST METHODS FOR EXAMINATING WATER AND SOLID WASTE 1st ED., 2020

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 10:46-10:55
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhol
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW6	STANDARD ¹⁾
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	24

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED., 2017 (AWWA-APHA-WEF)

REFERENCE : US EPA SW 846 TEST METHODS FOR EXAMINATING WATER AND SOLID WASTE 1st ED., 2020

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 10:19-10:27
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhot
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW#	STANDARD ^{1/}
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA APHA WEF)

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 1st ED. 2005

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Araya Tipparak

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GROUND WATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No : 0535/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Pneumatic Bladder Pump
SAMPLING DATE : 21/03/2025 SAMPLING TIME : 09:51-10:00
RECEIVED DATE : 22/03/2025 ANALYTICAL DATE : 22-31/03/2025
REPORT DATE : 31/03/2025 SITE OPERATOR : Mr.Natthachai Chaiyakhot
SAMPLE CONDITION : Normal FILE CODE : 225056 GW March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION MW#	STANDARD ^{1/}
1,3-Butadiene*	mg/l	SW 846 5030C/8260D	< 0.0005	ND	*
Styrene	mg/l	6200 B	< 0.0002	ND	≤ 24

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA APHA WEF)

REFERENCE: US EPA SW 846 TEST METHODS FOR EVALUATING WATER AND SOLID WASTE 1st ED. 2005

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0695/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 10:48
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 29/04/2025 SITE OPERATOR : Miss Salisa Aintee
SAMPLE CONDITION : Normal FILE CODE : 225056_CW_April
SAMPLE DESCRIPTION : 1 - จุดระบายน้ำทิ้งจากนิคมฯ บริเวณปากคลองบางนา

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 1	STANDARD
Depth	m	Metering	-	2.4	*
Transparency	m	Secchi Disc	*	1.3	$\Delta \leq 10\%$
Temperature	°C	2550 B	< 0.5	33.2	$\Delta \leq 2^{\circ}$
pH	-	4500-H B	< 0.10	8.19	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 25	36.160	*
Total Suspended Solids	mg/l	2540 D	< 2.5	7.4	$\leq 21.9^6$
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	*
Fat Oil & Grease	-	Observation	*	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	6.7	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	1.7	*
COD	mg/l	5220 C	< 15.00	50.68	*
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22ND ED. 2012 (AWWA APHA WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846 4TH EDITION, 2003

(Miss Khemchuda Insorn)

Analyst

(Mrs. Araya Tipparuk)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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3. ¹⁾ Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. ²⁾ $\Delta \leq 10\%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2024 is 1.0 m. (On May 28, 2024)

Therefore, the standard of transparency value is 0.9 m.

5. ³⁾ $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong On April 22, 2025 is 32.3 °C.

6. ⁴⁾ The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 21.9 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0695/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 11:21
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 29/04/2025 SITE OPERATOR : Miss Salisa Aintee
SAMPLE CONDITION : Normal FILE CODE : 225056_CW_April
SAMPLE DESCRIPTION : 2 - จุดระบายน้ำเสียจากนิคมฯ บริเวณท่าเรืออุตสาหกรรมบางนาท่าเรือ (Mapiahot Industrial Terminal : MIT)

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 2	STANDARD
Depth	m	Metering	-	14.1	*
Transparency	m	Secchi Disc	*	4.2	$\Delta \leq 10\%$
Temperature	°C	2550 B	< 0.5	32.9	$\Delta \leq 2^{\circ}$
pH	-	4500-H B	< 0.10	8.14	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 25	35.620	*
Total Suspended Solids	mg/l	2540 D	< 2.5	6.8	$\leq 20.3^6$
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	*
Fat Oil & Grease	-	Observation	*	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	6.8	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	*
COD	mg/l	5220 C	< 15.00	57.92	*
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22ND ED. 2012 (AWWA APHA WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846 4TH EDITION, 2003

(Miss Khemchuda Insorn)

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3. ¹⁾ Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. ²⁾ $\Delta \leq 10\%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2024 is 4.5 m. (On May 28, 2024)

Therefore, the standard of transparency value is 4.05 m.

5. ³⁾ $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong On April 22, 2025 is 32.3 °C.

6. ⁴⁾ The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 20.3 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.



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SECOT CO., LTD.

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0695/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 22/04/2025	SAMPLING TIME	: 11:09
RECEIVED DATE	: 23/04/2025	ANALYTICAL DATE	: 23-29/04/2025
REPORT DATE	: 29/04/2025	SITE OPERATOR	: Miss Salisa Aintree
SAMPLE CONDITION	: Normal	FILE CODE	: 225056_CW_April
SAMPLE DESCRIPTION	: 3 ร่องน้ำของท่าเรือมาตุพล		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 3	STANDARD
Depth	m	Measuring	-	14.0	-
Transparency	m	Secchi Disc	-	3.8	$\Delta \leq 10 \%$ ²
Temperature	°C	2550 B	< 0.5	32.8	$\Delta \leq 2$ ⁵
pH	-	4500-H ¹ B	< 0.10	8.13	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 25	36,000	-
Total Suspended Solids	mg/l	2540 D	< 25	6.0	≤ 16.4 ⁶
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	-
Fat Oil & Grease	-	Observation	-	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	6.2	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	-
COD	mg/l	5220 C	< 15.00	43.44	-
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED., 2017 (AWWA/APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 2nd EDITION, 2020



(Miss Kheemchuda Insom)

Analyst



(Mrs. Araya Tipparak)

Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

2. This report shall not be reproduced, except in full, without official approval.

3. ¹ Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. ² $\Delta \leq 10 \%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2024 is 4.0 m. (On May 28, 2024)

Therefore, the standard of transparency value is 3.6 m.

5. ⁵ $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong On April 22, 2025 is 32.3 °C.

6. ⁶ The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 16.4 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0695/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 22/04/2025	SAMPLING TIME	: 10:56
RECEIVED DATE	: 23/04/2025	ANALYTICAL DATE	: 23-29/04/2025
REPORT DATE	: 29/04/2025	SITE OPERATOR	: Miss Salisa Aintree
SAMPLE CONDITION	: Normal	FILE CODE	: 225056_CW_April
SAMPLE DESCRIPTION	: 4 เกาะตะเคียน		

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION 4	STANDARD
Depth	m	Measuring	-	2.0	-
Transparency	m	Secchi Disc	-	1.4	$\Delta \leq 10 \%$ ²
Temperature	°C	2550 B	< 0.5	32.9	$\Delta \leq 2$ ⁵
pH	-	4500-H ¹ B	< 0.10	8.16	7.0-8.5
Total Dissolved Solids	mg/l	2540 C	< 25	38,500	-
Total Suspended Solids	mg/l	2540 D	< 25	8.0	≤ 16.3 ⁶
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	-
Fat Oil & Grease	-	Observation	-	NV	Invisible
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.6	≥ 4.0
BOD ₅	mg/l	5210 B	< 1.0	< 1.0	-
COD	mg/l	5220 C	< 15.00	54.30	-
Styrene	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED., 2017 (AWWA/APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 2nd EDITION, 2020



(Miss Kheemchuda Insom)

Analyst



(Mrs. Araya Tipparak)

Technical Management Team

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3. ¹ Notification of the National Environment Board B.E.2564 (2021) Class 5.

4. ² $\Delta \leq 10 \%$ means decrease from the natural condition by not more than 10 % which were compared with the minimum value.

The minimum value of transparency in the year 2024 is 1.5 m. (On May 28, 2024)

Therefore, the standard of transparency value is 1.35 m.

5. ⁵ $\Delta \leq 2$ means change from natural condition not more than 2 °C. Temperature at Rayong On April 22, 2025 is 32.3 °C.

6. ⁶ The results should not be changed by more than the sum of daily average and the standard deviation.

Daily average was calculated from hourly measurement or at least 5 samples taken at equal time interval within one day.

(Standard by S.P.S. Consulting Service on May 2, 2023 is 16.3 mg/l)

7. - Not available.

8. The natural condition was normal during sampling period.

ใบรับรองผลการตรวจวัดคุณภาพน้ำทิ้ง



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08-15/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chanapon Oakkharapion
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^{1/}
Flow Rate*	m ³ /hr	-	-	7.6	-
Temperature	°C	2550 B	< 0.5	32.5	≤ 40
pH	-	4500-H B	< 0.10	6.65	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,338	≤ 36,660
Total Suspended Solids	mg/l	2540 D	< 2.5	9.3	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.3	-
BOD ₅	mg/l	5210 B	< 1.0	1.2	≤ 20
COD	mg/l	5220 C	< 15.00	56.12	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED., 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2000

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 3-239-n-0004

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2. This report shall not be reproduced, except in full, without official approval.

3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 07, 2025 found to be 31,660 mg/l therefore the Standard of TDS found to be 36,660 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chanapon Oakkharapion
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMI	2120 F	< 5.0	43.2	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	43.6	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:35
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08-15/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-defectable)	STATION		STANDARD ^{1/}
				Intermediate	Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	33.0		≤ 40
pH	-	4500-H ^{1/} B	< 0.10	7.42		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,464		≤ 36,660
Total Suspended Solids	mg/l	2540 D	< 2.5	8.7		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	3.8		→
BOD ₅	mg/l	5210 B	< 1.0	1.7		< 20
COD	mg/l	5220 C	< 15.00	59.07		< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND		→

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 19th ED. 2017 (AWWA APHA, WED)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 4th EDITION, 2020.

Khemchuda Insorn

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REG. NO. 2-239-R-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-R-0004

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 07, 2025 found to be 31,660 mg/l therefore the Standard of TDS found to be 36,660 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0170/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 04/02/2025 SAMPLING TIME : 14:05
RECEIVED DATE : 05/02/2025 ANALYTICAL DATE : 05-11/02/2025
REPORT DATE : 13/02/2025 SITE OPERATOR : Mr. Hawom Deechaiya
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-defectable)	STATION		STANDARD ^{1/}
				Sump pit		
Flow Rate*	m ³ /hr	→	→	54.0		→
Temperature	°C	2550 B	< 0.5	33.1		≤ 40
pH	-	4500-H ^{1/} B	< 0.10	7.60		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,558		≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	9.0		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.2		→
BOD ₅	mg/l	5210 B	< 1.0	2.2		≤ 20
COD	mg/l	5220 C	< 15.00	54.23		≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0003		→

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 19th ED. 2017 (AWWA APHA, WED)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 4th EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-R-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-R-0004

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025 found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0170/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/02/2025	SAMPLING TIME	: 13:30
RECEIVED DATE	: 05/02/2025	ANALYTICAL DATE	: 05/02/2025
REPORT DATE	: 13/02/2025	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 225056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent Sump pit	
Color (Original pH)	ADMI	2120 F	< 5.0	31.6	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	34.0	≤ 300

Khanchuda Insorn

(Miss Khanchuda Insorn)

Analyst

REG. NO. 2-239-N-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-N-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME	: BST Elastomers Co., Ltd. (BSTE)	REQUEST SERVICE No.	: 0170/68
SAMPLING BY	: SECOT Co., Ltd.	SAMPLING METHOD	: Grab
SAMPLING DATE	: 04/02/2025	SAMPLING TIME	: 13:56
RECEIVED DATE	: 05/02/2025	ANALYTICAL DATE	: 05-11/02/2025
REPORT DATE	: 13/02/2025	SITE OPERATOR	: Mr. Baworn Deechaiya
SAMPLE CONDITION	: Normal	FILE CODE	: 225056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Intermediate Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	33.4	≤ 40
pH		4500-H B	< 0.10	7.70	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,612	≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	8.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.0	
BOD ₅	mg/l	5210 B	< 1.0	2.0	< 20
COD	mg/l	5220 C	< 15.00	51.65	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0012	

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED., 2017 (APWA, WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2018

Khanchuda Insorn

(Miss Khanchuda Insorn)

Analyst

REG. NO. 2-239-N-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-N-0004

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 3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025 found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).
 4. * Not registered with the Department of Industrial Works.
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 14:10
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12-18/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chunapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^{1/}
Flow Rate*	m ³ /hr	-	-	65.0	-
Temperature	°C	2550 B	< 0.5	35.0	≤ 40
pH	-	4500-H B	< 0.10	7.12	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,898	≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 25	23	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.1	-
BOD ₅	mg/l	5210 B	< 1.0	2.9	≤ 20
COD	mg/l	5220 C	< 15.00	68.30	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21ST ED., 2012 (AWWA, APHA, WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 8TH EDITION, 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017), exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025 found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).
 4. * Not registered with the Department of Industrial Works.
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chunapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMI	2120 F	< 5.0	46.4	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	46.8	≤ 300

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark :**
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 3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).



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TEL. (662) 959-3600 FAX (662) 959-3535 Website: secot.co.th E-mail: envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 14:25
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12-18/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chanupon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹⁾
				Intermediate Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	33.9	≤ 40
pH		4500-H ¹⁾ B	< 0.10	7.10	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,470	≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	13	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	3.9	
BOD ₅	mg/l	5210 B	< 1.0	5.7	< 20
COD	mg/l	5220 C	< 15.00	57.16	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0003	

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 23rd ED. 2017 (A) WWA, APHA, WEF

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-P-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 7-239-P-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017),

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025

found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 14:20
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Aintee
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ¹⁾
				Sump pit	
Flow Rate*	m ³ /hr			86.7	
Temperature	°C	2550 B	< 0.5	32.8	≤ 40
pH		4500-H ¹⁾ B	< 0.10	7.51	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,428	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	5.2	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	5.3	
BOD ₅	mg/l	5210 B	< 1.0	1.6	≤ 20
COD	mg/l	5220 C	< 15.00	68.78	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 23rd ED. 2017 (A) WWA, APHA, WEF

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-P-0005

Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 7-239-P-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017),

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Aintree
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMI	2120 F	< 5.0	35.3	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	35.0	≤ 300

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-ก-0005

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 3-239-ก-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 14:15
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Aintree
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ^{1/}
Temperature	°C	2550 B	< 0.5	33.0	≤ 40
pH	-	4500-H ² B	< 0.10	7.58	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,496	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.2	-
BOD ₅	mg/l	5210 B	< 1.0	5.6	< 20
COD	mg/l	5220 C	< 15.00	54.30	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2012. GA/WWA/APH/1A. WEF

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020.

(Miss Khemchuda Insorn)

Analyst

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).
4. * Not registered with the Department of Industrial Works.
5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 14:08
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14-21/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Khotamhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ¹⁾
Flow Rate*	m ³ /hr	-	-	79.0	-
Temperature	°C	2550 B	< 0.5	33.9	≤ 40
pH	-	4500-H B	< 0.10	7.18	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,404	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12	≤ 50
Free Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	6.2	-
BOD ₅	mg/l	5210 B	< 1.0	1.2	≤ 20
COD	mg/l	5220 C	< 15.00	51.90	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st EDITION (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846 2nd EDITION, 2020

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-n-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

- Remark :
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 2. This report shall not be reproduced, except in full, without official approval.
 3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017), exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).
 4. * Not registered with the Department of Industrial Works.
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Khotamhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ¹⁾
Color (Original pH)	ADMI	2120 F	< 5.0	34.1	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	36.1	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-n-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-n-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Gmb
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 14:01
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14-21/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Klotthanhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Intermediate	Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	33.0		≤ 40
pH		4500-H B	< 0.10	7.03		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,160		≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.9		*
BOD ₅	mg/l	5210 B	< 1.0	1.3		≤ 20
COD	mg/l	5220 C	< 15.00	55.05		≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND		*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2010

(Miss Khemchuda Insorn)

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(Mrs. Araya Tipparuk)

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 14:45
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11-16/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr. Thanawut Duonsueng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Sump pit		
Flow Rate*	m ³ /hr	*	*	83.0		*
Temperature	°C	2550 B	< 0.5	31.5		< 40
pH		4500-H B	< 0.10	7.96		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	1,144		≤ 32,200
Total Suspended Solids	mg/l	2540 D	< 2.5	15		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.6		*
BOD ₅	mg/l	5210 B	< 1.0	1.3		≤ 20
COD	mg/l	5220 C	< 15.00	46.1		≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND		*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2010

(Miss Khemchuda Insorn)

Analyst

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on June 10, 2025 found to be 27,200 mg/l therefore the Standard of TDS found to be 32,200 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr.Thanawut Duansaeng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent Sump pit	
Color (Original pH)	ADMI	2120 F	< 5.0	34.6	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	30.9	≤ 300

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

(Mrs. Araya Tipparuk)

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 14:30
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11-16/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr.Thanawut Duansaeng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Intermediate Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	32.0	≤ 40
pH	-	4500-11 ^{1/2} B	< 0.10	7.88	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	1.260	≤ 32,200
Total Suspended Solids	mg/l	2540 D	< 2.5	42	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	5.1	*
BOD ₅	mg/l	5210 B	< 1.0	1.4	< 20
COD	mg/l	5220 C	< 15.00	61.7	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA, APHA, WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 2nd EDITION 2020.

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

(Mrs. Araya Tipparuk)

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on June 10, 2025 found to be 27,200 mg/l therefore the Standard of TDS found to be 32,200 mg/l).
4. * Not registered with the Department of Industrial Works.
5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08-15/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ^{1/}
Flow Rate*	m ³ /hr			7.6	*
Temperature	°C	2550 B	< 0.5	32.5	≤ 40
pH		4500-H B	< 0.10	6.65	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3.338	≤ 36,660
Total Suspended Solids	mg/l	2540 D	< 2.5	9.3	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	4.3	*
BOD ₅	mg/l	5210 B	< 1.0	1.2	≤ 20
COD	mg/l	5220 C	< 15.00	56.12	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 18th ED., 2017 (APHA, AWWA, WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Araya Tippanik

(Mrs. Araya Tippanik)

Technical Management Team

REG. NO. 3-239-n-0004

- Remark : 1. Reported analysis refers to submitted sample only.
2. This report shall not be reproduced, except in full, without official approval.
3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017),
exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 07, 2025
found to be 31,660 mg/l therefore the Standard of TDS found to be 36,660 mg/l).
4. * Not registered with the Department of Industrial Works.
5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMI	2120 F	< 5.0	43.2	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	43.6	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Araya Tippanik

(Mrs. Araya Tippanik)

Technical Management Team

REG. NO. 3-239-n-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0019/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 07/01/2025 SAMPLING TIME : 13:35
RECEIVED DATE : 08/01/2025 ANALYTICAL DATE : 08-15/01/2025
REPORT DATE : 16/01/2025 SITE OPERATOR : Mr.Chunapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_January

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ¹⁾
				Intermediate	Tank II before	
				Final Check Basin		
Temperature	°C	2550 B	< 0.5	33.0		≤ 40
pH		4500-H ^a B	< 0.10	7.42		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3.464		≤ 36,660
Total Suspended Solids	mg/l	2540 D	< 2.5	8.7		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	3.8		*
BOD ₅	mg/l	5210 B	< 1.0	1.7		< 20
COD	mg/l	5220 C	< 15.00	59.07		< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND		*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED, 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020.

Khemchuda Insom

(Miss Khemchuda Insom)

Analyst

REG. NO. 2-239-R-0005

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-R-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on January 07, 2025

found to be 31,660 mg/l therefore the Standard of TDS found to be 36,660 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0170/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 04/02/2025 SAMPLING TIME : 14:05
RECEIVED DATE : 05/02/2025 ANALYTICAL DATE : 05-11/02/2025
REPORT DATE : 13/02/2025 SITE OPERATOR : Mr. Hawom Deechaiyu
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_February

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	
				Sump pit	STANDARD ¹⁾
Flow Rate*	m ³ /hr			54.0	*
Temperature	°C	2550 B	< 0.5	35.1	≤ 40
pH		4500-H B	< 0.10	7.60	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3.558	< 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	9.0	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen	mg/l	4500-O G	< 0.1	5.2	*
BOD ₅	mg/l	5210 B	< 1.0	2.2	≤ 20
COD	mg/l	5220 C	< 15.00	54.23	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0003	*

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED, 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020.

(Miss Khemchuda Insom)

(Miss Khemchuda Insom)

Analyst

REG. NO. 2-239-R-0005

(Mrs. Araya Tipparak)

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-R-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025

found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0170/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 04/02/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 05/02/2025 ANALYTICAL DATE : 05/02/2025
REPORT DATE : 13/02/2025 SITE OPERATOR : Mr. Baworn Deechaiya
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_February

PARAMETER	UNIT	ANALYSIS	ND	STATION		STANDARD ^{1/}
		METHODS	(non-detectable)	Effluent	Sump pit	
Color (Original pH)	ADMI	2120 F	< 5.0	31.6		≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	34.0		≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

- Remark :**
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 3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0170/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 04/02/2025 SAMPLING TIME : 13:56
RECEIVED DATE : 05/02/2025 ANALYTICAL DATE : 05-11/02/2025
REPORT DATE : 13/02/2025 SITE OPERATOR : Mr. Baworn Deechaiya
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_February

PARAMETER	UNIT	ANALYSIS	ND	STATION		STANDARD ^{1/}
		METHODS	(non-detectable)	Intermediate	Tank # before	
				Final Check Basin		
Temperature	°C	2550 B	< 0.5	33.4		≤ 40
pH		4500-H ⁺ B	< 0.10	7.70		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3.612		≤ 37.520
Total Suspended Solids	mg/l	2540 D	< 2.5	8.0		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen	mg/l	4500-O ₂ G	< 0.1	4.0		*
BOD ₅	mg/l	5210 B	< 1.0	2.0		< 20
COD	mg/l	5220 C	< 15.00	51.65		< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0012		-

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 22nd ED. 2017 (AWWA/APHA/WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 4th EDITION, 2019.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 7-239-ก-0004

- Remark :**
1. Reported analysis refers to submitted sample only.
 2. This report shall not be reproduced, except in full, without official approval.
 3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017), exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025 found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).
 4. * Not registered with the Department of Industrial Works.
 5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 14:10
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12-18/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ¹⁾
Flow Rate*	m ³ /hr	-	-	65.0	-
Temperature	°C	2550 B	< 0.5	35.0	≤ 40
pH	-	4500-H ² B	< 0.10	7.12	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,898	≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	23	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.3	-
BOD ₅	mg/l	5210 B	< 1.0	2.9	≤ 20
COD	mg/l	5220 C	< 15.00	68.30	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 22nd ED., 2017 (AWWA, APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 1st EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-P-0005

Mrs. Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-P-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025 found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chanapon Oakkharaplon
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ¹⁾
Color (Original pH)	ADMI	2120 F	< 5.0	46.4	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	46.8	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-P-0005

Mrs. Araya Tipparak

(Mrs. Araya Tipparak)

Technical Management Team

REG. NO. 2-239-P-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0455/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 11/03/2025 SAMPLING TIME : 14:25
RECEIVED DATE : 12/03/2025 ANALYTICAL DATE : 12-18/03/2025
REPORT DATE : 19/03/2025 SITE OPERATOR : Mr.Chanapon Oakkharaporn
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_March

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Intermediate	Tank II before	
				Final Check Basin		
Temperature	°C	2550 B	< 0.5	33.9		≤ 40
pH	-	4500-H ^{1/} B	< 0.10	7.10		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,470		≤ 37,520
Total Suspended Solids	mg/l	2540 D	< 2.5	13		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	3.9		*
BOD ₅	mg/l	5210 B	< 1.0	5.7		< 20
COD	mg/l	5220 C	< 15.00	57.16		< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	0.0003		*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21ST ED. 2017 (APHA, WFA)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3RD EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-R-0005

Araya Tippapak

(Mrs. Araya Tippapak)

Technical Management Team

REG. NO. 7-239-R-0004

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017),

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on February 04, 2025

found to be 32,520 mg/l therefore the Standard of TDS found to be 37,520 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



บริษัท ซีคอต จำกัด
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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 14:20
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Ainree
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Intermediate	Sump pit	
Flow Rate*	m ³ /hr	*	*		86.7	*
Temperature	°C	2550 D	< 0.5		32.8	≤ 40
pH	-	4500-H ^{1/} B	< 0.10		7.51	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25		3,428	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5		5.2	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0		ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1		5.2	*
BOD ₅	mg/l	5210 B	< 1.0		1.6	≤ 20
COD	mg/l	5220 C	< 15.00		68.78	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002		ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21ST ED. 2017 (APHA, WFA)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3RD EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 7-239-R-0005

Araya Tippapak

(Mrs. Araya Tippapak)

Technical Management Team

REG. NO. 7-239-R-0004

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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017),

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



บริษัท ซีคอต จำกัด
SECOT CO., LTD.

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : envserv@secot.co.th

WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Ainree
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ^{1/}
Color (Original pH)	ADMI	2120 F	< 5.0	35.3	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	35.0	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

- Remark : 1. Reported analysis refers to submitted sample only.
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3. ^{1/} Notification of the Ministry of Industry, B.E.2560 (2017).



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0693/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 22/04/2025 SAMPLING TIME : 14:15
RECEIVED DATE : 23/04/2025 ANALYTICAL DATE : 23-29/04/2025
REPORT DATE : 30/04/2025 SITE OPERATOR : Miss Salisa Ainree
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_April

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Intermediate Tank II before Final Check Basin	STANDARD ^{1/}
Temperature	°C	2550 B	< 0.5	33.0	≤ 40
pH	-	4500-H B	< 0.10	7.58	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,496	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.2	-
BOD ₅	mg/l	5210 B	< 1.0	5.6	< 20
COD	mg/l	5220 C	< 15.00	54.30	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 23rd ED. 2017 (AWWA APHA, WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SW-846, 4th EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).
4. * Not registered with the Department of Industrial Works.
5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 14:08
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14-21/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Khothamhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Sump pit	STANDARD ¹⁾
Flow Rate*	m ³ /hr	-	-	79.0	-
Temperature	°C	2550 B	< 0.5	33.9	≤ 40
pH	-	4500-H B	< 0.10	7.18	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	3,404	≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	6.2	-
BOD ₅	mg/l	5210 B	< 1.0	1.2	≤ 20
COD	mg/l	5220 C	< 15.00	51.90	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	-

REFERENCE STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, 21st ED. 2017 (AWWA-APHA-WEF)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846 J²⁾, MDT009, 2020.

Khennchuda Insorn

(Miss Khennchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Mrs. Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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3. ¹⁾ Notification of the Ministry of Industry, B.E.2560 (2017).

exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Khothamhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION Effluent Sump pit	STANDARD ¹⁾
Color (Original pH)	ADMI	2120 F	< 5.0	34.1	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	36.1	≤ 300

Khennchuda Insorn

(Miss Khennchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

Mrs. Araya Tipparuk

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 0854/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 13/05/2025 SAMPLING TIME : 14:01
RECEIVED DATE : 14/05/2025 ANALYTICAL DATE : 14-21/05/2025
REPORT DATE : 21/05/2025 SITE OPERATOR : Mr. Jeerawat Khiothamhan
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_May

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Intermediate	Tank II before	
				Final Check Basin		
Temperature	°C	2550 B	< 0.5	33.0		≤ 40
pH		4500-II B	< 0.10	7.03		5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5	3,160		≤ 37,460
Total Suspended Solids	mg/l	2540 D	< 2.5	12		≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND		≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	4.9		
BOD ₅	mg/l	5210 B	< 1.0	1.3		< 20
COD	mg/l	5220 C	< 15.00	55.05		< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND		

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 24th ED. 2017 (AWWA, APHA, WFD)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on April 22, 2025 found to be 32,460 mg/l therefore the Standard of TDS found to be 37,460 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 14:45
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11-16/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr. Thanawut Duansueng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION		STANDARD ^{1/}
				Intermediate	Sump pit	
Flow Rate*	m ³ /hr				83.0	
Temperature	°C	2550 B	< 0.5		31.5	≤ 40
pH		4500-II B	< 0.10		7.96	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 2.5		1,144	≤ 32,200
Total Suspended Solids	mg/l	2540 D	< 2.5		15	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0		ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1		4.6	
BOD ₅	mg/l	5210 B	< 1.0		1.3	≤ 20
COD	mg/l	5220 C	< 15.00		46.1	≤ 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002		ND	

REFERENCE: STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 24th ED. 2017 (AWWA, APHA, WFD)

REFERENCE: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 3rd EDITION, 2020

(Miss Khemchuda Insorn)

Analyst

REG. NO. 2-239-ก-0005

(Mrs. Araya Tipparuk)

Technical Management Team

REG. NO. 2-239-ก-0004

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exceed TDS in the water resources by not more than 5,000 mg/l (Measurement Results of Coastal Water on June 10, 2025 found to be 27,200 mg/l therefore the Standard of TDS found to be 32,200 mg/l).

4. * Not registered with the Department of Industrial Works.

5. - Not available.



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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 13:30
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr.Thanawut Duansaeng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Effluent Sump pit	
Color (Original pH)	ADMI	2120 F	< 5.0	34.6	≤ 300
Color (pH 7.0)	ADMI	2120 F	< 5.0	30.9	≤ 300

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Mrs. Araya Tippanuk

(Mrs. Araya Tippanuk)

Technical Management Team

REG. NO. 3-239-n-0004

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WATER AND WASTEWATER ANALYSIS REPORT

CLIENT NAME : BST Elastomers Co., Ltd. (BSTE) REQUEST SERVICE No. : 1068/68
SAMPLING BY : SECOT Co., Ltd. SAMPLING METHOD : Grab
SAMPLING DATE : 10/06/2025 SAMPLING TIME : 14:30
RECEIVED DATE : 11/06/2025 ANALYTICAL DATE : 11-16/06/2025
REPORT DATE : 18/06/2025 SITE OPERATOR : Mr.Thanawut Duansaeng
SAMPLE CONDITION : Normal FILE CODE : 225056_WW_June

PARAMETER	UNIT	ANALYSIS METHODS	ND (non-detectable)	STATION	STANDARD ^{1/}
				Intermedate Tank II before Final Check Basin	
Temperature	°C	2550 B	< 0.5	32.0	≤ 40
pH	-	4500-11 [*] B	< 0.10	7.88	5.5 - 9.0
Total Dissolved Solids	mg/l	2540 C	< 25	1260	≤ 32,200
Total Suspended Solids	mg/l	2540 D	< 2.5	42	≤ 50
Fat Oil & Grease	mg/l	5520 B	< 2.0	ND	≤ 5
Dissolved Oxygen*	mg/l	4500-O G	< 0.1	5.1	*
BOD ₅	mg/l	5210 B	< 1.0	1.4	< 20
COD	mg/l	5220 C	< 15.00	61.7	< 120
Styrene*	mg/l	5030 C / 8260 D	< 0.0002	ND	*

REFERENCE : STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER 21st ED. 2017 (AWWA APHA WEF)

REFERENCE : UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846, 2nd EDITION, 2020.

Khemchuda Insorn

(Miss Khemchuda Insorn)

Analyst

REG. NO. 3-239-n-0005

Mrs. Araya Tippanuk

(Mrs. Araya Tippanuk)

Technical Management Team

REG. NO. 3-239-n-0004

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found to be 27,200 mg/l therefore the Standard of TDS found to be 32,200 mg/l).
4. * Not registered with the Department of Industrial Works.
5. - Not available.

ใบรับรองผลการตรวจวัดคุณภาพอากาศในสถานประกอบการ



บริษัท ซีคอต จำกัด
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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0490/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 11/03/2025
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 15/03/2025
Tel/Fax	: 0-3869-8698	Test Date	: 17/03/2025
		Report Date	: 20/03/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Wet tank	11/03/2025 08:30-16:30	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
	11/03/2025 08:30-16:30	Styrene	NIOSH 1501/GC FID	< 0.01	ND	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Mairin Poonwasanpet
(Miss Narisa Poonwasanpet)
Technical Management Team

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3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).

4. ND = non-detectable.



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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0490/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 11/03/2025
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 15/03/2025
Tel/Fax	: 0-3869-8698	Test Date	: 17/03/2025
		Report Date	: 20/03/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Z-6401	11/03/2025 08:20-16:30	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	0.05	1
	11/03/2025 08:20-16:30	Styrene	NIOSH 1501/GC FID	< 0.01	0.08	100

Analyst By : Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By : Mairin Poonwasanpet
(Miss Narisa Poonwasanpet)
Technical Management Team

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3. Notification of the Department of Labour Protection and Welfare, B.E.2560 (2017).

4. ND = non-detectable.



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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0519/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 18/03/2025
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 20/03/2025
		Test Date	: 24/03/2025
Tel/Fax	: 0-3869-8698	Report Date	: 25/03/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
R-102	18/03/2025 08:10-16:10	1,3-Butadiene	NIOSH 1024-GC FID	<0.02	ND	1
R-106	18/03/2025 08:10-16:10	Styrene	NIOSH 1501-GC FID	<0.01	ND	100

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By: Mairin Poonwasanpeich
(Miss Narisa Poonwasanpeich)
Technical Management Team

Remark : 1. Reported analysis refers to submitted sample only.

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TEL. (662) 959-3600 FAX (662) 959-3535 Website : secot.co.th E-mail : cnvserv@secot.co.th

ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0839/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 06/05/2025
Address	: No.5/1, I-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 09/05/2025
		Test Date	: 19/05/2025
Tel/Fax	: 0-3869-8698	Report Date	: 20/05/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Z-6401	06/05/2025 09:28-17:28	1,3-Butadiene	NIOSH 1024-GC FID	<0.02	0.04	1
	06/05/2025 09:28-17:28	Styrene	NIOSH 1501-GC FID	<0.01	0.13	100

Analyst By: Sudaporn S.
(Miss Sudaporn Soonthorn)

Approved By: Mairin Poonwasanpeich
(Miss Narisa Poonwasanpeich)
Technical Management Team

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- ND = non-detectable.



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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0839/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 06/05/2025
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 09/05/2025
Tel/Fax	: 0-3869-8698	Test Date	: 19/05/2025
		Report Date	: 20/05/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
Wet tank	06/05/2025 09:32-17:32	1,3-Butadiene	NIOSH 1024/GC FID	< 0.02	ND	1
	06/05/2025 09:32-17:32	Styrene	NIOSH 1501/GC FID	< 0.01	ND	100

Analyst By :

Sudaporn S.

(Miss Sudaporn Soonthorn)

Approved By :

Mairisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0864 68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 09/05/2025
Address	: No.5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 14/05/2025
Tel/Fax	: 0-3869-8698	Test Date	: 19/05/2025
		Report Date	: 20/05/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND ppm	RESULT ppm	STANDARD ppm
R-102	09/05/2025 08:20-16:30	1,3-Butadiene	NIOSH 1024-GC FID	< 0.02	ND	1

Analyst By :

Sudaporn S.

(Miss Sudaporn Soonthorn)

Approved By :

Mairisa Poowasanpetch

(Miss Narisa Poowasanpetch)

Technical Management Team

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ANALYSIS/TEST REPORT

Customer	: EED/SECOT Co., Ltd.	Request Service No.	: 0864/68
For	: BST Elastomers Co., Ltd. (BSTE)	Sampling Date	: 09/05/2025
Address	: No 5/1, 1-7 Road, Map Ta Phut Sub-district, Muang District, Rayong Province 21150	Received Date	: 14/05/2025
		Test Date	: 19/05/2025
Tel/Fax	: 0-3869-8698	Report Date	: 20/05/2025

SAMPLE DESCRIPTION / SAMPLING INFORMATION

Sample Designated As	: Workplace Air	Sampling Method	: Sorbent Adsorption
Sampling By	: SECOT Co., Ltd.	Sample Condition	: Normal

Sampling Location	Sampling Date/Time	Compound	Analytical Method	ND	RESULT	STANDARD
				ppm	ppm	ppm
R-106	09/05/2025 08:20-16:20	Styrene	NIOSH 1501-GC/FID	< 0.01	ND	100

Analyst By :

Sudaporn S.

(Miss Sudaporn Soonthorn)

Approved By :

Narisa Poowasanpeich

(Miss Narisa Poowasanpeich)

Technical Management Team

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Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Steam Line (S1 to C-6401AR)		Monitor Period : Apr 11, 2025	
SLM Model : SCARLET ST-21D		Serial No : 820726	
Site Operator : Miss Salisa Ainree			
Calibrator Model : Citrus CR:515		Serial No : 97097	
Calibration Ref dB(A) : 94.0		Certified Date : Oct 02 2024	
SLM Reading / Adjust dB(A) : 93.8/0.0		Expire Date : Oct 01 2025	
Cal Sheet No.: CR-515-2025-088			
Time	Equivalent Sound Pressure Level (dB(A))		
	Apr 11, 2025		
00:00 - 01:00			
01:00 - 02:00			
02:00 - 03:00			
03:00 - 04:00			
04:00 - 05:00			
05:00 - 06:00			
06:00 - 07:00			
07:00 - 08:00			
08:00 - 09:00		77.8	
09:00 - 10:00		81.8	
10:00 - 11:00		77.5	
11:00 - 12:00		77.4	
12:00 - 13:00		77.1	
13:00 - 14:00		80.0	
14:00 - 15:00		80.2	
15:00 - 16:00		77.1	
16:00 - 17:00			
17:00 - 18:00			
18:00 - 19:00			
19:00 - 20:00			
20:00 - 21:00			
21:00 - 22:00			
22:00 - 23:00			
23:00 - 24:00			
Leq(8)*		79.0	
Lmax **		97.9	
Standard-8Hr		90 dB(A)	
Standard-Max		140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Compressor		Monitor Period : Apr 11, 2025	
SLM Model : SCARLET ST-21D		Serial No : 820727	
Site Operator : Miss Salisa Ainree			
Calibrator Model : Cirrus CR:515		Serial No : 97097	
Calibration Ref dB(A) : 94.0		Certified Date : Oct 02 2024	
SLM Reading / Adjust dB(A) : 93.8/0.0		Expire Date : Oct 01 2025	
Cal Sheet No.: CR-515-2025-088			
Time	Equivalent Sound Pressure Level (dB(A))		
	Apr 11, 2025		
00:00 - 01:00			
01:00 - 02:00			
02:00 - 03:00			
03:00 - 04:00			
04:00 - 05:00			
05:00 - 06:00			
06:00 - 07:00			
07:00 - 08:00			
08:00 - 09:00		79.2	
09:00 - 10:00		80.6	
10:00 - 11:00		78.5	
11:00 - 12:00		79.4	
12:00 - 13:00		80.0	
13:00 - 14:00		80.3	
14:00 - 15:00		80.4	
15:00 - 16:00		80.2	
16:00 - 17:00			
17:00 - 18:00			
18:00 - 19:00			
19:00 - 20:00			
20:00 - 21:00			
21:00 - 22:00			
22:00 - 23:00			
23:00 - 24:00			
Leq(8)*		79.6	
Lmax **		92.8	
Standard-8Hr		90 dB(A)	
Standard-Max		140 dB(A)	

Remark : * Average time between 08:00-16:00

** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
Environmental Scientist

(Miss Sununta Sirawuttinanon)
Technical Management Team



Noise Monitoring Result : Working Noise MTR-BSTE Site 1

Location : Heat Exchanger (E-6409)	Monitor Period : Apr 11, 2025
SLM Model : SCARLET ST-21D	Serial No : 820723
Site Operator : Miss Salisa Ainree	

Calibrator Model : Cirrus CR:515	Serial No : 97097
Calibration Ref dB(A) : 94.0	Certified Date : Oct 02 2024
SLM Reading / Adjust dB(A) : 93.8/0.0	Expire Date : Oct 01 2025
Cal Sheet No.: CR-515-2025-088	

Time	Equivalent Sound Pressure Level (dB(A))
	Apr 11, 2025
00:00 - 01:00	
01:00 - 02:00	
02:00 - 03:00	
03:00 - 04:00	
04:00 - 05:00	
05:00 - 06:00	
06:00 - 07:00	
07:00 - 08:00	
08:00 - 09:00	77.5
09:00 - 10:00	79.0
10:00 - 11:00	77.8
11:00 - 12:00	77.8
12:00 - 13:00	77.8
13:00 - 14:00	78.2
14:00 - 15:00	78.2
15:00 - 16:00	78.0
16:00 - 17:00	
17:00 - 18:00	
18:00 - 19:00	
19:00 - 20:00	
20:00 - 21:00	
21:00 - 22:00	
22:00 - 23:00	
23:00 - 24:00	

Leq(8)*	78.1
Lmax **	88.6

Standard-8Hr	90 dB(A)
Standard-Max	140 dB(A)

Remark : * Average time between 08:00-16:00
 ** Maximum Sound Pressure Level between 08:00-16:00

(Miss Katesarin Vorradetwittaya)
 Environmental Scientist

(Miss Sumanta Sirawuttinanon)
 Technical Management Team

ใบรับรองผลการตรวจวัดระดับเสียงติดตัวบุคคล



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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0135
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift A : ID 40167	07.11-19.00	12.0	74.1	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0135
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift D : ID 41298	07.22-19.00	38.5	79.1	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0135
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 571077	07.27-19.00	47.0	80.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0135
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift A : ID 641363	07.12-19.00	87.6	82.7	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0135
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 02/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Salisa Ainree	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift A : ID 661513	07.16-19.00	47.0	80.0	83.0

(Miss Katesarin Vorraderwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift D : ID 651402	07.43-19.00	35.8	78.8	83.0

(Miss Katesarin Vorraderwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift D : ID 661461	07.22-19.00	20.3	76.3	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift A : ID 41292	07.48-19.00	39.9	79.3	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 05/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 43466	07.57-19.00	52.4	80.4	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 06/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift B : ID 37047	07.26-19.00	15.0	75.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 06/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift B : ID 42426	07.34-19.00	23.2	76.9	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 06/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift B : ID 671535	07.25-19.00	37.3	79.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 06/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 42423	07.45-19.00	94.8	83.0	83.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0136
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 07/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 Shift A : ID 48611	07.19-19.00	10.7	73.6	83.0


(Miss Katesarin Vorradetwittaya)

Environmental Scientist


(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 42427	07.23-19.00	26.0	77.4	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sumanta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 641368	07.21-19.00	75.1	82.0	83.0

(Miss Katesarin Vorradetwittaya)

Environmental Scientist

(Miss Sumanta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 651401	07.37-19.00	21.0	76.5	83.0


(Miss Katesarin Vorradetwittaya)

Environmental Scientist


(Miss Sunnita Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 08/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift C : ID 661459	07.15-19.00	42.5	79.5	83.0


(Miss Katesarin Vorradetwittaya)

Environmental Scientist


(Miss Sunnita Sirawuttinanon)

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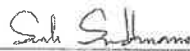
NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 09/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 Day : ID 42368	08.02-16.02	3.2	70.1	85.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0137
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 09/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 Day : ID 43484	07.45-15.45	11.0	75.4	85.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0293
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 13/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift D : ID 46549	07.39-19.00	72.4	81.8	83.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0138
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 14/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTB	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 Day : ID 631294	07.35-15.35	89.4	84.5	85.0


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Environmental Scientist


(Miss Sununta Sirawuttinanon)

Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0138
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 14/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF4 Day : ID 40168	07.34-15.34	28.0	79.5	85.0


(Miss Katesarin Vorradeitwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0138
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 14/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF4 Day : ID 651420	07.20-15.20	5.2	72.2	85.0


(Miss Katesarin Vorradeitwittaya)
Environmental Scientist


(Miss Sununta Sirawuttinanon)
Technical Management Team

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3. * Notification of the Department of Labour Protection and Welfare, B.E.2561 (2018).

4. TWA means Time Weighted Average.



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SECOT CO., LTD.

239 ถนนวิภาวดีรังสิต แขวงบางซื่อ เขตบางซื่อ กรุงเทพฯ 10800


239 RIMKLONGPRAPA ROAD, BANGSUE, BANGKOK 10800, THAILAND


TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0294
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 15/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (8 hr) (dBA)	TWA (8 hr) (dBA)
MF3 Day : ID 55933	08.02-16.02	19.6	78.0	85.0


(Miss Katesarin Vorradetwittaya)
Environmental Scientist


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Technical Management Team

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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0294
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 15/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift B : ID 46560	07.27-19.00	37.0	78.9	83.0


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NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0333
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 26/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift B : ID 41301	07.33-19.00	91.6	82.9	83.0

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME	: BST Elastomers Co., Ltd.	REFERENCE NO.	: 225056-Noise Dose-2505-0333
MEASUREMENT BY	: SECOT Co., Ltd.	INSTRUMENT	: Noise Dosimeter
MEASUREMENT DATE	: 27/05/2025	CALIBRATOR TYPE	: RC 110A
MEASUREMENT LOCATION	: BSTE	SERIAL NO.	: 95167
SITE OPERATOR	: Miss Wiraya Patchimboon	CALIBRATOR REF.	: 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF3 Shift C : ID 51697	07.19-19.00	74.0	81.9	83.0

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(Miss Sununta Sirawuttinanon)

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TEL : +66(0) 2959-3600 FAX : +66(0) 2959-3535 E-mail : envserv@secot.co.th

NOISE MEASUREMENT RESULT : NOISE DOSE

CLIENT NAME : BST Elastomers Co., Ltd. REFERENCE NO. : 225056-Noise Dose-2505-0333
MEASUREMENT BY : SECOT Co., Ltd. INSTRUMENT : Noise Dosimeter
MEASUREMENT DATE : 27/05/2025 CALIBRATOR TYPE : RC 110A
MEASUREMENT LOCATION : BSTE SERIAL NO. : 95167
SITE OPERATOR : Miss Wiraya Patchimboon CALIBRATOR REF. : 114 dB @1,000 Hz

OPERATOR ID	TIME	RESULTS		STANDARD*
		% DOSE	TWA (12 hr) (dBA)	TWA (12 hr) (dBA)
MF4 Shift D : ID 611192	07.33-19.00	1.3	64.6	83.0


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ภาคผนวก จ

ใบแสดงการตรวจเทียบเครื่องมือ

Agilent CrossLab Start Up Services

Agilent 7890 Gas Chromatograph

Preventive Maintenance Checklist

Agilent Preventive Maintenance provides factory recommended service for your analytical instruments to assure reliable operation and the accuracy of your results.

Delivered by highly trained and certified service engineers using genuine Agilent parts and supplies, Agilent Preventive Maintenance provides everything you need to reduce unplanned downtime and keep your systems operating at their peak. This checklist will be completed at the end of the service and provided to you as a record of the preventive maintenance activities.



Introduction

Customer Information

- Customers should provide all necessary operating supplies upon request of the engineer.
- A customer representative should be available to the engineer while performing the preventive maintenance procedures.
- Any parts, not included in the Parts Lists section of this document, are not part of the recommended Preventive Maintenance service, nor are they included in the price of this service.
- If a system requires the use of extra or special procedures and/or parts for the maintenance service, then these must be ordered separately and charged as a repair, which may incur additional costs.

Important Customer Web Links

- For more information about Agilent Technologies services, please visit our website using the following URL: <http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair>
- The Agilent Community is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>.
- To access Agilent University, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful Agilent Resource Center web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>.
- Need technical support, FAQs, supplies? – visit our Support Home page <http://www.agilent.com/search/support>.
- Videos about specific preparation requirements for your instrument can be found by searching the Agilent YouTube channel at <https://www.youtube.com/user/agilent>.
- 7890B Manuals are also available on Agilent.com:
 - Safety https://www.agilent.com/cs/library/usermanuals/public/7890B_Safety.pdf
 - Installation and First Startup https://www.agilent.com/cs/library/usermanuals/public/7890B_Installation.pdf
 - Operation Manual https://www.agilent.com/cs/library/usermanuals/public/7890B_Operation.pdf
 - Maintaining Your GC https://www.agilent.com/cs/library/usermanuals/public/G3430-90052%207890B_Maintaining%20Guide.pdf

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Page 2 of 10



Service Engineer's Responsibilities

- Contact the customer and ensure that all necessary supplies are available before the preventive maintenance visit.
- Only select those pages that relate to the system or module being serviced.
- Complete empty fields with the relevant information.
- Complete the relevant checkboxes in the checklist using either a "X" or tick mark "✓".
- Check "Section not applicable" check boxes to indicate services/tasks not delivered, as appropriate.
- Complete the Preventive Maintenance service in the order of the tasks listed.
- Complete the Service Review section together with the customer.
- Complete the fields for page numbers at the foot of each selected page.
- Complete the total number of pages field in the Service Completion section.
- Ask the customer to sign the Service Completion section including the customer's and your signature.

Additional Instruction Notes

- Check for any active service notes for this unit. If there are any applicable "Safety" or "Modification Recommended" Service notes, plan to implement the changes on this unit before doing any qualification service.
- Do not implement firmware updates, unless you get approval from the customer and are sure that they are compatible with the instrument control software.

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Page 3 of 10



System Information

- ☐ Check this box if an instrument configuration report is attached instead of completing the table below.

Instrument System Name and ID	7890A GC System / GCMS
Instrument System Site and Location	SECOT Co., Ltd.

List System Component Product Numbers	List the Serial Numbers of each Component
1. G3440A	CN10750035
2. N/A	N/A
3. N/A	N/A
4. N/A	N/A
5. N/A	N/A
6. N/A	N/A
7. N/A	N/A
8. N/A	N/A
9. N/A	N/A
10. N/A	N/A

Preparation

- ☒ Discuss any specific issues with the customer before starting.
- ☒ Review the instrument logbook for recorded problems and comments.
- ☒ Save instrument control settings before starting the procedure.
- ☒ Perform a general inspection of the system for cleanliness.
- ☒ Check for proper installation of parts, assemblies, sensors etc.
- ☒ Check system for required installation of components, settings as defined by current Service Notes.
- ☒ Check for required firmware updates and verify with customers if they would like them installed.
- ☐ Before starting the following procedures, record the Detector Signal Output(s) in the results table. If the GC is turned OFF or in a service mode, comparing the detector outputs before and after the service is not possible.

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Page 4 of 10



Preventive Maintenance Procedure

Clean and inspect GC

- ☒ Unplug power cord from the power source.
- ☒ Open GC covers and vacuum/remove any dust/debris. Pay particular attention to cooling fans.
- ☒ Inspect internal connectors for proper contact and placement.
- ☒ Reconnect Power to the GC. Power the GC on and verify the power on self-test passed.
- ☒ Verify oven motor spins freely and turns on with the oven door closed; off when the door is opened.
- ☒ Verify operation of all other fans - the Inlet and EPC cooling fans.
- ☒ Verify oven intake/outlet flap assembly is operating smoothly while heating and cooling the oven.

Inlet and detector consumable replacement

- ☒ For the Inlets installed, perform inlet maintenance as defined in the 7890 manual - "Maintaining Your GC" - for the Inlet(s) installed.
- ☒ Replace the split vent trap cartridge filter on units with these Inlets: Split/Splitless Capillary (SSL), Multi-Mode Inlet (MMI), Programmed Temperature Vaporizer (PTV), Volatiles Interface (VI).
- ☒ If the Inlet system is used in Split Mode with viscous samples, inspect and clean the split vent tube on the inlet and flush or replace the tubing between the Inlet and the split vent trap.
- ☐ If the GC includes a Flame Ionization Detector (FID), replace the Jet. If the Ignitor shows any buildup of sample or corrosion, replace the Ignitor. Examine the FID collector and castle assemblies for contamination - clean as necessary.

Zero Sensors and Leak test

- ☒ Zero all pressure sensors per the procedure in the 7890 "Advanced User Guide".
- ☒ Perform Inlet pressure decay test(s) as defined in the 7890 "Troubleshooting Manual". If the PM is done in preparation for an Operational Qualification, then the pressure decay test defined within that protocol can be used for the PM.
- ☒ Record If test passed or failed in the results table.

ALS Maintenance

- ☒ Section NOT applicable
- ☐ Check all cabling and configuration settings between GC, tray, and injectors.
- ☐ Vacuum or remove any dust, especially around fans.
- ☐ Check operation of all fans.
- ☐ Check syringe for smooth plunger operation.
- ☐ Check for smooth operation of the needle support - clean if necessary

Restore Instrument

- ☒ Restore the normal operating conditions or customer method using the Data System.
- ☒ Purge the system with carrier flow for 15 minutes
- ☒ Bake out the system, then restore the normal operating conditions
- ☒ After equilibration, check and record the post PM detector signal output values. Results should be similar or lower than the detector outputs recorded prior to PM.
- ☐ Perform a chemical checkout. If this is a routine PM, inject the customer's sample using the ALS if applicable. This will act as a final checkout of both the ALS and the GC.

Note: If the PM Service is performed prior to a qualification service, then use the qualification procedure as a guide for final instrument set up and checkout.

Signature Page

Service Review

- ☒ Attach available reports/printouts of all tests to this documentation.
- ☒ Record the Preventive Maintenance service activity in the customer's records/logbook.
- ☒ Update/reset instrument maintenance counters as appropriate.
- ☒ Affix the PM sticker to the system or instrument logbook based on the customer's request.
- ☒ Complete the Service Engineer Comments section if there are additional comments.
- ☒ Review with the customer this service, parts replaced, and test results obtained.
- ☐ If the instrument firmware was updated, record the details of the change in the Service Engineer's Comments box or if necessary, in the customer's IQ records.
- ☐ Supply the customer with a copy of the Smart Alerts flyer.
- ☐ Describe Smart Alerts to the customer.
- ☐ Install Smart Alerts if requested.

7890 GC Test Results Table

Detector Signal Outputs	Before PM Service	After PM Service
Front detector output	N/A	N/A
Back detector output	N/A	N/A
AUX detector output	N/A	N/A
Pressure decay test	Expected test result	Actual test result
Front Inlet pressure decay test	Pass	Pass
Back Inlet pressure decay test	Pass	Pass

7890 Parts List Table

The following kits are recommended for capillary and purged packed Inlets. If this is a general PM and the customer has a preferred set of consumables, you may use the customer's consumables.

Part description	Part number	Product or model where used	Quantity consumed
SSL Capillary Inlet PM kit, Splitless	5188-6497	7890A/B	1
SSL Capillary Inlet PM kit, split	5188-6495	7890A/B	1
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Low Pressure Drop Split Liner - with Glass Wool	5190-2295	7890A/B	N/A
PP Inlet PM kit	5188-6498	7890A/B	N/A
Split vent trap PM kit, single cartridge (for MMI, PTV & VI)	5188-6495	7890A/B	N/A
MMI Cleaning Kit	G3510-60820	7890A/B	N/A
PTV Septumless Head Rebuild Kit	5182-9747	7890A/B	N/A
PTV Septumless Head Teflon Guide	5182-9748	7890A/B	N/A
Ignitor (glow plug) assembly with O-ring	19231-60680	7890A/B	N/A
FID Collector Rebuild/Cleaning Kit	G1531-67000	7890A/B	N/A
Standard .011-inch FID Jet for capillary FID base	G1531-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary FID base	G1531-80620	7890A/B	N/A
Standard .018-inch FID Jet for packed column with packed FID base	18710-20119	7890A/B	N/A
Standard .011-inch FID Jet for capillary column with packed/adaptable FID base	19244-80560	7890A/B	N/A
High Temperature .018-inch FID Jet for capillary column with packed/adaptable FID base	19244-80620	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID	G1534-80580	7890A/B	N/A
NPD Jet, universal fit, .011-inch ID Extended tip	G1534-80590	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Gold Seal with Washer	5190-6144	7890A/B	N/A
SSL Capillary Ultra Inert Inlet Splitless Liner - Single taper with Glass Wool	5190-2293	7890A/B	N/A
FID Collector Replacement Kit, if needed	G1531-67001	7890A/B	N/A

Service Engineer Comments

If there are any specific points you wish to note as part of performing the service or other items of interest for the customer, please write include them in this box.

N/A

Service Completion

Service request number 6026807758 Date service completed 12 Jun 2024
Agilent signature [Signature] Customer signature [Signature]
Total number of pages in this document 10

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DE number: 44166.7597222222
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Page 9 of 10



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Document Control Logs

Revision Log

Revision	Date	Author	Reason for update
Revision of document	Date of issuance	Author of document	Author to describe main features/changes made for this specific revision
1.0 Draft	4-Mar-2011	Dave Park	Migrated the content of revision A.01.05 to the new Agilent template. Reviewed by subject matter expert, Dave Park.
1.1 Draft	20-Jan-2015	Dave Park	Added Split Vent trap to MM, PTV and VE - also PTV and FID PM Parts
1.2 Draft	31-March-2015	Dave Park	Added Ultra Inert Gold Seal and Liner to SS Consumables
A.01.11	10-Dec-2015	Dave Park	Added step to perform maintenance on the Split Vent Tube and .018" FID Jet part numbers - Fixed broken web links
2.00	30-Dec-2020	Gary Boardman	Updated New Template and terminology change: Familiarization to Introduction. Create New Agilent Document Number: D0007063

Approval Log

Revision	Approver	Title of approver
Add revision number	Add approver name here	Add approver's function or title here
A.01.05	Don Gage	Product support manager
A.01.09	Kal Meng	Product support manager
A.01.10	Suneetha Tippireddy	Product support manager
A.01.11	Suneetha Tippireddy	Product support manager
2.00	Josh Roark	GC Product Support Manager

Designated Evaluation Log

Revision	Designated Evaluator (DE)	Title of DE	DE Number
Add revision number	Add name	Add function or title	Add DE number here
2.00	Michael Zumwalt	CrossLab Start Up Services Application Consulting Lead	44166.7597222222

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DE number: 44166.7597222222
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Page 10 of 10



Certificate of System Qualification

GC-OQ + GCMS-OQ

System ID: US2509MA07
Organization Name: Secot CO., Ltd. (Head Office)
Organization Location: 239 Rimklongprapa Rd., Bangsue, Bangkok 10500

Date: April 10, 2025 3:59:29 PM
EQP Name: AgilentRecommended, AgilentRecommended

EQP Revision: GC.02.55, GCMS.02.56
Overall Qualification Status: Pass

CDS Logon Verification - GC

Logon: No logon credentials required for customer CDS

System Inspection and Basic Safety and Operation

Name: 8890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Accuracy

Name: 8890
Front SSL

Setpoint Status: Pass
Setpoint Actual
Inlet Pressure: 25.0 psi 24.9 psi
Accuracy: 0.1 psi
Agilent Recommended: <= 1.2

Overall Inlet Pressure Accuracy Test Status
Pass

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

GC Oven Temperature Accuracy

Name: 8890
Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 230.0 230.0 °C
Accuracy: 0.0 °C
Agilent Recommended: >= -1.0 % setpoint in K (-5.0 °C)
<= 1.0 % setpoint in K (5.0 °C)

Setpoint Status: Pass
Zone: Oven
Setpoint/Actual
Temperature: 100.0 100.0 °C
Accuracy: 0.0 °C
Agilent Recommended: >= -1.0 % setpoint in K (-3.7 °C)
<= 1.0 % setpoint in K (3.7 °C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability

Name: 8890
Setpoint Status: Pass
Setpoint/Average
Temperature: 100.0 100.05 °C
Stability: 0.1 °C
Agilent Recommended: <= 0.5

Overall GC Oven Temperature Stability Test Status
Pass

Log Amp

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Tested Combination1 Front SSL / External SQ
Name: 5977C
Setpoint Status: Pass
Overall Log Amp Test Status
Pass

RFPA

Tested Combination1 Front SSL / External SQ
Name: 5977C
Setpoint Status: Pass
Amu: 1050 m/z Drift After Five Minutes: 31 mV RFPA Voltage: 510 mV
Agilent Recommended: >= -100 and <= 100 <= 1100
Overall RFPA Test Status
Pass

Tune EI

Tested Combination1 Front SSL / External SQ
Name: 5977C
Setpoint Status: Pass
Filament: 1
Setpoint Status: Pass
Filament: 2
Overall Tune EI Test Status
Pass

Scouting Run

Tested Combination1 Front SSL / External SQ
Manual Injection
Date: April 10, 2025 3:58:28 PM
System ID: US2509MA07

Name: Not applicable
Source: EI - Extractor
Setpoint Status: Completed
Injection Volume on Column: 1.0 uL
Overall Scouting Run Status
Completed
NOTE: This test's 1 comment(s) and 1 deviation(s) are available in the Attachments section.

Signal to Noise EI

Tested Combination1 Front SSL / External SQ
Name: 5977C
Source: EI - Extractor Filament: 1
Setpoint Status: Pass
Signal to Noise: 14338
Agilent Recommended: >= 4000
Source: EI - Extractor Filament: 2
Setpoint Status: Pass
Signal to Noise: 8688
Agilent Recommended: >= 4000
Overall Signal to Noise EI Test Status
Pass

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Instrument Details

Purpose
This section describes the as found system configuration.

Details
System
System ID US2509MA07
Manufacturer Agilent Technologies
Name 8890
Flow Data Input Manual Data
Temperature Data Input Manual Data or Other Data Logging
Tested Combination1
Injection Technique Manual Injection
Inlet Front
Detector External
LTM Included? No
Sampler 1
Manufacturer Agilent Technologies
Type Manual Injection
Usage Sample Injection
Syringe Volume (uL) 10
Mainframe 1
Manufacturer Agilent Technologies
Name 8890
Model Number G3540A
Serial Number CN2508A105
Firmware Revision 3.0.0.181
Oven Type Standard

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Inlet 1
Manufacturer Agilent Technologies
Name 8890
Type SSL
Location Front
Carrier Gas Helium
Control Type Electronic Pressure Control (EPC)
Purged Inlet Yes
Detector 1
Manufacturer Agilent Technologies
Name Mass Spectrometer
Type Mass Spectrometer
Location External
Mass Spectrometer 1
Manufacturer Agilent Technologies
Type SQ
Name 5977C
Model Number G7077C
Serial Number US2509MA07
Firmware Revision Not applicable
High Vacuum System Turbo Pump
Liquid Injection Scouting Run Standard OFN Std
MS EI Source 1
Manufacturer Agilent Technologies
Source Type EI - Extractor
Number of filaments 2

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Electronic Signature

Purpose

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Details

Full Name of Signer: Nattapat Hengcharoen
Logged On User Name: nattapat.hengcharoen@agilent.com
Signature Creation Date: April 10, 2025
Reason for Signature: Executed protocol and published this original version of document

ACE Self Qualification Status

The installed version of ACE used to deliver this service passed qualification; the results conform with expected values. The self qualification summary report is available in the session folder location SDS\ClearStore\AceSelfQualification.

Regulatory Disclaimer

This document provides a protocol to verify and record instrument configuration and evidence of proper operation. It has been prepared from our interpretation of applicable regulations as well as industry best practices. The document is designed to provide an important component of a complete compliance package. Validation depends upon many factors and use of this protocol alone does not assure compliance. Agilent Technologies makes no promises or representations as to its sufficiency for any specific regulatory program.

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Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 7 / 17

Report Generated by Hostname: DESKTOP-STSF4ND					Print Date: April 10, 2025 3:59:30 PM
Secret_GCM8D Transaction log:					
Time	Transaction State	Activity Performed	Type of Transaction	Optional Information	
April 10, 2025 9:43:38 AM	Auth	Session/Created	Session	Host Name: DESKTOP-STSF4ND, Drive Serial Number: E842584E	
April 10, 2025 9:43:38 AM	start	Configuration	Session	None	
April 10, 2025 9:43:38 AM	Auth	Enrollment	Licensing	User is Field Engineer and does not require an unlock code	
April 10, 2025 9:54:33 AM	Auth	EspLoaded	Session	EQP details for primary technique [GC] - File path: [Protocol\Packa\Gc\Configure\kone\02.55\0c-02.55 esp] EQP File Name: [0c-02.55 esp] EQP Name: [AgilentRecommended]Proto cal Revision [GC 02.55] EQP details for hyphenated technique [GCMS] - File path: [Protocol\Packa\Gc\Asu\Config\version\02.56\0cMs-02.56 esp] EQP File Name: [GCMS.02.56 esp] EQP Name: [AgilentRecommended]	
April 10, 2025 9:54:43 AM	End	Configuration	Session	None	
April 10, 2025 9:54:43 AM	start	Qualification	Session	IQ	
April 10, 2025 9:54:49 AM	start	Qualification	Session	DQ	
April 10, 2025 9:54:49 AM	start	Execution	Purchase Order Details - RRRP -	None	
April 10, 2025 9:54:49 AM	start		Purchase Order		
April 10, 2025 9:54:49 AM	End	Qualification	Session	IQ	
April 10, 2025 9:54:56 AM	start	Qualification	Session	DQ	

Page 7 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 8 / 17

Report Generated by Hostname: DESKTOP-STSF4ND					Print Date: April 10, 2025 3:59:30 PM
Secret_GCM8D Transaction log:					
Time	Transaction State	Activity Performed	Type of Transaction	Optional Information	
April 10, 2025 9:54:38 AM	start	Execution	CDS Logon Verification - GC - #880 - Qualitative test	None	
April 10, 2025 9:58:08 AM	End	Execution	CDS Logon Verification - GC - #880 - Qualitative test	Run Count: 1	
April 10, 2025 9:58:10 AM	start	Execution	System Inspection and Basic Safety and Operation - #880 - Qualitative Test - No datapoints associated	None	
April 10, 2025 9:58:25 AM	End	Execution	System Inspection and Basic Safety and Operation - #880 - Qualitative Test - No datapoints associated	Run Count: 1	
April 10, 2025 9:58:27 AM	start	Execution	Intel Pressure Accuracy - Front SSL - Pressure Controlled Intel - S: 25.0 psi - L: <= 1.2 psi	None	
April 10, 2025 9:57:28 AM	End	Execution	Intel Pressure Accuracy - Front SSL - Pressure Controlled Intel - S: 25.0 psi - L: <= 1.2 psi	Run Count: 1	
April 10, 2025 9:57:29 AM	start	Execution	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None	
April 10, 2025 9:58:03 AM	start	Execution	Signal to Note EI - Liquid Injection, Front SSL, GC - Source: EI - Extractor Liding Filament 1 - L: >= 4000	None	
April 10, 2025 10:00:39 AM	start	Execution	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None	

Page 2 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 9 / 17

Report Generated by Hostname: DESKTOP-STSF4ND					Print Date: April 10, 2025 3:59:30 PM
Secret_GCM8D Transaction log:					
Time	Transaction State	Activity Performed	Type of Transaction	Optional Information	
April 10, 2025 10:00:38 AM	Auth	Date	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Date Entry	
April 10, 2025 10:00:42 AM	End	Execution	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count: 1	
April 10, 2025 10:00:44 AM	start	Execution	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None	
April 10, 2025 10:18:14 AM	Auth	Date	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Date Entry	
April 10, 2025 10:18:19 AM	End	Execution	GC Oven Temperature Accuracy - #880 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count: 1	
April 10, 2025 10:19:28 AM	start	Execution	GC Oven Temperature Stability - #880 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	None	
April 10, 2025 10:48:10 AM	Auth	Date	GC Oven Temperature Stability - #880 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Manual Date Entry	
April 10, 2025 10:48:12 AM	End	Execution	GC Oven Temperature Stability - #880 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Run Count: 1	
April 10, 2025 10:48:14 AM	start	Execution	Log Amp - 607°C GC - Source: EI - Extractor	None	
April 10, 2025 10:50:30 AM	End	Execution	Log Amp - 597°C GC - Source: EI - Extractor	Run Count: 1	

Page 3 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 10 / 17

Trace Manager - Worksheet: RunLogSummary
Report Generated by Hostname: DESKTOP-STSF4HQ
Print Date: April 10, 2025 3:58:30 PM

Reco_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 10:55:32 AM	start	Execution	RPFA - 5877C SQ - Source: EI - None - Extractor	
April 10, 2025 10:57:39 AM	start	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	None
April 10, 2025 11:07:38 AM	start	Execution	RPFA - 5877C SQ - Source: EI - None - Extractor	
April 10, 2025 11:17:53 AM	End	Execution	RPFA - 5877C SQ - Source: EI - Run Count: 1 - Extractor	
April 10, 2025 11:17:53 AM	start	Execution	Tune EI - 5877C SQ - Source: EI - None - Extractor Filament 1 (Qualitative - No spots associated)	
April 10, 2025 11:18:00 AM	End	Execution	Tune EI - 5877C SQ - Source: EI - Run Count: 1 - Extractor Filament 1 (Qualitative - No spots associated)	
April 10, 2025 11:18:11 AM	start	Execution	Tune EI - 5877C SQ - Source: EI - None - Extractor Filament 2 (Qualitative - No spots associated)	
April 10, 2025 11:18:24 AM	End	Execution	Tune EI - 5877C SQ - Source: EI - Run Count: 1 - Extractor Filament 2 (Qualitative - No spots associated)	
April 10, 2025 11:19:25 AM	start	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	None

Page 4 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 11 / 17

Trace Manager - Worksheet: RunLogSummary
Report Generated by Hostname: DESKTOP-STSF4HQ
Print Date: April 10, 2025 3:58:30 PM

Reco_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 12:10:38 PM	start	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	None
April 10, 2025 12:10:59 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 12:11:04 PM	start	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	None
April 10, 2025 12:11:06 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 12:14:30 PM	Audit	AcqClosed	Session	None
April 10, 2025 12:15:07 PM	Audit	AcqRestarted	Session	Host Name: DESKTOP-STSF4HQ, Drive Serial Number: EM2594E
April 10, 2025 2:31:58 PM	Audit	Session/Reloaded	Session	None
April 10, 2025 2:31:59 PM	start	Qualification	Session	IQ
April 10, 2025 2:31:59 PM	start	Qualification	Session	OQ
April 10, 2025 2:31:59 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 2:32:02 PM	start	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	None

Page 5 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 12 / 17

Trace Manager - Worksheet: RunLogSummary
Report Generated by Hostname: DESKTOP-STSF4HQ
Print Date: April 10, 2025 3:58:30 PM

Reco_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 2:32:42 PM	Audit	Data	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	Data file Path: D:\Project\0002020\data\0002020\Sct.d
April 10, 2025 2:33:06 PM	End	Execution	Scouting Run - Manual Injection, Front SSL, SQ - Source: EI - Extractor - Part of GCMS System Preparation	Run Count: 1
April 10, 2025 2:33:09 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 2:48:36 PM	Audit	AcqClosed	Session	None
April 10, 2025 2:55:10 PM	Audit	AcqRestarted	Session	Host Name: DESKTOP-STSF4HQ, Drive Serial Number: EM2594E
April 10, 2025 3:05:57 PM	Audit	Session/Reloaded	Session	None
April 10, 2025 3:05:59 PM	start	Qualification	Session	IQ
April 10, 2025 3:05:59 PM	start	Qualification	Session	OQ
April 10, 2025 3:05:59 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 3:08:27 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	None
April 10, 2025 3:19:40 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	Manual Data Entry

Page 6 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 13 / 17

Trace Manager - Worksheet: RunLogSummary
Report Generated by Hostname: DESKTOP-STSF4HQ
Print Date: April 10, 2025 3:58:30 PM

Reco_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 3:19:42 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 1 - L: >= 4000	Run Count: 1
April 10, 2025 3:19:44 PM	start	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 4000	None
April 10, 2025 3:19:58 PM	Audit	Data	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 4000	Manual Data Entry
April 10, 2025 3:19:57 PM	End	Execution	Signal to Noise EI - Liquid Injection, Front SSL, SQ - Source: EI - Extractor using Filament 2 - L: >= 4000	Run Count: 1
April 10, 2025 3:19:59 PM	End	Qualification	Session	OQ
April 10, 2025 3:19:59 PM	start	Reporting	Session	None
April 10, 2025 3:41:22 PM	End	Reporting	Session	None
April 10, 2025 3:41:22 PM	start	Qualification	Session	IQ
April 10, 2025 3:41:22 PM	start	Execution	Purchase Order Details - 8890 - Preparation	None
April 10, 2025 3:44:42 PM	start	Execution	Purchase Order Details - 8890 - Preparation	None
April 10, 2025 3:44:43 PM	End	Execution	Purchase Order Details - 8890 - Preparation	Run Count: 1
April 10, 2025 3:44:53 PM	start	Execution	Purchase Order Details - 8890 - Preparation	None
April 10, 2025 3:44:53 PM	End	Execution	Purchase Order Details - 8890 - Preparation	Run Count: 1

Page 7 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 14 / 17

User: Nattapol Hengchareon
Report Generated by Hostname: DESKTOP-STF4N3
Print Date: April 10, 2025 3:59:30 PM

Secot_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 3:45:06 PM	Start	Execution	Product Quality Assurance Details - 8890 - Quality Assurance	None
April 10, 2025 3:45:08 PM	End	Execution	Documentation - 8890 - Documentation	Run Count: 1
April 10, 2025 3:45:12 PM	Start	Execution	Startup - 8890 - Startup	None
April 10, 2025 3:45:12 PM	End	Execution	Product Quality Assurance Details - 8890 - Quality Assurance	Run Count: 1
April 10, 2025 3:45:15 PM	End	Execution	Startup - 8890 - Startup	Run Count: 1
April 10, 2025 3:45:16 PM	Start	Execution	Instrument Check - External Mass Spectrometer - Instrument Check	None
April 10, 2025 3:45:32 PM	End	Execution	Instrument Check - External Mass Spectrometer - Instrument Check	Run Count: 1
April 10, 2025 3:45:33 PM	End	Qualification	Session	IQ
April 10, 2025 3:45:33 PM	Start	Qualification	Session	OQ
April 10, 2025 3:45:35 PM	End	Qualification	Session	OQ
April 10, 2025 3:45:36 PM	Start	Reporting	Session	None
April 10, 2025 3:48:12 PM	Audit	Reporting	Session	Report Generated: Certificate
April 10, 2025 3:48:29 PM	Audit	Reporting	Session	Report Generated: Report

Page 8 / 10

User: Nattapol Hengchareon
Report Generated by Hostname: DESKTOP-STF4N3
Print Date: April 10, 2025 3:59:30 PM

Secot_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 3:47:30 PM	Audit	Reporting	Session	Report Signed: Certificate PDF Name: Secot_GCMSD_20250410_Certificate_1.pdf User Name: nattapol.hengchareon@agilent.com Full Name of Signer: Nattapol Hengchareon Reason for signature: Executed protocol and published this original version of document
April 10, 2025 3:47:58 PM	Audit	Reporting	Session	Report Signed: Report PDF Name: Secot_GCMSD_20250410_OReport_1.pdf User Name: nattapol.hengchareon@agilent.com Full Name of Signer: Nattapol Hengchareon Reason for signature: Executed protocol and published this original version of document
April 10, 2025 3:48:18 PM	Audit	AcqClosed	Session	None
April 10, 2025 3:50:07 PM	Audit	AcqRestarted	Session	Host Name: DESKTOP-STF4N3, Drive Serial Number: EB42594C
April 10, 2025 3:50:08 PM	Audit	SessionReloaded	Session	None
April 10, 2025 3:50:09 PM	Start	Qualification	Session	IQ
April 10, 2025 3:50:09 PM	Start	Qualification	Session	OQ
April 10, 2025 3:58:09 PM	Audit	Reporting	Session	Report Generated: Certificate

Page 9 / 10

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 15 / 17

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 16 / 17

User: Nattapol Hengchareon
Report Generated by Hostname: DESKTOP-STF4N3
Print Date: April 10, 2025 3:59:30 PM

Secot_GCMSD Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 10, 2025 3:58:31 PM	Audit	Reporting	Session	Report Generated: Report

Page 10 / 10

Sheet No.: CAL-M5006/01/25



CONTROL UNIT CALIBRATION

(Metric units, mm)

Date: 6 Jan 25

	Initial	Final	Average	
Barometric press, Pb	758	758	758	mmHg

Dry Gas Meter Data

Console No. M50-06

Metering System ID

DGM Number 917415

DGM Model MST-C2-1

Calibrated by: Montri P.

Reference Dry Gas Meter Data

Serial No. 358794

Model S110

Correction factor (Yr) 1.0077

Last Calibration Date 25 Oct 24

Orifice manometer setting, ΔH mm H ₂ O	Ref. DGM Volume V _m Liters	DGM Volume V _m Liters	Temperature (°C)				Time @ min	DGM Correction factor (Y)	ΔH @ min	
			Ref DGM	Dry Gas Meter						
				Inlet T _i	Outlet T _o	Avg T _m				
12.5	100.0	99.8	25	T ₁	T ₂	24.5	8.92	1.0071	43.1453	
25.0	100.2	100.4	25	25	24	24.5	6.13	1.0020	42.5581	
50.0	100.0	100.9	25	25	24	24.5	4.33	1.0002	42.6407	
76.0	100.1	102.5	25	25	24	24.5	3.53	0.9975	43.0490	
100.0	100.1	102.2	25	25	24	24.5	3.53	0.9975	43.0490	
150.0	100.0	101.5	25	25	24	24.5	2.53	0.9973	43.7294	
Average									0.9983	43.4110

Approved by:

Date: April 10, 2025 3:59:29 PM
System ID: US2509MA07

Page 17 / 17



PITOT TUBE CALIBRATION REPORT

Calibration Location: SECOT

Calibration Date: 04-01-2025

Calibration Duct No.: CD-0123

Calibration Standard Pitot tube data

Pitot No.: S10-02

Coefficient (Cp): 0.99

Type S Pitot No.: LL10-01

Calibrated by: Mr. Montri P.

A Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	$C_p(s)$	Deviation, δ $C_p(s) - C_p(A)$
1	15.0	21.0	0.8367	-0.0068
2	15.0	20.5	0.8468	0.0034
3	15.0	20.5	0.8468	0.0034

 $C_{P(A),AVG}$ 0.8435

B Side Calibration

Run No.	ΔP_{std} (mm H ₂ O)	ΔP_s (mm H ₂ O)	$C_p(s)$	Deviation, δ $C_p(s) - C_p(B)$
1	15.0	20.5	0.8468	0.0034
2	15.0	21.0	0.8367	-0.0068
3	15.0	20.5	0.8468	0.0034

 $C_{P(B),AVG}$ 0.8435 $|C_p(A) - C_p(B)| = 0.0000$ $C_{P(AVG)} = 0.8435$

Approved by:

*** δ must be ≤ 0.01 for the test to be acceptable ***
*** $|C_p(A) - C_p(B)|$ must also be < 0.01 if average of $C_p(A)$ and $C_p(B)$ is to be used ***

SECOT CO., LTD.
239 Rinklongprapa Rd., Bangsue, Bangkok 10800 THAILAND
Tel: (662) 2709 4850 Fax: (662) 2709 4917
E-Mail: secot@secot.co.th



SOUND LEVEL METER CALIBRATION

Calibration Location: SECOT

Calibration Date: Apr 21, 25

ACOUSTIC CALIBRATOR

Brand	Model	Serial No.	Frequency (Hz)	Ref. Calibrated (dB)	Eff. Calibrated (dB)
Cirrus	CR-515	97097	1000.00	94.0	93.7

No.	Brand	Model	Serial No.	Reading (dB)	dB Adjust
15	Cirrus	CR162B	G300769	94.4	-0.7
19	Cirrus	CR162B	G300990	93.0	0.7
20	Cirrus	CR162B	G301014	94.3	-0.6
39	Cirrus	CR162B	G302743	93.7	0.0
43	Cirrus	CR162B	G302741	93.7	0.0
49	Cirrus	CR162B	G302330	93.7	0.0
50	Cirrus	CR162B	G302333	93.7	0.0

Calibrated by:

Approved by: Preecha f.

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Tel: +66 2709 4850 Fax: +66 2324 9917



Certificate No.: CP20240363EA
Operation No.: CP2024090339

Certificate of Calibration

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR515
Serial No.: 97097
ID No.:
Customer: SECOT Co., Ltd.
Address: 239 Rinklongprapa Rd., Bangsue,
Bangkok 10800 Thailand
Received Date: 30 September 2024
Calibrated Date: 2 October 2024
Issued Date: 4 October 2024
Calibrated by: Ms. Juntapom Kunhakom

Approved by:
(Mr. Sittichai Swaksuriyawong)
Group Manager

This report was prepared electronically using applicable electronic signature. Printing or copy of file are considered as a copy of the document.
The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor (k)
providing a level of confidence of approximately 95%. This certificate may not be reproduced other than in full except
with the prior written approval of the Electrical and Electronics Institute, Foundation for Industrial Development.



ELECTRICAL AND ELECTRONICS INSTITUTE
FOUNDATION FOR INDUSTRIAL DEVELOPMENT

Certificate No.: CP20240363EA

Calibration Report

Equipment: Sound Calibrator
Manufacturer: Cirrus Research Plc
Model/Type: CR515
Serial No.: 97097
ID No.:
Ambient Temperature: (23 ± 2) °C
Relative Humidity: (50 ± 15) %
Pressure: (101.3 ± 1.5) kPa
Method of Calibration :-
IEC 60942:2017

Condition of this result of calibration

1. Reference standards instrument >

Instrument	Model	Serial No.	Cert. No.	Due Date
1) Standard microphone	4180	2651000	AA-1007-24	6 June 2025
2) Waveform Generator	33511B	MY52302264	CK20240047EA	23 June 2025
3) Audio Analyzing DMM	2015-P	000136E	E1U2503776	7 December 2024
4) Pressure humidity and Temperature Transmitter	PTU301	F0640002	CL1-P280022 CD20240180EA	20 March 2025 7 August 2025

2. This result of calibration was found accurate as shown on date and place of calibration only.

3. This certification is traceable to the International system of unit maintained at :-

- Reference standards Instrument for Acoustic function

- National Institute of Metrology (Thailand)

- Reference standards Instrument for Electrical function

- Electrical and Electronics Institute; NSC Accredited Calibration No.0119

- NA Caltechnologies Co., Ltd.; ANAB Accredited Calibration No.AC-2658.

Result of Calibration:

1. Function : Sound pressure level

Nominal Frequency (Hz)	Specified Sound Pressure level (dB)	Measured value (dB)	Deviated value ⁽¹⁾ (dB)	Acceptance limit ⁽²⁾ (dB)
1000	94	94.09	0.09	±0.25

2. Function : Frequency

Nominal Sound Pressure level (dB)	Specified Frequency (Hz)	Measured value (Hz)	Deviated value ⁽¹⁾ (%)	Acceptance limit ⁽²⁾ (%)
94	1000	1000.31	0.03	±0.70



Certificate No.: CP20240363EA

Calibration Report

3. Function : Total distortion + noise

Nominal Sound Pressure level (dB)	Nominal Frequency (Hz)	Measured value ^(B) (%)	Acceptance limit ^(B) (%)
94	1000	0.60	2.50

Uncertainty of measurement

Function	Uncertainty	Maximum-permitted uncertainty of measurement ^(B)
Sound pressure level	0.10 dB	0.15 dB
Frequency	0.10 %	0.20 %
Total distortion + noise	0.40 %	0.50 %

- Note:
- (1) The deviated value is the absolute value of the difference between the measured value and the corresponding specified sound pressure level.
 - (2) The deviated value is the absolute value of the difference in percent between the measured value and the corresponding specified frequency.
 - (3) The acceptance limit is for the deviated value.
 - (4) The measured value is the total distortion + noise, measured over the frequency range from 20 Hz to 20 kHz.
 - (5) The acceptance limit is for the Measured value.

- Remarks:
1. Acceptance limit was IEC 60942:2017 Class 1.
 2. Maximum-permitted uncertainty of measurement was IEC 60942:2017 Class 1.
 3. The coverage factor $k = 2.00$

-- End of Report --



PinAAcle 900 Series 900T, 900H, 900Z & 900F Installation Checklist

Customer : SBCOT Co., Ltd.	Date Tested: 27-28 Sep 2023
239 ถนนพหลโยธิน แขวงจตุจักร กรุงเทพมหานคร 10700	Customer Name: คุณณัฐพร
โทรศัพท์ 02-02528406	Tel #: 086-590-9080
CRM # 4854691	Work Order #: WO-02528406
	CSE: Chainarong Thanin

UPON SITE ARRIVAL:

- ☒ Verify that the instrument was not damaged during shipment.
- ☒ Unpack the PC and all other accessories. Record the following:

PinAAcle Instrument Model:	PinAAcle900T	S/N	PTDS23051001
Auto Sample Model:	AS 900	S/N	AS9C23037501
Computer Model:	DELL OptiPlex	S/N	DTV8NY3
Cooling System Model:	PolyScience	S/N	2301-01301
Printer Model:	N/A	S/N	N/A
Misc.	FIAS 100	S/N	100523071301

- ☒ Record the software and firmware revision below:
Syngistix Software for AA Version: 5.1.0.2086
PinAAcle Spectrometer Firmware Version: 1.5.0.0128
PinAAcle Furnace Firmware Version: 2.20.040
- ☒ Check the model specific Shipping Kit packed separately for completeness.
Verify the shipping kit with each instrument order includes all items listed.



PER-INSTALLATION CHECKS:

- ☒ Verify that proper ventilation is installed and an adequate exhaust rate is accordance to PYL.
- ☒ Verify that the gasses meet our PYL specifications.
- ☒ Verify that gas pressure regulators are installed with proper filters and pressure are set in accordance to PYL.
- ☒ Verify that the wiring in the lab meets our power and noise requirements specified in PYL.
- ☒ Verify that the lab environment conditions (room temperature, relative humidity) meet in our PYL specification.
- ☒ Maintenance accessibility is adequate.
- ☒ Measured Main Input Voltage under load is adequate per our PYL specifications (≥ 208 VAC)

PHYSICAL INSTALLATION:

- ☒ The instrument, cooling system, computer and any accessories are unpacked and installed on suitable bench.
- ☒ Install all the electrical connections.
- ☒ Connect the gas hoses and tank regulators, set required pressures, and leak test as required.
- ☒ Install the burner system components. (PinAAcle Series 900T & 900F)
- ☒ Mount and connect the auto sample.
- ☒ Fill and connect the cooling system or connect external cooling according to specifications.
- ☒ Setup the computer and printer. Interconnect all cables between the computer, printer, and instrument.
- ☒ Setup and configure the computer to the instrument and install the software according to the installation chapter in the PinAAcle Service Manual.
- ☒ Record the furnace head voltage and manual temperature of 1200 Degrees Celsius.

INSTALLATION TESTING:

- ☒ Perform the following instrument performance tests according to the installation and test procedure. Complete the Instrument Performance Test Data Sheet below.
PinAAcle900T, 900H & 900F
Flame Copper Sensitivity and Precision
PinAAcle900T & 900Z
Furnace Copper Characteristic Mass and Zeeman Ratio
PinAAcle900H
Furnace Chromium Characteristic Mass and Precision
- ☒ Make and electronic copy of the instrument parameters file per SDB 900PIN_021 procedure on the customer's computer.



CUSTOMER ORIENTATION:

- ☒ Refer to the Customer Orientation Script for details.
- ☒ Explain the warranty and customer replaceable parts policy.
- ☒ Inform the customer of relevant PerkinElmer training courses, websites, and phone number.



WO-02528408

PinAAcle 900 Series 900T, 900H, 900Z & 900F

Installation Performance Test Data Sheet

Flame Sensitivity and Precision

(PinAAcle Series 900T, 900H & 900F)

With Stainless Steel Nebulizer

Sensitivity	Mean Absorbance ≥ 0.250	N/A
Precision	%RSD ≤ 0.30 %	N/A

With High Sensitivity Nebulizer

Sensitivity	Mean Absorbance ≥ 0.250 Abs.	0.3957
Precision	%RSD ≤ 0.40 %	0.29 %

THGA Furnace Copper Characteristic Mass and Zeeman Ratio

(PinAAcle 900T & 900Z)

Copper Characteristic Mass

Characteristic Mass	14 ± 2.5 pg	11.3 pg
Zeeman Ratio	0.52 ± 0.04	0.55
Precision	%RSD ≤ 2.0 %	0.07 %

A.C Voltage measurement under load (Atomization)

≥ 208 VAC	214.6 VAC
----------------	-----------

HGA Furnace Chromium Characteristic Mass and Precision

(PinAAcle 900H)

Chromium Characteristic Mass

Characteristic Mass	3 ± 0.8 pg	N/A
Precision	≤ 2.0 %	N/A

A.C Voltage measurement under load (Atomization)

≥ 207 VAC	N/A
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Page 4 of 7



WO-02528408

PinAAcle 900 Added Installation Test Checklist:

Model:	PinAAcle900T	Serial Number:	FTD923061001
Software Version:	5.1.0.2068	Spectrometer FW Version:	1.5.0.0128
		Furnace FW Version:	2.20.040
		Instrument Control PCB revision:	3

NOTE: First 12 test checks are mandatory

1. 0.2, 0.7 & 2.0 Slits and 9 Lamp turret position calibration.
Check ☒

2. Cu energy & Capacitance:

Cu 324.75nm Line Energy can vary by model and configuration, but Capacitance should be ≥ 7 pF.
Capacitance = 7.0 pF

3. Wavelength Calibration Passed (As, Cu, Ba, K < 5 steps)

Yes ☐
No ☒

4. Wavelength Accuracy Check

AS 193.70 nm +/- 0.12 nm	(193.56-193.82)	193.700 nm
Cu 324.75 nm +/- 0.12 nm	(324.63-324.87)	324.700 nm
Ba 553.55 nm +/- 0.12 nm	(553.43-553.67)	553.590 nm
K 766.49 nm +/- 0.12 nm	(766.37-766.61)	766.490 nm

5. HCL Sample to HCL Reference Ratio with Cu #

30:70	0.42	HCL = 0.43, spec 0.18-0.58, target 0.34-0.52
30:70	1.43	D2 spec = 1.0-4.3
60:50	N/A	HCL = 1.0, spec 0.42-1.35, target 0.90-1.15
60:50	N/A	D2 spec = 0.43-1.84

6. Monochromator Bleed cover with Cu: Must be done with dark current checked (on) #

Sample beam blocked value	11	spec <80 counts, ideally <20
Reference beam blocked value (900TH)	8	spec <80 counts, ideally <20

7. Cu Flame Double-Beam Check #

Mean_15 mA - Mean_10 mA = < 0.004% -0.0014

8. Low UV Energy & Capacitance check: check on on all

Cu 218.5 nm	1.0	≥ 1 pF Energy = 68	below 50 may be a problem
Pb 217.0 nm	N/A	≥ 1 pF Energy = N/A	below 50 may be a problem
Zn 213.0 nm	2.5	≥ 1 pF Energy = 79	below 50 may be a problem

* Option tests

N/A for PinAAcle 900Z. Flame double-beam mode test

Page 5 of 7



WO-02528408

9. Mn Resolution Peak to Valley Ratio

HCL Sample Intensity (Valley) / HCL Sample Intensity (Peak) < 0.40 (40%)	N/A
HCL Reference Intensity (Valley) / HCL Reference Intensity (Peak) < 0.40 (40%)	N/A
Furnace Mode (900Z)	
HCL Sample Intensity (Valley) / HCL Sample Intensity (Peak) < 0.40 (40%)	N/A

10. Furnace and Baffles Alignment Check w/ Cu (900TZ/H)

Pk Area - AA < 0.005 A-s	0.0004
Pk Area - BG < 0.005 A-s	0.0012

11. Furnace auto sample check valve test (900TZ/H)

Place sample probe onto rinse alignment and for 2 minutes and watch for backwards flow of rinse solution
Does rinse solution go backward? Y/N N

Optional Test Check

[Flame only Verification - 900TH/F]

12. Gas box calibration check default flow settings

Fuel flow	20	20-22
Oxidant flow	42	around 43
Nebulizer Pressure	29	29-29.5

[Furnace only Verification] *Note test 13&14 should be done simultaneously

13. Voltage drop*

2300C Atomization test 7.5 spec < 16 volts

14. Cr heating rate*: By design the ASCOM PS will output the right DC voltage regardless of the incoming voltage, so that is not the purpose of this test. We are using this to check the conductivity of the furnace head and the function of the pyrometer.

10ppb Cr standard @ 2300C Peak Height/Peak Area 1.578 > 1.3

Page 6 of 7

PerkinElmer Service Engineer Signature:

Chalnarong Thanin
Chalnarong ThaninDate: 27-28 Sep 2023

Page 7 of 7

Calibration Certificate

Certificate No.: 2402881-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road, Bangsue,
Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: MEMMERT

Model: UF55

Serial No.: B213.0285

ID No.: N/A

Order No.: 2402881

Operation No.: 2402881-001

Date of Receipt: 24 May 2024

Date of Calibration: 24 May 2024

Calibrated by Mr. Phraphet Tuanjit
Scientist
Approved by *P. Janyachai*
(Miss Preyaporn Jaengkamkit)
Vice President, Department of Laboratory Services
Responsible for the Technical Management Team

Date of Issue: 30 May 2024

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-C5-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2402881-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF55
Resolution: 0.1 °C
Manufacturer: MEMMERT
Serial No.: B213.0285
ID No.: N/A
Date of Calibration: 24 May 2024

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition: Ambient Temperature (31.0 ± 1) °C
Relative Humidity (68 ± 5) %
Line Voltage (220 ± 3) Volt

Condition of this result of Calibration:

- This instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59003377	TE 670223-01	13 January 2025	NATIONAL FOOD INSTITUTE
	RTD	CH101-100/RTD#101-100			

3. This certificate is traceable to International System of Units (SI Units).

4. This certificate was certified only for the instrument we calibrated.

5. This result of calibration was found accurate as shown on date and place of calibration only.

6. Condition of Calibrated Item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 80.0, 104.0 and 180.0 °C
Fresh air Damper ☒ Open Position ☒ Fan ☒ 10%
☒ Close ☐ Not Available
7. Result of Calibration : ☒ Without adjustment ☐ After adjustment

P. Janyachai
30 May 2024

F-C5-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2402881-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF55
Resolution: 0.1 °C
Manufacturer: MEMMERT
Serial No.: B213.0285
ID No.: N/A
Date of Calibration: 24 May 2024

Page 3 of 3

Calibration point: 80.0, 104.0 and 180.0 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	30.7	63.6	217.0
MAX	31.4	73.1	223.0

Table 1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
80.0	79.99	79.94	80.08	80.08	80.13	79.95	79.90	80.17	80.13	0.46
104.0	103.86	103.80	104.00	103.99	104.10	103.83	103.81	104.18	104.10	0.53
180.0	179.73	179.73	180.01	180.00	180.44	179.61	180.20	180.56	180.25	0.90

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
80.0	80.0	80.0	80.0	0.05	0.23	0.37
104.0	104.0	104.0	104.0	0.10	0.30	0.53
180.0	180.0	180.0	180.0	0.10	0.52	0.98

Note: The quoted uncertainty include: " Stability " and " Loading effect (20% of Temp Uniformity) "

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

***** End *****

P. Janyachai
30 May 2024

F-C5-012 Revision: 01 Date: 20-04-65



Calibration Certificate

Certificate No.: 2503097-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road,
Bangsue, Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: MEMMERT

Model: UF 55

Serial No.: B213.0285

ID No.: N/A

Order No.: 2503097

Operation No.: 2503097-001

Date of Receipt: 23 May 2025

Date of Calibration: 23 May 2025

Calibrated by Mr. Manas Someak
Specialist
Approved by *M. Phraphet Tuanjit*
(Mr. Phraphet Tuanjit)
Manager, Division of Calibration Laboratory
Responsible for the Technical Management Team

Date of Issue: 26 May 2025

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-C5-009 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2503097-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF 55 **Serial No.:** B213.0295
Resolution: 0.1 °C **ID No.:** N/A
Manufacturer: MEMMERT
Date of Calibration: 23 May 2025 **Page 2 of 3**

Location: Laboratory, SECOT CO., LTD.
Environment Condition: Ambient Temperature (30.7 ± 1) °C
Relative Humidity (56.0 ± 3) %
Line Voltage (224.9 ± 1) Volt

Condition of this results of Calibration:

- This Instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59002902	2502797-002-01	3 May 2026	NATIONAL FOOD INSTITUTE
	RTD	CH#101-109/ RTD#101-109			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated Item : Good

UUC Description :

Time of Record : 1 Hour 9 Minute At 80.0, 104.0 and 180.0 °C
Fresh air Damper : ☒ Open Position ☐ Close Fan 50%
☒ Not Available

- Result of Calibration : ☒ Without adjustment ☐ After adjustment

F-CE-012 Revision: 01 Date: 20-04-45



Calibration Report

Certificate No.: 2503097-001-01
Equipment: CHAMBER (Hot Air Oven)
Model: UF 55 **Serial No.:** B213.0295
Resolution: 0.1 °C **ID No.:** N/A
Manufacturer: MEMMERT
Date of Calibration: 23 May 2025 **Page 3 of 3**

Calibration point: 80.0, 104.0 and 180.0 °C

Calibration results:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	30.6	52.6	223.5
MAX	30.8	59.4	226.2



Table 1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	#1	#2	#3	#4	#5	#6	#7	#8	#9	
80.0	79.77	79.86	79.92	79.93	79.77	79.78	80.16	80.00	80.06	0.46
104.0	103.70	103.86	103.94	103.93	103.66	103.75	104.30	104.11	104.18	0.53
180.0	179.72	179.97	179.98	180.02	179.61	179.65	180.57	180.36	180.52	0.90

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* Reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
80.0	80.0	80.0	80.0	0.041	0.29	0.47
104.0	104.0	104.0	104.0	0.055	0.52	0.73
180.0	180.0	180.0	180.0	0.086	0.92	1.1

Note: The quoted uncertainty include * Stability * and * Loading effect (20% of Temp Uniformity) *

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

----- End -----

F-CE-012 Revision: 01 Date: 20-04-45



Calibration Certificate

Certificate No.: 2503097-002-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road,
Bangsue, Bangsue, Bangkok 10800

Page 1 of 3

Equipment: CHAMBER (Hot Air Oven)

Manufacturer: MEMMERT

Model: UM 400

Serial No.: B499.1400

ID No.: N/A

Order No.: 2503097

Operation No.: 2503097-002

Date of Receipt: 23 May 2025

Date of Calibration: 23 May 2025

Calibrated by Mr.Manas Somsak Specialist
Approved by (Mr.Pheraphat Tuenjit)
Manager, Division of Calibration Laboratory
Responsible for the Technical Management Team
Date of Issue: 26 May 2025

The uncertainties are for a confidence probability of approximately 95 %.

This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.

F-CE-012 Revision: 01 Date: 20-04-45



Calibration Report

Certificate No.: 2503097-002-01
Equipment: CHAMBER (Hot Air Oven)
Model: UM 400 **Serial No.:** B499.1400
Resolution: 1 °C **ID No.:** N/A
Manufacturer: MEMMERT
Date of Calibration: 23 May 2025 **Page 2 of 3**

Location: Laboratory, SECOT CO., LTD.
Environment Condition: Ambient Temperature (30.9 ± 1) °C
Relative Humidity (56.0 ± 3) %
Line Voltage (224.9 ± 1) Volt

Condition of this results of Calibration:

- This Instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
- The temperature scale used was based on ITS - 90.
- All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY59002902	2502797-002-01	3 May 2026	NATIONAL FOOD INSTITUTE
	RTD	CH#201-209/ RTD#201-209			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated Item : Good

UUC Description :

Time of Record : 1 Hour 9 Minute At 150 °C
Fresh air Damper : ☒ Open Position ☐ Close Fan ☒ Not Available

- Result of Calibration : ☒ Without adjustment ☐ After adjustment

F-CE-012 Revision: 01 Date: 20-04-45



Calibration Report

Certificate No.: 2503097-002-01
Equipment: CHAMBER (Hot Air Oven)
Model: UM 400 Serial No.: B499.1400
Resolution: 1 °C ID No.: N/A
Manufacturer: MEMMERT

Date of Calibration: 23 May 2025

Calibration point: 150 °C

Calibration result:

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (V)
MIN	30.6	52.6	223.5
MAX	31.3	59.4	226.2

Table 1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
150	150.07	150.68	149.82	150.63	148.76	149.47	149.36	148.79	149.64	1.3

Table 2 : Reporting of Characterization Result

UUC* Setting (°C)	UUC* Reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
As Mark 150	176	176	176	0.89	1.0	3.5

Note: The quoted uncertainty include * Stability * and * Loading effect (20% of Temp Uniformity) *

UUC* = Unit Under Calibration

Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.

Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.

Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.

The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k=2, providing a level of confidence of approximately 95 %.

----- End -----



Bangkok High Lab Co., Ltd.
4/176 Soi Ladplakao 66, Ladplakao Rd., Anusawari, Bangkok, Bangkok 10220
Tel: (662) 971-5800 Fax: (662) 971-5300
Website: www.bangkokhighlab.com E-mail: info@bangkokhighlab.com



CERTIFICATE OF CALIBRATION

Certificate No : S2024/033

Page : 1/5

Order No : 010/2024

Customer : SECOT COMPANY LIMITED
Address : 239 Rimklongprapa Road, Bangsue, Bangkok 10800, Thailand
Instrument : UV/VIS spectrophotometer
Manufacture : Thermo Scientific
Model : Genesys 150 UV-VIS
Serial Number : 9A5Y332022
Environment : Temperature (25.1 - 24.8) °C
Humidity (52 - 55) %RH
Received Date : February 20, 2024
Calibration Date : February 20, 2024
Issued Date : February 22, 2024
Calibrate Status : No Adjustment
Calibration Area : Customer area
Roomname : Laboratory Room of SECOT COMPANY LIMITED

Calibrated By : P. Pacharapol Kwanbang
(Mr. Pacharapol Kwanbang)
Calibration Engineer

Approved By : Teerasak Auiphat
(Mr. Teerasak Auiphat)
Authorized signatory

This calibration certificate shall not be reproduced other than in full except with the prior written approval of the Bangkok High Lab Co., Ltd.

Effective Date: 08/05/2023

F-SER-030 Rev.25



Bangkok High Lab Co., Ltd.
4/176 Soi Ladplakao 66, Ladplakao Rd., Anusawari, Bangkok, Bangkok 10220
Tel: (662) 971-5800 Fax: (662) 971-5300
Website: www.bangkokhighlab.com E-mail: info@bangkokhighlab.com



Certificate No : S2024/033

Page : 2/5

1. Photometric Accuracy

CRMs: Neutral Density Glass Filters

CRMs Serial Number: 10563

Traceability: Traceable to NIST, U.S.A. through Neutral density filters NIST SRM 930e & 1930, Double Aperture method through Sigma certificate report no.113594

Spectral slit width : 2.00 nm

1.1 Reading scale at 420.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5604	0.559	0.0014	0.0044
1.0723	1.073	-0.0007	0.0038
2.1753	2.179	-0.0037	0.0084

1.2 Reading scale at 440.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5503	0.548	0.0023	0.0040
1.0467	1.047	-0.0003	0.0040
2.1117	2.114	-0.0023	0.0084

1.3 Reading scale at 465.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.4998	0.498	0.0016	0.0034
0.9649	0.963	0.0019	0.0040
1.9546	1.966	-0.0014	0.0080

1.4 Reading scale at 546.1 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5136	0.511	0.0028	0.0028
0.9765	0.976	0.0005	0.0028
1.9848	1.984	0.0008	0.0084



Bangkok High Lab Co., Ltd.
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Tel: (662) 971-5800 Fax: (662) 971-5300
Website: www.bangkokhighlab.com E-mail: info@bangkokhighlab.com



Certificate No : S2024/033

Page : 3/5

1.5 Reading scale at 590.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5424	0.540	0.0024	0.0029
1.0130	1.011	0.0020	0.0029
2.0238	2.021	0.0028	0.0061

1.6 Reading scale at 635.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5265	0.524	0.0025	0.0030
0.9667	0.963	0.0037	0.0031
1.9145	1.910	0.0045	0.0082

2. Photometric Accuracy

CRMs: Potassium Dichromate in Perchloric acid

CRMs Serial Number: 109986

Blank Serial Number: 110516

Traceability: Traceable to NIST, U.S.A. through crystalline potassium dichromate NIST SRM 935a through Sigma certificate report no.113598

Spectral slit width : 2.00 nm


Wavelength (nm)	Certificate (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
235	0.0000	0.000	0.0000	0.0050
	0.7428	0.738	0.0048	0.0056
267	0.0000	0.000	0.0000	0.0050
	0.8505	0.858	0.0045	0.0055
313	0.0000	0.000	0.0000	0.0050
	0.2885	0.288	0.0005	0.0054
350	0.0000	0.000	0.0000	0.0050
	0.8376	0.835	0.0028	0.0058

Effective Date: 08/05/2023

F-SER-030 Rev.25

Effective Date: 08/05/2023

F-SER-030 Rev.25




Bangkok High Lab Co.,Ltd.

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NSO-TS1-715 17025

CALIBRATION 0386

Certificate No : S2024/033

Page : 4/5

3. Wavelength Accuracy

Spectral slit width : 2.00 nm

3.1 CRMs: Holmium Glass Filter

CRMs Serial Number: 10763

Traceability: Traceable to NIST Holmium oxide filter NIST SRM 2034, through Stama certificate report no. 113607

Filter STDs (nm)	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
241.74	241.301	0.439	0.12
279.44	279.243	0.197	0.12
287.98	287.555	0.425	0.12
334.10	333.778	0.322	0.12
361.00	360.913	0.087	0.12
418.81	418.457	0.153	0.12
453.63	453.543	0.087	0.12
480.05	459.911	0.139	0.12
536.66	536.327	0.333	0.12
637.98	637.449	0.531	0.12

3.2 CRMs: Didymium Glass Filter


CRMs Serial Number: 10764

Traceability: Traceable to NIST Didymium filter NIST SRM 2034, through Stama certificate report no. 113608

Filter STDs (nm)	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
585.29	584.949	0.341	0.12
684.49	683.901	0.589	0.12
740.18	739.846	0.534	0.12
748.48	747.844	0.635	0.12
807.03	806.832	0.198	0.12
879.27	878.823	0.347	0.12

Effective Date: 08/05/2023

F-SER-030 Rev.26




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CALIBRATION 0386

Certificate No : S2024/033

Page : 5/5

4. *Stray Light

CRMs: Potassium Chloride aqueous solution

CRMs Serial Number: 14912

Traceability: Traceable to NIST, U.S.A. potassium chloride NIST SRM2032, through Stama certificate report no.113597

Blank Serial Number: 14888

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate	Average Measured
201.13	>2A	2.0170
201.13	<1%T	0.9818

5. *Spectral Resolution

CRMs: Toluene in Hexane

CRMs Serial Number: 14812

Traceability: Traceable to toluene in hexane NIST SRM2034,through Stama certificate report no. 113598

Blank Serial Number: 14803

Spectral slit width (nm)	Abs Ratio
0.5	#N/A
1.0	#N/A
1.5	#N/A
2.0	1.401
3.0	#N/A

Note : * "Not TISI Accredited" in this certificate have been included for completeness

Remark: 1. Calibrate Method

1.1 Photometric and Wavelength accuracy: In-house method W-SER-001 based on ASTM E925-02 and ASTM E275-01

1.2 Stray Light: Measuring the CRMs in both absorbance and transmittance unit at wavelength 201.23 nm. Base on European Pharmacopoeia V.5 19.3 1984

1.3 Spectral resolution: Measuring the CRMs. The maximum absorbance values were read at closest to 268.7nm and the minimum absorbance values were read at closest 267.0 nm. Refer to European Pharmacopoeia V.5 19.3 1984

2. NA = not available.

3. Uncertainty of Measurement: The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%.


4. This result of calibration was found accurate as shown on date and place of calibration only.

5. This report will certify of calibrated equipment only.

- End of Report -

Effective Date: 08/05/2023

F-SER-030 Rev.26




Bangkok High Lab Co.,Ltd.

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NSO-TS1-715 17025

CALIBRATION 0386

Certificate No : S2025/025

Page : 1/5

Order No : 010/2025

CUSTOMER : SECOT COMPANY LIMITED

Address : 239 Rimkiongprapa Road, Bangsue, Bangkok 10800, Thailand

Instrument : UV/VIS spectrophotometer

Manufacture : Thermo Scientific

Model : GENESYS 150

Serial Number : 9A5Y332022

Environment : Temperature (25.4 - 25.3) °C

Humidity (57 - 52) %RH

Received Date : February 19, 2025

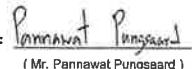
Calibration Date : February 19, 2025

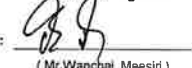
Issued Date : February 28, 2025

Calibrate Status : No Adjustment

Calibration Area : Customer area

Roomname : Laboratory Room of SECOT COMPANY LIMITED


Calibrated By : 
(Mr. Pannawat Pungsard)
Calibration Engineer

Approved By : 
(Mr. Wanchai Meesiri)
Manager

This calibration certificate shall not be reproduced other than in full except with the prior written approval of the Bangkok High Lab Co.,Ltd.

Effective Date: 01/03/2024

F-SER-026 Rev.27




Bangkok High Lab Co.,Ltd.

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NSO-TS1-715 17025

CALIBRATION 0386

Certificate No : S2025/025

Page : 2/5

1. Photometric Accuracy

CRMs: Neutral Density Glass Filters

CRMs Serial Number: A404

Traceability: Traceable to NIST, U.S.A. through Neutral density filters NIST SRM 930e & 1930, Double Aperture method through Stama certificate report no. 9119762

Spectral slit width : 2.00 nm

1.1 Reading scale at 420.0 nm

Filter STDs (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4956	0.494	0.0016	0.0044
0.9626	0.963	-0.0004	0.0038
2.0348	2.038	-0.0032	0.0065

1.2 Reading scale at 440.0 nm

Filter STDs (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4855	0.484	0.0015	0.0040
0.9425	0.942	0.0005	0.0040
1.9648	1.967	-0.0022	0.0065

1.3 Reading scale at 465.0 nm

Filter STDs (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4518	0.450	0.0018	0.0036
0.8786	0.876	0.0006	0.0040
1.8406	1.842	-0.0014	0.0060

1.4 Reading scale at 548.1 nm

Filter STDs (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4698	0.468	0.0018	0.0036
0.9078	0.907	0.0008	0.0036
1.8745	1.873	0.0015	0.0065

Effective Date: 01/03/2024

F-SER-026 Rev.27



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NIST-TIS-TIS 17025
CALIBRATION 0386

Certificate No : S2025/025
Page : 3/5

1.5 Reading scale at 590.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4690	0.468	0.0010	0.0036
0.8457	0.844	0.0017	0.0036
1.9004	1.899	0.0014	0.0065

1.6 Reading scale at 635.0 nm

Filter STDs (Abs) Certificate	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0036
0.4634	0.462	0.0014	0.0036
0.8986	0.898	0.0006	0.0036
1.7603	1.779	0.0013	0.0062

2. Photometric Accuracy

CRMs: Potassium Dichromate in Perchloric acid

CRMs Serial Number: 15066

Blank Serial Number: 15178

Traceability: Traceable to NIST, U.S.A. through crystalline potassium dichromate NIST SRM 935a through Stama certificate report no. 127613

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate (Abs)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
235	0.0000	0.000	0.0000	0.0050
	0.7332	0.732	0.0012	0.0056
257	0.0000	0.000	0.0000	0.0050
	0.8510	0.851	0.0000	0.0058
313	0.0000	0.000	0.0000	0.0050
	0.2861	0.286	0.0001	0.0057
350	0.0000	0.000	0.0000	0.0050
	0.6316	0.632	-0.0004	0.0061

Effective Date: 01/03/2024

F-SER-026 Rev.27



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NIST-TIS-TIS 17025
CALIBRATION 0386

Certificate No : S2025/025
Page : 4/5

3. Wavelength Accuracy

Spectral slit width : 2.00 nm

3.1 CRMs: Holmium Glass Filter

CRMs Serial Number: W184/H

Traceability Traceable to NIST Holmium oxide filter NIST SRM 2034, through Stama certificate report no. 9119741

Filter STDs (nm) Certificate	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
241.74	241.37	0.37	0.12
279.44	279.47	-0.03	0.12
287.98	287.80	0.18	0.12
334.10	334.10	0.00	0.12
361.00	361.34	-0.34	0.12
418.61	418.69	-0.28	0.12
453.63	453.71	-0.08	0.12
460.05	460.13	-0.08	0.12
536.86	536.40	0.26	0.12
637.86	637.64	0.34	0.12

3.2 CRMs: Didymium Glass Filter

CRMs Serial Number: W184/D

Traceability Traceable to NIST Holmium oxide filter NIST SRM 2034, through Stama certificate report no. 9119742

Filter STDs (nm) Certificate	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
585.29	585.37	-0.08	0.12
684.49	684.76	-0.27	0.12
740.18	740.40	-0.22	0.12
748.48	748.41	0.07	0.12
807.03	807.43	-0.40	0.12
879.27	879.33	-0.06	0.12

Effective Date: 01/03/2024

F-SER-026 Rev.27



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NIST-TIS-TIS 17025
CALIBRATION 0386

Certificate No : S2025/025
Page : 5/5

4. *Stray Light

CRMs: Potassium Chloride aqueous solution

CRMs Serial Number: 5459

Blank Serial Number: 8745

Traceability Traceable to NIST, U.S.A. potassium chloride NIST SRM2032, through Stama certificate report no. 127614

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate	Average Measured
201.55	>2A	2.091
201.55	<1%T	0.891

5. *Spectral Resolution

CRMs: Toluene in Hexane

CRMs Serial Number: 8557

Blank Serial Number: 8746

Traceability Traceable to toluene in hexane NIST SRM2034, through Stama certificate report no. 127615

Spectral slit width (nm)	Abs Ratio
0.5	#N/A
1.0	#N/A
1.5	#N/A
2.0	1.327
3.0	#N/A

Note : * "Not TISI Accredited" in this certificate have been included for completeness

Remarks:

Calibrate Method

1.1 Photometric and Wavelength accuracy: In-house method W-SER-001 based on ASTM E925-02 and ASTM E275-01

1.2 Stray light: Measuring the CRMs in both absorbance and transmittance unit at wavelength 201.23 nm. Base on

European Pharmacopoeia V.6.19.3 1984

1.3 Spectral resolution: Measuring the CRMs. The maximum absorbance values were read at closest to 268.7 nm and the minimum absorbance values were read at closest 287.0 nm. Refer to European Pharmacopoeia V.6.19.3 1984

2. N/A = not available.

3. Uncertainty of Measurement: The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%.

4. This result of calibration was found accurate as shown on date and place of calibration only.

5. This report will certify of calibrated equipment only.

- End of Report -

Effective Date: 01/03/2024

F-SER-026 Rev.27



Bangkok High Lab Co., Ltd.
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Website: www.bangkokhighlab.com E-mail: info@bangkokhighlab.com



NIST-TIS-TIS 17025
CALIBRATION 0386

CERTIFICATE OF CALIBRATION

Certificate No : S2024/033

Page : 1/5

Order No : 010/2024

Customer : SECOT COMPANY LIMITED
Address : 239 Rimklongprapa Road, Bangsue, Bangkok 10800, Thailand
Instrument : UV/VIS spectrophotometer
Manufacture : Thermo Scientific
Model : Genesys 150 UV-VIS
Serial Number : 9A5Y332022
Environment : Temperature (25.1 - 24.8) °C
Humidity (52 - 55) %RH
Received Date : February 20, 2024
Calibration Date : February 20, 2024
Issued Date : February 22, 2024
Calibrate Status : No Adjustment
Calibration Area : Customer area
Roomname : Laboratory Room of SECOT COMPANY LIMITED

Calibrated By :
(Mr. Pacharapol Kwanbang)
Calibration Engineer

Approved By :
(Mr. Teerasak Aulphat)
Authorized signatory

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Effective Date: 08/05/2023

F-SER-030 Rev.26



Certificate No : S2024/033
Page : 2/5

1. Photometric Accuracy

CRMs: Neutral Density Glass Filters CRM's Serial Number: 10563
Traceability: Traceable to NIST, U.S.A. through Neutral density filters NIST SRM 930a & 1930, Double Aperture method through Stama certificate report no.113594

Spectral slit width : 2.00 nm

1.1 Reading scale at 420.0 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5604	0.559	0.0014	0.0044
1.0723	1.073	-0.0007	0.0038
2.1753	2.179	-0.0037	0.0064

1.2 Reading scale at 440.0 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5503	0.548	0.0023	0.0040
1.0457	1.047	-0.0003	0.0040
2.1117	2.114	-0.0023	0.0064

1.3 Reading scale at 465.0 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.4996	0.498	0.0016	0.0034
0.9849	0.983	0.0019	0.0040
1.9646	1.968	-0.0014	0.0060

1.4 Reading scale at 546.1 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5136	0.511	0.0026	0.0028
0.9765	0.976	0.0005	0.0028
1.9546	1.954	0.0008	0.0064

Effective Date: 08/05/2023

F-SER-030 Rev 26



Certificate No : S2024/033
Page : 3/5

1.5 Reading scale at 590.0 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5424	0.540	0.0024	0.0029
1.0130	1.011	0.0020	0.0029
2.0236	2.021	0.0028	0.0061

1.6 Reading scale at 635.0 nm

Filter STDs (Abs Certificate)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
0.0000	0.000	0.0000	0.0028
0.5265	0.524	0.0025	0.0030
0.9667	0.963	0.0037	0.0031
1.9145	1.910	0.0045	0.0062

2. Photometric Accuracy

CRMs: Potassium Dichromate in Perchloric acid CRM's Serial Number: 109956 Blank Serial Number: 110516
Traceability: Traceable to NIST, U.S.A. through crystalline potassium dichromate NIST SRM 635a through Stama certificate report no.113596

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate (A)	Average Measured Value (A)	Correction (A)	Uncertainty ± (A)
235	0.0000	0.000	0.0000	0.0050
	0.7428	0.738	0.0048	0.0056
257	0.0000	0.000	0.0000	0.0050
	0.8605	0.856	0.0045	0.0055
313	0.0000	0.000	0.0000	0.0050
	0.2885	0.288	0.0005	0.0054
350	0.0000	0.000	0.0000	0.0050
	0.6376	0.635	0.0026	0.0056

Effective Date: 08/05/2023

F-SER-030 Rev 26



Certificate No : S2024/033
Page : 4/5

3. Wavelength Accuracy

Spectral slit width : 2.00 nm

3.1 CRMs: Holmium Glass Filter

CRM's Serial Number: 10763
Traceability: Traceable to NIST Holmium oxide filter NIST SRM 2034, through Stama certificate report no. 113807

Filter STDs (nm Certificate)	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
241.74	241.301	0.439	0.12
279.44	279.243	0.197	0.12
287.98	287.555	0.425	0.12
334.10	333.778	0.322	0.12
361.00	360.913	0.087	0.12
418.61	418.457	0.153	0.12
453.83	453.543	0.087	0.12
460.05	459.811	0.139	0.12
536.68	536.327	0.333	0.12
637.98	637.449	0.531	0.12

3.2 CRMs: Didymium Glass Filter

CRM's Serial Number: 10764
Traceability: Traceable to NIST Didymium filter NIST SRM 2034, through Stama certificate report no. 113608

Filter STDs (nm Certificate)	Average Measured Value (nm)	Correction (nm)	Uncertainty ± (nm)
585.29	584.949	0.341	0.12
884.49	883.901	0.589	0.12
740.16	739.646	0.534	0.12
748.48	747.844	0.638	0.12
807.03	806.832	0.198	0.12
879.27	878.923	0.347	0.12

Effective Date: 08/05/2023

F-SER-030 Rev 26



Certificate No : S2024/033
Page : 5/5

4. *Stray Light

CRMs: Potassium Chloride aqueous solution CRM's Serial Number: 14912 Blank Serial Number: 14958
Traceability: Traceable to NIST, U.S.A. potassium chloride NIST SRM2032, through Stama certificate report no.113597

Spectral slit width : 2.00 nm

Wavelength (nm)	Certificate	Average Measured
201.13	>2A	2.0170
201.13	<1%T	0.9918

5. *Spectral Resolution

CRMs: Toluene in Hexane CRM's Serial Number: 14612 Blank Serial Number: 14693
Traceability: Traceable to toluene in hexane NIST SRM2034, through Stama certificate report no. 113598

Spectral slit width (nm)	Abs Ratio
0.5	#N/A
1.0	#N/A
1.5	#N/A
2.0	1.401
3.0	#N/A

Note : * "Not TISI Accredited" In this certificate have been included for completeness

Remark:

1. Calibrate Method
- 1.1 Photometric and Wavelength accuracy: In-house method W-SER-001 based on ASTM E925-02 and ASTM E275-01
- 1.2 Stray Light: Measuring the CRMs in both absorbance and transmittance unit at wavelength 201.23 nm. Base on European Pharmacopoeia V.6.19.3 1984
- 1.3 Spectral resolution: Measuring the CRMs. The maximum absorbance values were read at closest to 268.7nm and the minimum absorbance values were read at closest 267.0 nm. Refer to European Pharmacopoeia V.6.19.3 1984
2. N/A = not available.
3. Uncertainty of Measurement: The reported uncertainty of measurement was based on standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
4. This result of calibration was found accurate as shown on date and place of calibration only.
5. This report will certify of calibrated equipment only.

- End of Report -

Effective Date: 08/05/2023


F-SER-030 Rev 26

Calibration Certificate

Certificate No.: 2403705-001-01
Client name: SECOT CO., LTD.
Address: 239 Rimklongprapa Road,
Bangsue, Bangsue, Bangkok 10600

Page 1 of 3

Equipment: CHAMBER (Incubator)
Manufacturer: MEMMERT
Model: ICP 400
Serial No.: K406.0004
ID No.: N/A
Order No.: 2403705
Operation No.: 2403705-001
Date of Receipt: 18 July 2024
Date of Calibration: 18 July 2024

Calibrated by Mr. Taveesak Sallee
Scientist
Approved by 
(Mr. Pheraphat Tuanjit)
Manager, Division of Calibration Laboratory
Responsible for the Technical Management Team
Date of Issue: 24 July 2024

The uncertainties are for a confidence probability of approximately 95 %.
This Certificate is issued in accordance with the conditions of accreditation granted by the Thai Laboratory Accreditation scheme which has assessed the measurement capability of the laboratory and its traceability to recognized national standards and to the units of measurement realized at the corresponding national standards laboratory. This certificate may not be reproduced other than in full except with the prior written approval of the National Food Institute.
F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2403705-001-01
Equipment: CHAMBER (Incubator)
Model: ICP 400
Resolution: 0.1 °C
Manufacturer: MEMMERT
Serial No.: K406.0004
ID No.: N/A

Date of Calibration: 18 July 2024

Page 2 of 3

Location: Laboratory, SECOT CO., LTD.
Environment Condition: Ambient Temperature (31.0 ± 1) °C
Relative Humidity (58 ± 1) %
Line Voltage (221 ± 1) Volt

Condition of this results of Calibration:

- This instrument was calibrated by insert 9 standard thermometer into its chamber and calibration according to W-TE-014 Based on TLAS G-20-1/02-08 (E): Guidelines for Calibration and Checks of Temperature Controlled Enclosures.
 - The temperature scale used was based on ITS - 90.
 - All data show below were final values and the initial data may be obtained upon request.

2. Reference Standard Instrument :

Instrument	Model	Serial No./ID No.	Certificate No.	Due Date	Through
Digital Thermometer with sensor	34972A	MY49018263	TE 670368-01	23 March 2025	NATIONAL FOOD INSTITUTE
	RTO	CH101-109/RTD101-109			

- This certificate is traceable to International System of Units (SI Units).
- This certificate was certified only for the instrument we calibrated.
- This result of calibration was found accurate as shown on date and place of calibration only.
- Condition of Calibrated item : Good

UUC Description :

Time of Record 1 Hour 9 Minute At 20.0 °C
Fresh air Damper - Open Position -
X Close Fan -
- Not Available

- Result of Calibration : ☒ Without adjustment ☐ After adjustment

F-CS-012 Revision: 01 Date: 20-04-65



Calibration Report

Certificate No.: 2403705-001-01
Equipment: CHAMBER (Incubator)
Model: ICP 400
Resolution: 0.1 °C
Manufacturer: MEMMERT
Serial No.: K406.0004
ID No.: N/A

Date of Calibration: 18 July 2024
Calibration point: 20.0 °C

Page 3 of 3

Calibration Condition	Temperature (°C)	Relative Humidity (%)	Line Voltage (Volt)
MIN	30.0	57	220.3
MAX	32.0	59	222.1

Table 1 : Reporting of Temperature

Calibration point (°C)	Measured Temperature (°C) @ Sensor No. (Sensor No.9 is REF)									Uncertainty ± (°C)
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	
20.0	20.10	20.18	20.21	20.26	20.29	20.20	20.21	20.13	20.22	0.27

Table 2 : Reporting of Characterization Result

UUC Setting (°C)	UUC Reading (°C)			Stability ± (°C)	Uniformity (°C)	Overall Variation (°C)
	MIN	MAX	Average			
20.0	20.0	20.0	20.0	0.13	0.12	0.40

Note The quoted uncertainty include " Stability " and " Loading effect (20% of Temp Uniformity) "
UUC = Unit Under Calibration
Stability = One-half of the greatest maximum difference of measured temperatures at any one sensors, for at least half an hour after reaching steady state.
Uniformity = The maximum difference of measured temperatures at any sensors and the measured temperature at the reference location which are observed at the same time.
Overall Variation = The difference of the maximum and minimum measured temperatures throughout observation time.
The report uncertainty of measurement was based on standard uncertainty multiplied by coverage factor k= 2, providing a level of confidence of approximately 95 %.

***** End *****

F-CS-012 Revision: 01 Date: 20-04-65



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 : EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL. 0-2717-3000 FAX. 0-2719-9484

Certificate of Testing

Cert.No.: 24TW211
Page: 1 of 2

Equipment : DO Meter
Manufacturer : Hanna
Model : HI98193
Serial No. : 06110066101
ID No. : ID.9
Received Date : 08 October 2024
Test Date : 08 October 2024
Reference : 2410-0258DN-1
Submitted by : Secot Co., Ltd.
239 Rimklongprapa Road, Bangsue,
Bangkok 10600

Laboratory Condition : Temperature (25 ± 5) °C
Humidity (50 ± 20) %
Test Procedure : In - house method : CP-CH9
by Comparison Technique with Azide Modification Method

Tested by : Walalak Sirithan
Approved by : 
Approved Signatory

() Unnophol Harachai
() Ponpan Paipim
(✓) Saithip Meangmal

Issue Date : 10 October 2024



Cert.No.: 24TW211
Page: 2 of 2

Condition of this result of calibration

1. Reference Standard Instruments :

This certification is traceable to the International System of Unit through the reference standards laboratory of Industrial Calibration Center, Technology Promotion Association (Thailand-Japan).

Instruments	Serial No.	ID No.	Certificate No.	Due Date
1. Burette	-	130BU10	23CG1172	22 Mar 2025
2. Balance	14233821	110RC001	24MM131	04 July 2025

2. Standard Material :-

Material	Manufacturer	Lot.No.	Assay
Sodium Thiosulfate 5-Hydrate AR	KEMAUS	2203162447	99.6%

Result : Dissolved Oxygen Meter Adjustment With Air 100 %
Dissolved Oxygen Probe No.: KC1N2993N

Titration Method (Azide Modification Method) (mg/L)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
6.16	8.16	0.0071

This report was certified only for the instrument we tested. It is allowable to use for study intend to use for advertising and referral purpose is prohibited. This report may not be reproduced other in full, without written approval of the laboratory

-00-



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 2: EQUIPMENT CALIBRATION AND TESTING SERVICES
534/4 PATTANAKARN ROAD SOI 18, SUANLUANG, SUANLUANG BANGKOK 10250
TEL 0-2717-3000-29 FAX 0-2719-9484



Certificate of Calibration

Cert.No.: 24CH1275
Page: 1 of 3

Equipment : pH Meter
Manufacturer : Mettler Toledo
Model : Seven2Go
Serial No. : C033160713
ID No. : ID.20
Condition As-Received: Used Item
Received Date : 06 October 2024
Calibration Date : 09 October 2024
Reference : 2410-0258DN-3
Submitted by : Secot Co., Ltd.
239 Rlmklongprapa Road,
Bangsue, Bangkok 10600

Ambient Temperature : (25 ± 2.5) °C
Relative Humidity : (50 ± 15) %
Calibration Procedure : In - house method :
- CP-CH5 by direct measurement with DC voltage standard and direct measurement with certified reference material (CRM)
- CP-CH5 by comparison with temperature standard

Calibrated by : Warakorn Lemgagtrakul

Approved by :

Saithip

Approved Signatory

() Unnophol Harachai
() Ponpan Palpin
(✓) Saithip Meangmal

Issue Date : 10 October 2024

The Uncertainties are for a confidence probability of approximately 95%

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Cert.No.: 24CH1275
Page: 2 of 3

Condition of this calibration result

1. Reference Standard Instrument

Instrument	Serial No.	ID No.	Cert. No.	Due Date
1) Document Process Calibrator	54030049	130RC116	24E2759	25 Aug 2025
2) Ref. Standard Thermometer	4982054	110RC044	24I757	14 July 2025

- This Certification is traceable to SI Through Technology Promotion Association (Thailand - Japan)

2. Certified Reference Materials

: The measurement results are traceable to SI through Hach Lange GmbH Ltd.,
Deutsche Akkreditierungsstelle, Accredited No.D-RM-15184-01-00
: The measurement results are traceable to SI through CPA chem Ltd.,
ANSI-ASQ National Accreditation Board, Accredited No. AR-1635

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	1034203	27 Sep 2026
pH 6.999	Hach Lange GmbH	C03145	28 Feb 2026
pH 8.997	CPA chem	970653	25 Apr 2025

3. This certificate is valid only to the item calibrated on date and place of calibration.

Calibration Results

Function : mV Measurement

Performing standard curve by Document Process Calibrator at pH (4,7,10)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading		Uncertainty of Measurement (±mV)	Coverage factor k
	pH	mV	mV	pH		
pH Meter S/N : C033160713	4.00	177.48	176	4.00	0.58	2.00
	7.00	0.00	0	7.00	0.58	2.00
	10.00	-177.48	-177	10.00	0.58	2.00



Cert.No.: 24CH1275
Page: 3 of 3

Calibration Results

Function : pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4,7,10)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH Measurement (±)	Coverage factor k
pH Electrode S/N : 3234329	4.008	4.01	163	0.0079	2.00
	6.999	7.00	-12	0.0085	2.00
	9.997	10.00	-183	0.0095	2.00

Function : Temperature Measurement

(*) Without adjustment

This equipment was connected with Temperature Probe;

- Model : InLab®Expert Go-ISM

- Serial No. : 3234329

Dimension of probe

- Length : 120 mm.

- Diameter : 12 mm.

- Immersion Depth : 100 mm.

Calibration Point (°C)	Standard Temperature (°C)	UUC* Reading (°C)	Error (°C)	Uncertainty of measurement (± °C)	Coverage factor k
25.0	25.003	25.1	0.097	0.13	2.00
30.0	30.002	30.1	0.098	0.13	2.00
35.0	35.002	35.2	0.198	0.13	2.00

Remark : - UUC* = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95 %.

-00-



THAI CALIBRATION SERVICES CO., LTD.

198 Moo 9 Sub Road, Portmation 5 Rd., Sampran, Bangkok 10280

Tel: 0-3439-7682-5 Fax: 0-3439-7687

www.thaicert.com Email: info@thaicert.com, info@thailab.com



CALIBRATION CERTIFICATE

Certificate No. ST-00015

Page 1 of 2

Customer: SPCOT Co., Ltd.
239 Rongklongprapa Road,
Bangkok, Bangkok 10280

Equipment: Analytical weighing scale (electronic instrument)
Manufacturer: Mettler Toledo
Model: AG205
Accuracy class: -
Capacity: 41 g, 310 g
Resolution: 0.0001 g, 0.001 g
Serial No.: 11723974
ID No.: -
Place of calibration: LAB

Order No.: 01172397
Ambient temperature: 23.5 ± 0.5 °C
Relative humidity: 69.8 ± 10.0 %
Received date: 21-Apr-2025
Date of calibration: 23-Apr-2025
Date of issue: 24-Apr-2025
Condition of the balance: Good working conditions

Calibration method

This program was calibrated according to the JIS S 9001 standard (ISO 9001:2015).

Condition of reference standard weight

Instrument	Standard value	Serial No.	Certificate No.	Expiry date	Document No.
Standard weight	100.0000 g	1275111111	02116000	1 Jan 2025	001

Traceability of the reference standard weight

This certificate is based on the National Metrological Institute of Thailand (NIMT) Calibration Service Co., Ltd. (NIST 400007).

Approved by: (Signature)

Calibrated By: Terawat Intanon
Technician

Approved Signatory:

(Signature)
Somchai Wongkarn

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except with the prior written approval of the head of TCS calibration laboratory.

TCS Calibration Services Co., Ltd.

No. 32971



THAI CALIBRATION SERVICES CO., LTD.

198 Moo 9 Sub Road, Portmation 5 Rd., Sampran, Bangkok 10280

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CALIBRATION CERTIFICATE

Certificate No. ST-00015

Page 2 of 2

The repeatability of indication

Repeatability	Standard deviation	Maximum deviation	Minimum deviation
1.0	0.0001	0.0001	0.0001
2.0	0.0001	0.0001	0.0001
3.0	0.0001	0.0001	0.0001

The effect of eccentric application of a load on the indication (test load: 100 g)

Position	Indication Reading
Point 1	100.0000
Point 2	100.0000
Point 3	100.0000
Point 4	100.0000
Point 5	100.0000



The error of indication

Nominal Value	Value of reference weight	Indication Reading	Accuracy	Uncertainty	U
1.0000	0.0001	0.0000	0.0000	0.0001	0.01
0.5	0.0001	0.0000	0.0000	0.0001	0.01
1	0.0001	0.0000	0.0000	0.0001	0.01
10	0.0001	0.0000	0.0000	0.0001	0.01
20	0.0001	0.0000	0.0000	0.0001	0.01
40	0.0001	0.0000	0.0000	0.0001	0.01
60	0.0001	0.0000	0.0000	0.0001	0.01
80	0.0001	0.0000	0.0000	0.0001	0.01
100	0.0001	0.0000	0.0000	0.0001	0.01
120	0.0001	0.0000	0.0000	0.0001	0.01
140	0.0001	0.0000	0.0000	0.0001	0.01
160	0.0001	0.0000	0.0000	0.0001	0.01
180	0.0001	0.0000	0.0000	0.0001	0.01
200	0.0001	0.0000	0.0000	0.0001	0.01

Uncertainty of measurement

The reported expanded uncertainty of measurement is based on the standard uncertainty of measurement multiplied by a coverage factor of 2, which provides a level of confidence of approximately 95%.

This report will certify of the calibrated equipment only.

-End-

TCS Calibration Services Co., Ltd.

No. 32972



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Sol 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-68/0279

MTC.No.23-68/0279-02

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature: DRYCAL

Manufacturer: Mesa Labs

Serial No.: 114069

Model: Defender 520-H

Scale range: 300 ml/min to 30,000 ml/min

Subdivision: (0.0001, 0.001) L/min

Submitted by: SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,
Bangkok 10800, Thailand.

Received date: 13 February 2025 Condition of measured item: Normal

Calibration date: 25 February 2025

Standard:

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 0811/67	3-Jul-26	TISTR
Molbox/Pressure Transducer/UpStream	MP-0076-23	2-Apr-25	NIMT
Primary Flow Calibrator S/N 119216	NW-0035-23	31-Mar-25	NIMT

Calibrated by: (Signature)
(Mr. Terasak Panna)

Approved by: (Signature)
(Mr. Terasak Panna)

Director

Mechanical Engineering Standards Laboratory

Ref. 2013268021300656002

Issued Date 28 February 2025

The results relate only to the items tested/calibrated or value assigned.

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Tel. (66) 0 2579 1121-30 ext. 5219, 5225, 5217
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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Sol 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-68/0279

2/2

MTC.No.23-68/0279-02

Calibration point: (1.5, 5.0, 10, 15, 25) l/min

Ambient condition: Temperature (23 ± 3) °C, Relative humidity (55 ± 15) %

Atmospheric pressure (1010 ± 13) hPa

Calibration method: The flowmeter (UUC) was calibrated by comparison method with standard flowmeter according to CP-370.01.

The reported value is the value that converted to value at reference condition within pressure and temperature of the actual gas entering the UUC

Measurement data:

UUC Value	Standard Value	Temperature	Pressure	Deviation	Uncertainty
(L/min)	(L/min)	(°C)	(hPa)	(%)	(%)
1.5010	1.4862	24.354	1011.40	+0.99	0.91
5.0202	4.9882	24.364	1013.95	+0.64	0.89
9.9989	9.9228	24.319	1020.22	+0.77	0.89
15.033	14.819	24.342	1030.37	+1.44	0.89
25.136	24.152	24.331	1061.30	+4.08	0.89

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, which provides a level of confidence of approximately 95%.

The end of calibration certificate.

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THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Sol 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-68/0279

MTC.No.23-68/0279-01

Number of page(s) 2

CALIBRATION CERTIFICATE

Nomenclature : DRYCAL

Manufacturer : Mesa Labs

Serial No.: 160100

Model : Defender 520-L

Scale range : 5 ml/min to 500 ml/min

Subdivision : (0.001, 0.01) ml/min

Submitted by : SECOT CO.,LTD.

239, Rimklongprapa Road, Bangsue,

Bangkok 10800, Thailand.

Received date : 13 February 2025

Condition of measured item : Normal

Calibration date : 24 February 2025

Standard :

Standard	Certificate No.	Date due	Traceability
RTD Thermometer	PSL-T 0611/67	3-Jul-26	TISTR
Manifold/Pressure Transducer/Upstream	MP-0076-23	2-Apr-25	NIMT
Primary Flow Calibrator S/N 117982	MW-0034-23	11-Jun-25	NIMT

Calibrated by : Terasak Panna
(Mr.Terasak Panna)

Approved by :
(Ms.Kirana Luangthong)
Director
Mechanical Engineering Standards Laboratory
Ref. 2013268021300656001
Issued Date: 28 February 2025

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Certificate of System Qualification

GC-OQ

System ID: US10943001
Organization Name: Secot Co.,Ltd. (Head Office)
Organization Location: 239 Rimklongprapa Rd., Bangsue, Bangkok 10800

Date: April 24, 2025 10:16:55 AM
EQP Name: AgilentRecommended

EQP Revision: GC.02.55
Overall Qualification Status: Pass

CDS Logon Verification - GC

Logon: No logon credentials required for customer CDS

System Inspection and Basic Safety and Operation

Name: 7890
Setpoint Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status
Pass

Inlet Pressure Decay

Name: 7890
Front SSL
Setpoint Status: Pass
Pressure: 25.0 psi
Pressure Change: -0.1 psi /5 minutes
Agilent Recommended: >= -2.0 and <= 0.5

Overall Inlet Pressure Decay Test Status
Pass

Date: April 24, 2025 10:16:55 AM
System ID: US10943001



THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH (TISTR)

Mechanical Engineering Standards Laboratory Sol 1, Bangpoo Industrial Estate, Muang, Samutprakan 10280, Thailand.

Request No.23-68/0279

2/2

MTC.No.23-68/0279-01

Calibration point : (20, 50, 100, 200, 400) ml/min

Ambient condition : Temperature (23 ± 3) °C , Relative humidity (55 ± 15) %

Atmospheric pressure (1010±13) hPa

Calibration method : The flowmeter (UUC) was calibrated by comparison method with standard flowmeter according to CP-370.01.

The reported value is the value that converted to value at reference condition within pressure and temperature of the actual gas entering the UUC

Measurement data :

UUC Value (ml/min)	Standard Value (ml/min)	Temperature (°C)	Pressure (hPa)	Deviation (%)	Uncertainty (%)
20.473*	20.340	24.275	1011.42	+0.65	0.94
49.952	50.732	24.057	1011.52	-1.54	0.95
99.449	99.622	24.102	1011.62	-0.17	0.93
200.34	199.94	24.133	1011.77	+0.20	0.93
401.89	397.98	24.140	1012.07	+0.98	0.93

The reported expanded uncertainties are based on standard uncertainties multiplied by a coverage factor $k=2$, which provides a level of confidence of approximately 95%.

* : The calibration point is not the scope of accreditation.

The end of calibration certificate.

The results relate only to the items tested/calibrated or value assigned.

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FM.BL.MTC.002 Rev.5

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Agilent CrossLab Compliance Services

Inlet Pressure Accuracy

Name: 7890
Front SSL
Setpoint Status: Pass
Setpoint Actual
Inlet Pressure: 25.0 psi 24.9 psi
Accuracy: 0.1 psi
Agilent Recommended: <= 1.2

Overall Inlet Pressure Accuracy Test Status

Pass

Inlet Pressure Decay

Name: 7890
Back SSL
Setpoint Status: Pass
Pressure: 25.0 psi
Pressure Change: -0.1 psi /5 minutes
Agilent Recommended: >= -2.0 and <= 0.5

Overall Inlet Pressure Decay Test Status

Pass

Inlet Pressure Accuracy

Name: 7890
Back SSL
Setpoint Status: Pass
Setpoint Actual
Inlet Pressure: 25.0 psi 24.9 psi
Accuracy: 0.1 psi
Agilent Recommended: <= 1.2

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Overall Inlet Pressure Accuracy Test Status
Pass

Detector Flow Accuracy

Name: 7890
Front FID

Setpoint Status: Pass

Flow Type: Fuel

Setpoint: 30.0 mL/min Measured Flow: 29.9 mL/min

Accuracy: 0.1 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (3.0 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Setpoint Status: Pass

Flow Type: Oxidizer

Setpoint: 400.0 mL/min Measured Flow: 399.8 mL/min

Accuracy: 0.2 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (40.0 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Setpoint Status: Pass

Flow Type: Makeup

Setpoint: 25.0 mL/min Measured Flow: 24.8 mL/min

Accuracy: 0.2 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (2.5 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Overall Detector Flow Accuracy Test Status
Pass

Detector Flow Accuracy

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Setpoint Status: Pass

Zone: Oven

Setpoint/Actual

Temperature: 230.0 °C

Accuracy: 0.0 °C

Agilent Recommended: ≥ -1.0 % setpoint in K (-5.0 °C)
≤ 1.0 % setpoint in K (5.0 °C)

Setpoint Status: Pass

Zone: Oven

Setpoint/Actual

Temperature: 100.0 °C

Accuracy: 0.0 °C

Agilent Recommended: ≥ -1.0 % setpoint in K (-3.7 °C)
≤ 1.0 % setpoint in K (3.7 °C)

Overall GC Oven Temperature Accuracy Test Status
Pass

GC Oven Temperature Stability

Name: 7890

Setpoint Status: Pass

Setpoint/Average

Temperature: 100.0 °C 100.0333 °C

Stability: 0.1 °C

Agilent Recommended: ≤ 0.5

Overall GC Oven Temperature Stability Test Status
Pass

Scouting Run

Tested Combination1 Front SSL / Front FID

Injection Tower

Name: 7693A

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Name: 7890
Back FPD

Filter: P-Mode

Setpoint Status: Pass

Flow Type: Fuel

Setpoint: 75.0 mL/min Measured Flow: 74.9 mL/min

Accuracy: 0.1 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (7.5 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Filter: P-Mode

Setpoint Status: Pass

Flow Type: Oxidizer

Setpoint: 100.0 mL/min Measured Flow: 99.8 mL/min

Accuracy: 0.2 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (10.0 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Filter: P-Mode

Setpoint Status: Pass

Flow Type: Makeup

Setpoint: 50.0 mL/min Measured Flow: 49.9 mL/min

Accuracy: 0.1 mL/min

Agilent Recommended: ≤ 10.0 % setpoint (5.0 mL/min)

Limit is percentage of setpoint or 0.5 mL/minute, whichever is largest.

Overall Detector Flow Accuracy Test Status
Pass

GC Oven Temperature Accuracy

Name: 7890

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Setpoint Status: Completed

Injection Volume on Column: 1.0 uL

Overall Scouting Run Status
Completed

Noise and Drift

Tested Combination1 Front SSL / Front FID

Name: 7890

Setpoint Status: Pass

Base Signal: 10.03 pA

ASTM Noise

Drift

Agilent Recommended: ≤ 0.10 pA/h 0.10 pA/h 2.50 pA/h

Status: Pass Pass

Overall Noise and Drift Test Status
Pass

Injection Precision

Tested Combination1 Front SSL / Front FID

Name: 7693A

Setpoint Status: Pass

Injection Volume on Column: 1.0 uL

Area RSD: 0.68 % Retention Time RSD: 0.19 %

Agilent Recommended: ≤ 3.00 % 1.00 %

Overall Injection Precision Test Status
Pass

Signal to Noise

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Tested Combination1 Front SSL / Front FID

Name: 7890

Setpoint Status: Pass
Signal to Noise: 1672441
Agilent Recommended: >= 300000

Overall Signal to Noise Test Status

Pass

Scouting Run

Tested Combination2 Back SSL / Back FPD

Name: Not applicable

Setpoint Status: Completed
Injection Volume on Column: 1.0 µL
Mode: P-Mode

Overall Scouting Run Status

Completed

Noise and Drift

Tested Combination2 Back SSL / Back FPD

Name: 7890

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Setpoint Status: Pass
Mode: P-Mode

Base Signal: 29 150 pA

ASTM Noise
DU
1.79
Agilent Recommended: <= 5.00
Status: Pass

Drift
DU/h
0.27
Agilent Recommended: <= 5.00
Status: Pass

Overall Noise and Drift Test Status

Pass

NOTE: This test's 0 comment(s) and 1 deviation(s) are available in the Attachments section.

Signal to Noise

Tested Combination2 Back SSL / Back FPD

Name: Manual Injection

Name: 7890

Mode: P-Mode

Setpoint Status: Pass
Signal to Noise: 4617
Agilent Recommended: >= 1000

Overall Signal to Noise Test Status

Pass

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Instrument Details

Purpose
This section describes the as found system configuration.

Details

System

System ID: US10943001
Manufacturer: Agilent Technologies
Name: 7890
Flow Data Input: Manual Data
Temperature Data Input: Manual Data or Other Data Logging

Tested Combination1

Injection Technique: Injection Tower
Inlet: Front
Detector: Front
LTM Included?: No

Tested Combination2

Injection Technique: Manual Injection
Inlet: Back
Detector: Back
LTM Included?: No

Sampler 1

Manufacturer: Agilent Technologies
Type: Injection Tower
Name: 7693A
Model Number: G4513A
Serial Number: CN10110080
Firmware Revision: A.10.06
Usage: Sample Injection
Location: Front
Syringe Volume (µL): 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Sampler 2

Manufacturer: Agilent Technologies
Type: Manual Injection
Usage: Sample Injection
Syringe Volume (µL): 10

Sampler 3

Manufacturer: Agilent Technologies
Type: Tray
Name: 7693A
Model Number: G4514A
Serial Number: CN83901235
Firmware Revision: A.10.11
Vial Heater: Not Installed

Mainframe 1

Manufacturer: Agilent Technologies
Name: 7890
Model Number: G3440A
Serial Number: US10943001
Firmware Revision: A.01.16
Oven Type: Standard

Inlet 1

Manufacturer: Agilent Technologies
Name: 7890
Type: SSL
Location: Front
Carrier Gas: Helium
Control Type: Electronic Pressure Control (EPC)
Purged Inlet: Yes

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Inlet 2	
Manufacturer	Agilent Technologies
Name	7890
Type	SSL
Location	Back
Carrier Gas	Helium
Control Type	Electronic Pressure Control (EPC)
Purged Inlet	Yes
Detector 1	
Manufacturer	Agilent Technologies
Name	7890
Type	FID
Adapter	Capillary
Control Type	Electronic Pressure Control (EPC)
Location	Front
Makeup Gas	Nitrogen
Detector 2	
Manufacturer	Agilent Technologies
Name	7890
Type	FPD
Adapter	Capillary
Control Type	Electronic Pressure Control (EPC)
Location	Back
Makeup Gas	Nitrogen
First Filter Tested	P-Mode

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Electronic Signature

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Details	
Full Name of Signer:	Nattapat Hengcharoen
Logged On User Name:	nattapat.hengcharoen@agilent.com
Signature Creation Date:	April 24, 2025
Reason for Signature:	Executed protocol and published this original version of document

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Date: April 24, 2025 10:16:55 AM
System ID: US10943001

User Name: nattapat.hengcharoen

Report Generated by Hostname: AG-SCG2350YH2

System ID: US10943001

Print Date: April 24, 2025 10:16:57 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 10:31:32 AM	Audit	Session Created	Session	Host Name: AG-SCG2350YH2, Drive Serial Number: 2A984E77
April 23, 2025 10:31:32 AM	Start	Configuration	Session	None
April 23, 2025 10:31:32 AM	Audit	Entitlement	Licensing	User is Field Engineer and does not require an unlock code
April 23, 2025 10:36:35 AM	Audit	ExpLoaded	Session	EQP details for primary technique [GC] - File path: [Protocol\Pack\GC\Config\run02.55\02.55.exp], EQP File Name: [GC.02.55.exp], EQP Name: [AgilentRecommended], Protocol Revision: [GC.02.55]
April 23, 2025 10:36:44 AM	End	Configuration	Session	None
April 23, 2025 10:38:50 AM	Start	Qualification	Session	OQ
April 23, 2025 10:38:50 AM	Start	Execution	CDS Lagon Verification - GC - 7890 - Qualitative test	None
April 23, 2025 10:42:45 AM	End	Execution	CDS Lagon Verification - GC - 7890 - Qualitative test	Run Count: 1
April 23, 2025 10:42:47 AM	Start	Execution	System Inspection and Basic Safety and Operation - 7890 - Qualitative Test - No setpoints associated	None
April 23, 2025 10:47:15 AM	End	Execution	System Inspection and Basic Safety and Operation - 7890 - Qualitative Test - No setpoints associated	Run Count: 1

Page 1 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

User Name : nattapat.hengcharoen

Report Generated by Hostname : AG-SCG2350YH2

System ID: US10943001

Print Date: April 24, 2025 10:16:57 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 10:47:16 AM	start	Execution	Inlet Pressure Decay - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	None
April 23, 2025 10:55:26 AM	End	Execution	Inlet Pressure Decay - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	Run Count: 1
April 23, 2025 10:55:27 AM	start	Execution	Inlet Pressure Accuracy - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
April 23, 2025 10:57:58 AM	End	Execution	Inlet Pressure Accuracy - Front SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count: 1
April 23, 2025 10:57:10 AM	start	Execution	Inlet Pressure Decay - Back SSL - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	None
April 23, 2025 11:04:12 AM	End	Execution	Inlet Pressure Decay - Back SSL - Pressure Controlled Inlet - S: 25.0 psi - L: >= -2.0 psi and <= 0.5 psi	Run Count: 1
April 23, 2025 11:04:13 AM	start	Execution	Inlet Pressure Accuracy - Back SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	None
April 23, 2025 11:07:06 AM	End	Execution	Inlet Pressure Accuracy - Back SSL - Pressure Controlled Inlet - S: 25.0 psi - L: <= 1.2 psi	Run Count: 1
April 23, 2025 11:07:09 AM	start	Execution	Detector Flow Accuracy - Front FID - Type: Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	None

Page 2 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

User Name: natipal.jengcharoen
Report Generated by: natipal.jengcharoen
System ID: US10943001
Print Date: April 24, 2025 10:16:55 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 11:08:42 AM	Audit	Data	Detector Flow Accuracy - Front FID - Type: Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
April 23, 2025 11:08:47 AM	End	Execution	Detector Flow Accuracy - Front FID - Type: Fuel - S: 30.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:09:49 AM	start	Execution	Detector Flow Accuracy - Front FID - Type: Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:12:35 AM	Audit	Data	Detector Flow Accuracy - Front FID - Type: Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
April 23, 2025 11:12:37 AM	End	Execution	Detector Flow Accuracy - Front FID - Type: Oxidizer - S: 400.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:12:39 AM	start	Execution	Detector Flow Accuracy - Front FID - Type: Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:18:31 AM	Audit	Data	Detector Flow Accuracy - Front FID - Type: Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
April 23, 2025 11:16:33 AM	End	Execution	Detector Flow Accuracy - Front FID - Type: Makeup - S: 25.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:16:34 AM	start	Execution	Detector Flow Accuracy - Back FPD - Type: Fuel - S: 75.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:25:22 AM	start	Execution	Detector Flow Accuracy - Back FPD - Type: Fuel - S: 75.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:25:40 AM	Audit	Data	Detector Flow Accuracy - Back FPD - Type: Fuel - S: 75.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry

Page 3 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 15 / 22

User Name: natipal.jengcharoen
Report Generated by: natipal.jengcharoen
System ID: US10943001
Print Date: April 24, 2025 10:16:55 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 11:25:44 AM	End	Execution	Detector Flow Accuracy - Back FPD - Type: Fuel - S: 75.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:25:45 AM	start	Execution	Detector Flow Accuracy - Back FPD - Type: Oxidizer - S: 100.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:28:42 AM	Audit	Data	Detector Flow Accuracy - Back FPD - Type: Oxidizer - S: 100.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
April 23, 2025 11:28:44 AM	End	Execution	Detector Flow Accuracy - Back FPD - Type: Oxidizer - S: 100.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:28:49 AM	start	Execution	Detector Flow Accuracy - Back FPD - Type: Makeup - S: 50.0 mL/min - L: <= 10.0% setpoint	None
April 23, 2025 11:30:00 AM	start	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise) <= 5.00 150 pA - L (Drift) <= 5.00 150 pA/hour	None
April 23, 2025 11:30:27 AM	start	Execution	Noise and Drift - Front FID - Detector FID - L (Noise) <= 0.10 pA - L (Drift) <= 2.50 pA/hour	None
April 23, 2025 11:34:12 AM	start	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise) <= 5.00 150 pA - L (Drift) <= 5.00 150 pA/hour	None
April 23, 2025 11:36:02 AM	start	Execution	Detector Flow Accuracy - Back FPD - Type: Makeup - S: 50.0 mL/min - L: <= 10.0% setpoint	None

Page 4 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 16 / 22

User Name: natipal.jengcharoen
Report Generated by: natipal.jengcharoen
System ID: US10943001
Print Date: April 24, 2025 10:16:55 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 11:36:18 AM	Audit	Data	Detector Flow Accuracy - Back FPD - Type: Makeup - S: 50.0 mL/min - L: <= 10.0% setpoint	Manual Data Entry
April 23, 2025 11:36:21 AM	End	Execution	Detector Flow Accuracy - Back FPD - Type: Makeup - S: 50.0 mL/min - L: <= 10.0% setpoint	Run Count: 1
April 23, 2025 11:38:23 AM	start	Execution	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
April 23, 2025 11:40:36 AM	Audit	Data	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
April 23, 2025 11:40:37 AM	End	Execution	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 230.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count: 1
April 23, 2025 11:40:42 AM	start	Execution	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	None
April 23, 2025 11:57:56 AM	Audit	Data	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Manual Data Entry
April 23, 2025 11:57:57 AM	End	Execution	GC Oven Temperature Accuracy - 7890 - Temperature : Oven - S: 100.0°C - L: >= -1.0 AND <= 1.0 % setpoint in K	Run Count: 1
April 23, 2025 11:58:02 AM	start	Execution	GC Oven Temperature Stability - 7890 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	None

Page 5 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 17 / 22

User Name: natipal.jengcharoen
Report Generated by: natipal.jengcharoen
System ID: US10943001
Print Date: April 24, 2025 10:16:55 AM

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 12:28:22 PM	Audit	Data	GC Oven Temperature Stability - 7890 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Manual Data Entry
April 23, 2025 12:28:28 PM	End	Execution	GC Oven Temperature Stability - 7890 - Temperature : Oven - S: 100.0°C - L: <= 0.5°C	Run Count: 1
April 23, 2025 1:43:45 PM	start	Execution	GC Scouting Run - Injection Tower, Front SSL, Front FID - Part of System Preparation - No limits associated	None
April 23, 2025 2:18:28 PM	Audit	Data	GC Scouting Run - Injection Tower, Front SSL, Front FID - Part of System Preparation - No limits associated	Data file Path: D:\Seco_FPD\002025\DEF_13-00-13\SC_FID_1.D\FID1A.ch
April 23, 2025 2:18:44 PM	End	Execution	GC Scouting Run - Injection Tower, Front SSL, Front FID - Part of System Preparation - No limits associated	Run Count: 1
April 23, 2025 2:18:46 PM	start	Execution	Noise and Drift - Front FID - Detector FID - L (Noise) <= 0.10 pA - L (Drift) <= 2.50 pA/hour	None
April 23, 2025 2:19:22 PM	Audit	Data	Noise and Drift - Front FID - Detector FID - L (Noise) <= 0.10 pA - L (Drift) <= 2.50 pA/hour	Data file Path: D:\Seco_FPD\002025\DEF_13-00-13\SC_FID_1.D\FID1A.ch
April 23, 2025 2:19:45 PM	End	Execution	Noise and Drift - Front FID - Detector FID - L (Noise) <= 0.10 pA - L (Drift) <= 2.50 pA/hour	Run Count: 1

Page 6 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 18 / 22

User Name: natpalhengcharoen
Report generated by username: natpalhengcharoen
Print Date: April 24, 2025 10:16:55 AM

System Id: US10943001

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 2:15:51 PM	start	Execution	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	None
April 23, 2025 2:20:21 PM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13IP_FID_2.D\FID1A.ch
April 23, 2025 2:20:21 PM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13IP_FID_3.D\FID1A.ch
April 23, 2025 2:20:21 PM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13IP_FID_4.D\FID1A.ch
April 23, 2025 2:20:21 PM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13IP_FID_5.D\FID1A.ch
April 23, 2025 2:20:21 PM	Audit	Data	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13IP_FID_7.D\FID1A.ch

Page 7 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 19 / 22

User Name: natpalhengcharoen
Report generated by username: natpalhengcharoen
Print Date: April 24, 2025 10:16:55 AM

System Id: US10943001

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 2:30:32 PM	End	Execution	Injection Precision - Injection Tower, Front SSL, Front FID - GC - L (Area): <= 3.00% - L (Ret. Time): <= 1.00%	Run Count : 1
April 23, 2025 2:20:30 PM	start	Execution	Signal to Noise - Injection Tower, Front SSL, Front FID - Detector FID - L >= 300000	None
April 23, 2025 2:20:50 PM	Audit	Data	Signal to Noise - Injection Tower, Front SSL, Front FID - Detector FID - L >= 300000	Data file Path : D:\Secol_FPD\OQ2025\DEF_GC 2025-04-23 13-00-13ISN_FID_1.D\FID1A.ch
April 23, 2025 2:21:00 PM	End	Execution	Signal to Noise - Injection Tower, Front SSL, Front FID - Detector FID - L >= 300000	Run Count : 1
April 23, 2025 2:31:04 PM	start	Execution	GC Scouting Run - Manual Injection, Back SSL, Back FPD: - Part of System Preparation - No limits associated	None
April 23, 2025 2:35:48 PM	start	Execution	GC Scouting Run - Manual Injection, Back SSL, Back FPD: - Part of System Preparation - No limits associated	None
April 23, 2025 3:36:38 PM	Audit	Data	GC Scouting Run - Manual Injection, Back SSL, Back FPD: - Part of System Preparation - No limits associated	Data file Path : D:\Secol_FPD\OQ2025\GC_FPD_000001.D\FPD02B.ch
April 23, 2025 3:37:05 PM	End	Execution	GC Scouting Run - Manual Injection, Back SSL, Back FPD: - Part of System Preparation - No limits associated	Run Count : 1

Page 8 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 20 / 22

User Name: natpalhengcharoen
Report generated by username: natpalhengcharoen
Print Date: April 24, 2025 10:16:55 AM

System Id: US10943001

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 23, 2025 3:37:07 PM	start	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	None
April 23, 2025 3:37:21 PM	Audit	Data	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	Data file Path : D:\Secol_FPD\OQ2025\NOV_F000001.D\FPD02B.ch
April 23, 2025 3:37:43 PM	End	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	Run Count : 1
April 23, 2025 4:23:31 PM	Audit	AppClosed	Session	None
April 24, 2025 9:14:38 AM	Audit	AppRestarted	Session	Host Name: AG-SCG2350VNO, Drive Serial Number: 2A884E77
April 24, 2025 9:35:56 AM	Audit	SessionInitiated	Session	None
April 24, 2025 9:37:00 AM	start	Qualification	Session	OQ
April 24, 2025 9:38:08 AM	Audit	TestUnlocked	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	Deviation filed for Run Count : 1
April 24, 2025 9:38:08 AM	start	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	None
April 24, 2025 9:40:45 AM	Audit	Data	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	Data file Path : D:\Secol_FPD\OQ2025\FPD_0000 01.D\FPD02B.ch

Page 9 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 21 / 22

User Name: natpalhengcharoen
Report generated by username: natpalhengcharoen
Print Date: April 24, 2025 10:16:55 AM

System Id: US10943001

US10943001 Transaction log:

Time	Transaction State	Activity Performed	Type of Transaction	Optional Information
April 24, 2025 9:40:51 AM	End	Execution	Noise and Drift - Back FPD - Detector FPD P-Mode - L (Noise): <= 5.00 150 pA - L (Drift): <= 5.00 150 pA/hour	Run Count : 2
April 24, 2025 9:40:57 AM	start	Execution	Signal to Noise - Manual Injection, Back SSL, Back FPD: - Detector FPD - L >= 1000	None
April 24, 2025 10:00:17 AM	start	Execution	Signal to Noise - Manual Injection, Back SSL, Back FPD: - Detector FPD - L >= 1000	None
April 24, 2025 10:00:41 AM	Audit	Data	Signal to Noise - Manual Injection, Back SSL, Back FPD: - Detector FPD - L >= 1000	Data file Path : D:\Secol_FPD\OQ2025\FPD_0000 01.D\FPD02B.ch
April 24, 2025 10:00:48 AM	End	Execution	Signal to Noise - Manual Injection, Back SSL, Back FPD: - Detector FPD - L >= 1000	Run Count : 1
April 24, 2025 10:00:53 AM	End	Qualification	Session	OQ
April 24, 2025 10:00:53 AM	start	Reporting	Session	None
April 24, 2025 10:13:50 AM	Audit	Reporting	Session	Report Generated : Certificate
April 24, 2025 10:18:01 AM	Audit	Reporting	Session	Report Generated : Report

Page 10 / 10

Date: April 24, 2025 10:16:55 AM
System ID: US10943001

Page 22 / 22

CERTIFICATE OF CALIBRATION


ISSUED BY **Noisemeters**

DATE OF ISSUE **26 February 2025** CERTIFICATE NUMBER **234084**

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



doseBadge Reader : IEC 60942:2003

Instrument Information

Manufacturer: Cirrus Research plc **Notes:**
Model: RC:110A
Serial number: 95157
Class: 2

Test summary

Date of calibration: 21 February 2025

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

The doseBadge Reader has been shown to conform to the Class 2 requirements for periodic testing, described in Annex B of IEC 60942:2003 for the sound pressure level(s) and frequency(ies) stated, for the environmental conditions under which the tests were performed.

However, as public evidence was not available, from a testing organisation responsible for pattern approval, to demonstrate that the model of doseBadge Reader conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, no general statement or conclusion can be made about conformance of the doseBadge Reader to the requirements of IEC 60942:2003.

Notes:

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

ISSUED BY **Noisemeters**

DATE OF ISSUE **02 April 2025** CERTIFICATE NUMBER **237347**

NoiseMeters
Acoustic House
Bridlington Road
Hunmanby
YO14 0PH
United Kingdom
www.noisemeters.com

Page 1 of 2

Approved signatory
N.Smith
Electronically signed:



doseBadge Reader : IEC 60942:2003

Instrument Information

Manufacturer: Pulsar Instruments **Notes:**
Model: Model 22R
Serial number: 79781
Class: 2

Test summary

Date of calibration: 01 April 2025

The doseBadge reader detailed above has been calibrated to the published data as described in the operating manual and in the half-inch configuration. The procedures and techniques used are as described in IEC60942_2003 Annex B – Periodic Tests and three determinations of the sound pressure level, frequency and total distortion were made.

The sound pressure level was measured using a WS2F condenser microphone type MK:224 manufactured by Cirrus Research plc.

The results have been corrected to the reference pressure of 101.33 kPa using the manufacturer's data.

The doseBadge Reader has been shown to conform to the Class 2 requirements for periodic testing, described in Annex B of IEC 60942:2003 for the sound pressure level(s) and frequency(ies) stated, for the environmental conditions under which the tests were performed.

However, as public evidence was not available, from a testing organisation responsible for pattern approval, to demonstrate that the model of doseBadge Reader conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, no general statement or conclusion can be made about conformance of the doseBadge Reader to the requirements of IEC 60942:2003.

Notes:

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.

CERTIFICATE OF CALIBRATION

Certificate Number:

234084

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 99.38 kPa Temperature: 25.0 °C Humidity: 40.4 %
After Pressure: 99.39 kPa Temperature: 25.1 °C Humidity: 37.9 %

Test equipment

Equipment	Manufacturer	Model	Serial number
Distortion Meter	Keithley	2015	1063074
Environmental Monitor	Comet	T7510	21962628

Initial Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.79	113.76	113.79	113.79	-0.21	±0.75	0.11 dB
Distortion (%)	< 4.00	1.52	0.51	0.51	0.84	0.84	+4.00	0.13 %
Frequency (Hz)	1000.0	990.4	990.4	990.3	990.4	-9.6	±20.0	0.1 Hz

The measured quantities or deviations (as applicable), extended by the expanded combined uncertainty of measurement, must not exceed the corresponding tolerance.

Adjusted Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.97	113.97	113.87	113.97	-0.03	±0.75	0.11 dB
Distortion (%)	< 4.00	0.51	0.50	0.51	0.51	0.51	+4.00	0.13 %
Frequency (Hz)	1000.0	990.3	990.3	990.3	990.3	-9.7	±20.0	0.1 Hz

Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

End of results

CERTIFICATE OF CALIBRATION

Certificate Number:

237347

Page 2 of 2

Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 102.23 kPa Temperature: 22.3 °C Humidity: 34.7 %
After Pressure: 102.23 kPa Temperature: 22.3 °C Humidity: 35 %

Test equipment

Equipment	Manufacturer	Model	Serial number
Distortion Meter	Keithley	2015	1053426
Environmental Monitor	Comet	T7510	21962628

Initial Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	114.07	114.07	114.06	114.07	0.07	±0.75	0.11 dB
Distortion (%)	< 4.00	0.50	0.50	0.49	0.50	0.50	+4.00	0.13 %
Frequency (Hz)	1000.0	998.9	998.9	998.9	998.9	-1.1	±20.0	0.1 Hz

The measured quantities or deviations (as applicable), extended by the expanded combined uncertainty of measurement, must not exceed the corresponding tolerance.

Adjusted Acoustic Results

	Expected	Sample 1	Sample 2	Sample 3	Average	Deviation	Tolerance	Uncertainty
Level (dB)	114.00	113.99	113.99	114.00	113.99	-0.01	±0.75	0.11 dB
Distortion (%)	< 4.00	0.49	0.49	0.49	0.49	0.49	+4.00	0.13 %
Frequency (Hz)	1000.0	998.9	998.9	998.9	998.9	-1.1	±20.0	0.1 Hz

Functionality Results

Function	Result
Keypad	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

End of results

ภาคผนวก จ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม



ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๐ กรกฎาคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ซีคอต จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๗ เมษายน ๒๕๖๖

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๙ แผ่น

ตามหนังสือที่อ้างถึง บริษัท ซีคอต จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๙ สถานที่ ตั้งเลขที่ ๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ซีคอต จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

- ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูล หรือวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ พฤษภาคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายประสม ดำรงพงษ์)

กองวิจัยและเตือนภัยมลพิษโรงงาน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"



ส่งที่ส่งมาด้วย ๑

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ซีคอต จำกัด

เลขทะเบียน ว-๒๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐๑ ๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑๐ ราย

๑) นายขรรชัย เกรียงไกรอุดม

๒) นางสมฤดี เกรียงไกรอุดม

๓) นางสาวธนา ทิพรักษ์

๔) นางสาวเชมพูดา อินทร์ศรี

๕) นางสาวบริดา สมใจ

๖) นางสาวอรุณญา มาตา

๗) นางสาวลดาวัลย์ วงศ์เจริญ

๘) นางสาวณัฏฐวรรณ เกตะวันดี

๙) นางสาวนริสา ภูวสรเพ็ชญ์

๑๐) นางสาวศิริวรรณ นิมสง่า

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๒

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๓

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๔

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๕

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๖

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๗

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๘

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๐๙

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๑๐

ทะเบียนเลขที่ ว-๒๓๙-ค-๐๐๑๑

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ซีคอฟ จำกัด

เลขทะเบียน ๖-๒๓๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐ ๑ ๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๓๘ ราย

๑) นางสาวสุตาพร สุนทร	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๑
๒) นางสาวสุธาทิพย์ เทียนเตี้ย	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๓
๓) นางสาวสุนันทา ศิริวัฒนานนท์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๔
๔) นายบวร ดีชัยยะ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๕
๕) นางสาวเกศรินทร์ วรเดชาวิทยา	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๖
๖) นายอนิวัฒน์ พิมพ์วันนา	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๗
๗) นายชิดพล สมประสงค์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๘
๘) นางสาวศศิธร พรหมประเสริฐ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๐๙
๙) นายศิวะนนท์ กุลวงษ์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๐
๑๐) นางสาวอลิษา คณิรวานนท์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๑
๑๑) นางสาวสิริวรรณ แก้วชิงดวง	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๒
๑๒) นางสาวปัทมวรรณ สุวรรณวิโรจน์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๓
๑๓) นางสาวกนิษฐา เจริญเชื้อ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๔
๑๔) นายวัชรกานต์ ประมาคะเต	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๕
๑๕) นายชอง เสงฆ์กุล	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๖
๑๖) นางสาวกฤษณา จันทุม	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๗
๑๗) นางสาวพนภา บุตรธรรม	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๘
๑๘) นางสาวธาริณี อาจปลิว	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๑๙
๑๙) นายธนโชติ ช่างลื้อ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๐
๒๐) นางสาวพัชรา สมานพันธ์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๑
๒๑) นางสาวจุฬารัตน์ แจ่มเรือน	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๒
๒๒) นางสาวจณิสตา กุ้ยอ่อน	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๓
๒๓) นายกิตติพงศ์ ละเกิงสุข	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๔
๒๔) นายจิรวัฒน์ โคตรคำหาญ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๕
๒๕) นายชนะพล อัครผล	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๖
๒๖) นางสาวทิพย์สุดา วรรณการ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๗
๒๗) นายสิทธิชัย สว่างวงศ์ไชย	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๘
๒๘) นายพิษณุ สีนามเพ็ง	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๒๙
๒๙) นายรัตนชัย ขอบทำกิจ	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๐
๓๐) นายธนาวุฒิ ต่วนแสง	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๑
๓๑) นายณัฐชัย ไชยโคตร	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๒
๓๒) นายณัฐดนัย กฤษณะโสม	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๓
๓๓) นายศุภชัย สุขใหม่	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๔
๓๔) นายรอมฎอน เหลี่ยมพามา	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๕
๓๕) นางสาวสุภาวดี บัวแก้ว	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๖
๓๖) นางสาวมาริยาณี ฮาแว	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๗
๓๗) นางสาววิระยา ปิจฉิมบุรณ์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๘
๓๘) นางสาวศลิษา อินทรีย์	ทะเบียนเลขที่ ๖-๒๓๓๙-จ-๐๐๓๙

3/กมล

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท ซีคอฟ จำกัด

เลขทะเบียน ๖-๒๓๓๙

ที่ อก ๐๓๑๐(๑)/ ๑๑ ๐ ๑ ๖

ลงวันที่ ๒๐ กรกฎาคม ๒๕๖๖

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๕๕ รายการ

น้ำเสีย จำนวน 45 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
2	Arsenic	2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
3	Barium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ⁽⁴⁾
4	α-BHC	2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
5	β-BHC	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ⁽⁴⁾
6	δ-BHC	2) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾
7	γ-BHC	1) Liquid-Liquid Extraction, Gas Chromatographic Method ⁽⁴⁾
		2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾

3/กมล

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method ^[4] 2) 5-Day BOD Test, Membrane Electrode Method ^[4]
9	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
10	Chemical Oxygen Demand	1) Open Reflux, Titrimetric method ^[4] 2) Closed Reflux, Colorimetric method ^[4] 3) Closed Reflux, Titrimetric Method ^[4]
11	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
12	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
13	Color	ADMI Weighted-Ordinate Spectrophotometric Method ^[4]
14	Copper	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
15	Cyanide	Distillation, Colorimetric method ^[4]
16	4,4'-DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	4,4'-DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
18	4,4'-DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
19	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
20	Endosulfan I	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
21	Endosulfan II	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
22	Endosulfan Sulfate	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
23	Endrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
24	Endrin Aldehyde	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
25	Formaldehyde	Distillation, Colorimetric Method ^[3]
26	Free Chlorine	1) Iodometric Method ^[4] 2) DPD Colorimetric Method ^[4]
27	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass-Spectrometric Method ^[4]
28	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
29	Hexavalent Chromium	1) Colorimetric Method ^[4] 2) Extraction, Air-Acetylene Flame Method ^[4]
30	Lead	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
31	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4]
32	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4]
33	Methoxychlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
34	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] <i>วิธีใหม่</i>

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		3) Digestion, Inductively Coupled Plasma Method ^[4]
35	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method ^[4] 2) Soxhlet Extraction Method ^[4]
36	pH	Electrometric Method ^[4]
37	Phenols	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4]
38	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
39	Sulfide	1) Iodometric method ^[4] 2) Methylene blue method ^[4]
40	Temperature	Laboratory and Field Methods ^[4]
41	Total Dissolved Solids	Dried at 180 °C ^[4]
42	Total Kjeldahl Nitrogen	1) Macro Kjeldahl Method ^[4] 2) Semi-Micro Kjeldahl Method ^[4]
43	Total Suspended Solids	Dried at 103-105 °C ^[4]
44	Trivalent Chromium	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[4] 3) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4]
45	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Method ^[4] <i>วิธีใหม่</i>

น้ำใต้ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
2	Acetone	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
3	Aldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
5	Antimony	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
8	Barium	1) Digestion, Direct Nitrous Oxide-Acetylene Flame Method ^[4] 2) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
10	Benzene	Purge and Trap Gas Chromatographic/Mass spectrometric Method ^[4]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] 3mg)

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
13	Benzoic acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
15	Benzo(g,h,i)perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
16	Beryllium	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
19	Bromodichloromethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
20	Bromoform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
21	Butanol	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
22	Butyl benzyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
23	Cadmium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
25	Carbon disulfide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
26	Carbon tetrachloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4] 3mg)

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Chlordane	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
29	Chlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
30	Chlorodibromomethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
31	Chloroform	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
33	Chromium	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
34	Chromium (III)	1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method; Colorimetric Method; Calculation ^[4]
35	Chromium (VI)	1) Colorimetric Method ^[4] 2) Extraction, Air-Acetylene Flame Method ^[4]
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] <i>ส่ง</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
37	Cyanide	1) Distillation, Titrimetric Method ^[4] 2) Distillation, Colorimetric Method ^[4]
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
39	DDD	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
40	DDE	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
41	DDT	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
43	Di-n-butyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
44	1,2-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
45	1,3-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
46	1,4-Dichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
47	3,3'-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
48	1,1-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
49	1,2-Dichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4] <i>ส่ง</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
50	1,1-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
51	cis-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
52	trans-1,2-Dichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
54	1,2-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
55	1,3-Dichloropropane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
56	1,3-Dichloropropene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
57	Dieldrin	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
58	Diethyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
63	Di-n-Octyl phthalate	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
64	Endosulfan	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid...

2) Liquid-Liquid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
65	Endrin	2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4] 1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
66	Ethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
69	Heptachlor	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
70	Heptachlor epoxide	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
72	Hexachloro-1,3-butadiene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
73	n-Hexane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
74	α-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
75	β-HCH	1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4] 2) Liquid-Liquid...

2) Liquid-Liquid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
76	γ-HCH	2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] 1) Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
77	Hexachlorocyclopentadiene	2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4] Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
81	Lead	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
82	Manganese	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
83	Mercury	Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4]
84	Methanol	Purge and Trap Gas Chromatographic/ Mass spectrometric Method ^[4]
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
86	Methyl bromide	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]

87 Methylene chloride...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
87	Methylene chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
90	Methyl tert-butyl ether	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
92	Nickel	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
95	N-Nitrosodi-n-propylamine	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
96	Polychlorinated Biphenyls - PCB-1016 - PCB-1221 - PCB-1232 - PCB-1242 - PCB-1248 - PCB-1254 - PCB-1260	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
98	pH	Electrometric method ^[4]

99 Phenanthrene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
100	Phenol	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4] 3) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
102	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
103	Silver	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Inductively Coupled Plasma Method ^[4]
104	Styrene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
105	1,1,2,2-Tetrachloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
106	Tetrachloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
107	Toluene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
108	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[12,25]
109	TPH (C ₈ -C ₁₆)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,21] 2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^[9,25]
110	TPH (C ₁₆ -C ₃₅)	1) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[9,21] <i>วิธีใหม่</i>

2) Separatory...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
		2) Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass spectrometric Method ^[9,25]
111	1,2,4-Trichlorobenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
112	1,1,1-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
113	1,1,2-Trichloroethane	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
114	Trichloroethylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
115	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
116	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[4]
117	1,3,5-Trimethylbenzene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
118	Vanadium	Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]
119	Vinyl acetate	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
120	Vinyl chloride	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
121	m-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
122	o-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
123	p-Xylene	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4]
124	Xylene (Total)	Purge and Trap Gas Chromatographic/Mass Spectrometric Method ^[4] <i>วิธีใหม่</i>

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
125	Zinc	1) Digestion, Direct Air-Acetylene Flame Method ^[4] 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method ^[4] 3) Digestion, Inductively Coupled Plasma Spectrometric Method ^[4]

อากาศเสีย (ปล่อยระบาย) จำนวน 27 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
2	Arsenic	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
3	Beryllium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
4	Cadmium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
5	Carbon monoxide	Instrumental Analyzer Method ^[5]
6	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
7	Chromium	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 3100

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
8	Cobalt	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
9	Copper	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
10	Cresol	Adsorption Sampling, Gas Chromatographic Method ^[5]
11	Dioxin/Furans	Isokinetic Sampling ^[5]
12	Hydrogen chloride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
13	Hydrogen Fluoride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
14	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]
15	Lead	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
16	Manganese	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
17	Mercury	Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[5]
18	Nickel	1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5] 3100

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Opacity	Ringelmann's Method ^[2]
20	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic acid Method ^[5] 2) Absorption Sampling, Ion Chromatographic Method ^[5] 3) Instrumental Analyzer Method ^[5]
21	Selenium	1) Isokinetic Sampling, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
22	Sulfur dioxide	1) Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5] 2) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 3) Instrumental Analyzer Method ^[5]
23	Sulfuric acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
24	Tin	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
25	Total Suspended Particulate	1) Isokinetic Sampling, Gravimetric Method ^[5] 2) Paired Train, Isokinetic Sampling, Gravimetric Method ^[5]
26	Vanadium	Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method ^[5]
27	Xylene	1) Adsorption Sampling, Gas Chromatographic Method ^[5] 2) Adsorption Sampling, Gas Chromatographic/Mass Spectrometric Method ^[5]

สิ่งปฏิกูล...

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 34 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,6,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,6,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
2	Antimony	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
3	Arsenic	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,16] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
4	Barium	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15]

2) Waste Extraction...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
5	Beryllium	2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14)
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
7	Chlordane	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1,6,15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14)
8	Chromium	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^(1,9,22) 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^(1,9,27) 3) Soxhlet Extraction, Gas Chromatographic Method ^(10,22) 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^(10,27) 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1,6,15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14)

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Chromium (III)	3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14) 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation ^(1,6,15,17) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation ^(1,6,14,17) 3) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation ^(7,8,15,17) 4) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation ^(7,8,14,17)
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method ^(1,17) 2) Alkaline Digestion, Colorimetric Method ^(8,17)
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(2,6,14) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)
12	Copper	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^(1,6,15) 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^(1,6,14) 3) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 4) Digestion, Inductively Coupled Plasma Method ^(7,14)

13 2,4-D...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
13	2,4-D	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,25] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25]
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]

17 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
20	Lead	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14]

3) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
21	Lindane	3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[1,18] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[19] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
23	Methoxychlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,22] 2) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,27] 3) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 4) Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]

24 Molybdenum...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
24	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
25	Nickel	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]
26	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,23] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,23]
27	Pentachlorophenol	1) Waste Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,25] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25]
28	pH	Electrometric Method ^[31,32]
29	Selenium	1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[1,6,20] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,20]

4) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
30	Silver	4) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
31	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
32	Trichloroethylene	1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[1,12,26] 2) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[12,26]
33	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
34	Zinc	1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,14] 3) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 4) Digestion, Inductively Coupled Plasma Method ^[7,14]

ดิน จำนวน 124 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]

2 Acetone...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
2	Acetone	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
3	Aldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
4	Anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
5	Antimony	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
6	Arsenic	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,16] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
7	Atrazine	Ultrasonic Extraction, Gas Chromatographic Method ^[11,24]
8	Barium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
9	Benz(a)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
10	Benzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
11	Benzo(b)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
12	Benzo(k)fluoranthene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
13	Benzoic acid	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]

14 Benzo(a)pyrene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
14	Benzo(a)pyrene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
15	Benzo(g,h,i)perylene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
16	Beryllium	Digestion, Inductively Coupled Plasma Method ^[7,14]
17	Bis(2-chloroethyl)ether	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
18	Bis(2-ethylhexyl)phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
22	Butyl benzyl phthalate	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
23	Cadmium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
24	Carbazole	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
25	Carbon disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
27	Chlordane	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
28	p-Chloroaniline	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
31	Chloroform	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
32	2-Chlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
33	Chromium	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
34	Chromium (III)	1) Digestion, Flame Atomic Absorption Spectrometric Method; Colorimetric Method; Calculation ^[7,8,15,17] 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[7,8,14,17]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^[8,17]
36	Chrysene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
37	Cyanide	1) Extraction, Distillation, Titrimetric Method ^[28,29,30] 2) Extraction, Distillation, Colorimetric Method ^[28,29,30]
38	2,4-D	Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[24]
39	DDD	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
41	DDT	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
42	Dibenz(a,h)anthracene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
43	Di-n-butyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
47	3,3'-Dichlorobenzidine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
53	2,4-Dichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]

54 1,2-Dichloropropane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
57	Dieldrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
58	Diethyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
59	2,4-Dimethylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
60	2,4-Dinitrophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
61	2,4-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
62	2,6-Dinitrotoluene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
63	Di-n-Octyl phthalate	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
64	Endosulfan	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
65	Endrin	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]

67 Fluoranthene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
67	Fluoranthene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
68	Fluorene	Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[10,27]
69	Heptachlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
70	Heptachlor epoxide	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
71	Hexachlorobenzene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,26]
74	α-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
75	β-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
76	γ-HCH	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
77	Hexachlorocyclopentadiene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27] 3100

78 Hexachloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
78	Hexachloroethane	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
79	Indeno(1,2,3-cd)pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
80	Isophorone	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
81	Lead	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
82	Manganese	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[19] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
84	Methanol	Ultrasonic Extraction, Direct Aqueous Injection, Gas Chromatographic Method ^[11,21]
85	Methoxychlor	1) Ultrasonic Extraction, Gas Chromatographic Method ^[11,22] 2) Ultrasonic Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[11,27]
86	Methyl bromide	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
87	Methylene chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
88	2-Methylphenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
89	2-Methylnaphthalene	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27] 3100

90 Methyl tert-butyl ether...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
90	Methyl tert-butyl ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
91	Naphthalene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
92	Nickel	1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
93	Nitrobenzene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
94	N-Nitrosodiphenylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
95	N-Nitrosodi-n-propylamine	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
96	Polychlorinated Biphenyls - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260	Soxhlet Extraction, Gas Chromatographic Method ^[10,23]
97	Pentachlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[24]
98	Phenanthrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
99	Phenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^[11,27]
100	Pyrene	Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[10,27]
101	Selenium	1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method ^[7,20]

2) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
102	Silver	2) Digestion, Inductively Coupled Plasma Method ^[7,14] 1) Digestion, Flame Atomic Absorption Spectrometric Method ^[7,15] 2) Digestion, Inductively Coupled Plasma Method ^[7,14]
103	Styrene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
106	Toluene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
107	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
108	TPH (C ₈ -C ₁₆)	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,21] 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^[10,26]
109	TPH (C ₁₆ -C ₃₅)	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,21] 2) Soxhlet Extraction, Gas Chromatographic/Mass spectrometric Method ^[10,26]
110	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
111	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
112	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]
113	Trichloroethylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[13,26]

114 2,4,5-Trichlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
114	2,4,5-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
115	2,4,6-Trichlorophenol	Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method ^(11,27)
116	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
117	Vanadium	Digestion, Inductively Coupled Plasma Method ^(7,14)
118	Vinyl acetate	Purge and Trap, Gas Chromatographic/Mass spectrometric Method ^(13,26)
119	Vinyl chloride	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
120	m-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
121	o-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
122	p-Xylene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
123	Xylene (Total)	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^(13,26)
124	Zinc	1) Digestion, Flame Atomic Absorption Spectrometric Method ^(7,15) 2) Digestion, Inductively Coupled Plasma Method ^(7,14)

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ที่ อก ๐๓๑๐(๑)/ ๕๐๕๔



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๗ พฤษภาคม ๒๕๖๗

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๑ พฤษภาคม ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท ซีคอฟ จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๔
สถานที่ตั้งเลขที่ ๒๓๔ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากร
ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
จำนวน ๒ ราย ได้แก่

๑) นายวัชรกานต์ ประมาคเต

ทะเบียนเลขที่ ว-๒๓๔-จ-๐๐๑๕

๒) นายรัตนชัย ขอบทำกิจ

ทะเบียนเลขที่ ว-๒๓๔-จ-๐๐๓๐

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นายพรยศ กลิ่นกรอง)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

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กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๑ พฤศจิกายน ๒๕๖๗

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ซีคอฟ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๕ พฤศจิกายน ๒๕๖๗

ตามคำขอที่อ้างถึง บริษัท ซีคอฟ จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๓๔
สถานที่ตั้งเลขที่ ๒๓๔ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร ขอยกเลิกบุคลากร
ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์
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ทะเบียนเลขที่ ว-๒๓๔-จ-๐๐๓๗

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นายธีรทัศน์ อิศรางกูร ณ อยุธยา)
รองอธิบดี ปฏิบัติราชการแทน
อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ภาคผนวก ข

ใบรับรองความสามารถห้องปฏิบัติการและขอบข่ายการรับรอง
ห้องปฏิบัติการทดสอบ ตามมาตรฐาน ISO/IEC 17025
จากสำนักงานมาตรฐานอุตสาหกรรม (สมอ.)



แบบ กษท./สมอ.๒
Form NSC/TISI 2

ใบรับรองเลขที่ 24-LB0026
(Certificate No.)

ใบรับรองระบบงาน (Certificate of Accreditation)

อาศัยอำนาจตามความในพระราชบัญญัติการมาตรฐานแห่งชาติ พ.ศ. ๒๕๕๑
(By Virtue of National Standardization Act B.E. 2551 (2008))

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Secretary-General, Thai Industrial Standards Institute)

ออกใบรับรองฉบับนี้ให้
(Issues this certificate to)

บริษัท ซีคोट จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

ตั้งอยู่เลขที่
(Address)

๒๓๙ ถนนริมคลองประปา แขวงบางซื่อ เขตบางซื่อ กรุงเทพมหานคร
(239 Rimklongprapa Road, Bangsue, Bangkok)

ได้รับการรับรองความสามารถ
(Certificate of competence)

ตามมาตรฐานเลขที่ มอก. ๑๗๐๒๕ - ๒๕๖๑
(Standard No. TIS 17025-2561 (2018) (ISO/IEC 17025: 2017))

ข้อกำหนดทั่วไปว่าด้วยความสามารถของ ห้องปฏิบัติการทดสอบและห้องปฏิบัติการสอบเทียบ
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หมายเลขการรับรองที่ ทดสอบ ๐๓๙๔
(Accreditation No. Testing 0394)

โดยมีรายละเอียดสาขาและขอบข่ายที่ได้ใบรับรอง แสดงไว้ใน QR CODE และ www.tisi.go.th
(Details of the scheme and scope of the certificate are shown in QR CODE and www.tisi.go.th)

ออกให้ ณ วันที่ ๖ ธันวาคม พ.ศ. ๒๕๖๖
(Issue date : 6 December B.E. 2566 (2023))


(นายวีระศักดิ์ เพ็งหล่ง)
ผู้อำนวยการสำนักงานคณะกรรมการการมาตรฐานแห่งชาติ

ปฏิบัติราชการแทน

เลขาธิการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม



Signed by สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม (nmi.)
Thai Industrial Standards Institute (TISI)
Date: 2023-12-06T08:49:04.476+07:00

กระทรวงอุตสาหกรรม สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry Thailand, Thai Industrial Standards Institute)



รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ
(Scope of Accreditation for Testing)

ใบรับรองเลขที่ 24-LB0026
(Certification No. 24-LB0026)



ชื่อห้องปฏิบัติการ
(Laboratory Name)

บริษัท ซีคोट จำกัด ฝ่ายห้องปฏิบัติการทดสอบด้านสิ่งแวดล้อม
(Secot Company Limited, Environmental Laboratory Division)

หมายเลขการรับรองที่
(Accreditation No.)

ทดสอบ 0394
(Testing 0394)

ฉบับที่ 02
(Issue No.02)

ออกให้ตั้งแต่วันที่ 30 ตุลาคม พ.ศ. 2566
(Valid from) (30 October B.E.2566 (2023))

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สถานภาพห้องปฏิบัติการ
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(Site)

☐ชั่วคราว
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(Multisite)

สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
สาขาสังแวดล้อม (environmental field) 1. น้ำและน้ำเสีย (water and wastewater)	- โลหะหนัก (heavy metals) • สารหนู (Arsenic, As) 0.000 5 mg/L ถึง 0.090 0 mg/L • สารหนู (Arsenic, As) 0.05 mg/L ถึง 4.50 mg/L • แบเรียม (Barium, Ba) 0.02 mg/L ถึง 4.50 mg/L • แคดเมียม (Cadmium, Cd) 0.01 mg/L ถึง 4.50 mg/L • โครเมียม (Chromium, Cr) 0.01 mg/L ถึง 4.50 mg/L	- Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 F and Part 3114 C - Standard Methods for the Examination of Water and Wastewater, APHA , AWWA, WEF, 23 rd edition , 2017, Part 3030 E and Part 3120 B

กระทรวงอุตสาหกรรมสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
(Ministry of Industry, Thai Industrial Standards Institute)

หน้าที่ 1/9

รายละเอียดสาขาและขอบข่ายใบรับรองห้องปฏิบัติการ

(Scope of Accreditation for Testing)

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ฉบับที่ 02
(Issue No.02)

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p>	<p>- โลหะหนัก (heavy metals)</p> <ul style="list-style-type: none"> ทองแดง (Copper, Cu) 0.02 mg/L ถึง 4.50 mg/L เหล็ก (Iron, Fe) 0.05 mg/L ถึง 9.00 mg/L ตะกั่ว (Lead, Pb) 0.03 mg/L ถึง 4.50 mg/L แมงกานีส (Manganese, Mn) 0.01 mg/L ถึง 9.00 mg/L นิกเกิล (Nickel, Ni) 0.01 mg/L ถึง 4.50 mg/L สังกะสี (Zinc, Zn) 0.02 mg/L ถึง 9.00 mg/L 	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, Part 3030 E and Part 3120 B</p>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>1. น้ำและน้ำเสีย (ต่อ) (water and wastewater) (cont.)</p>	<p>- ซีโอดี (Chemical oxygen demand, COD) 100 mg/L ถึง 4 000 mg/L</p>	<p>- Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23rd edition, 2017, Part 5220 D</p>
<p>2. บริเวณทำงาน (workplace)</p>	<p>- ฝุ่นละอองรวม (Total dust) 0.10 mg/filter ถึง 2.00 mg/filter</p> <p>- ฝุ่นละอองขนาดเล็ก (Respirable dust) 0.10 mg/filter ถึง 2.00 mg/filter</p>	<p>- NIOSH Manual of Analytical Methods (NMAM), method 0500, 4th edition, 15th August 1994 (Exclude Sampling)</p> <p>- NIOSH Manual of Analytical Methods (NMAM), method 0600, 4th edition, 15th January 1998 (Exclude Sampling)</p>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>2. บริเวณทำงาน (ต่อ) (workplace) (cont.)</p>	<ul style="list-style-type: none"> เบนซีน (Benzene) 1.10 µg/tube ถึง 420 µg/tube โทลูอีน (Toluene) 1.10 µg/tube ถึง 420 µg/tube โทโทไรซีน (Total xylenes) 2.20 µg/tube ถึง 840 µg/tube เมตา, พารา-ไซซีน (m, p- Xylene) 1.10 µg/tube ถึง 420 µg/tube ออร์โธ-ไซซีน (o- Xylene) 1.10 µg/tube ถึง 420 µg/tube 	<ul style="list-style-type: none"> NIOSH Manual of Analytical Methods (NMAM) , method 1501, 4th edition , 15th March 2003 (Exclude Sampling)
<p>3. ปล่องระบายอากาศ (stack)</p>	<ul style="list-style-type: none"> ซัลเฟอร์ไดออกไซด์ (Sulfur dioxide) 1.00 mg/L ถึง 16 000 mg/L (solution) 	<ul style="list-style-type: none"> US.EPA , Code of Federal Regulations , 40 CFR 60 appendix A , method 6 , July 2019 (Exclude Sampling)

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>3. ปล่องระบายอากาศ (ต่อ) (stack) (cont.)</p>	<ul style="list-style-type: none"> ไฮโดรเจนฟลูออไรด์ (Hydrogen fluoride) 5 µg/sample ถึง 400 µg/sample ไฮโดรเจนคลอไรด์ (Hydrogen chloride) 5 µg/sample ถึง 400 µg/sample 	<ul style="list-style-type: none"> WI-7.2-1-22 based on US.EPA , Code of Federal Regulations , 40 CFR 60 appendix A , method 26 , 2019 (Exclude Sampling)

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ฉบับที่ 02
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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ambient air)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> คลอโรอีเทน (Chloroethene) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 51.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 1,3-บิวทาไดเอิน (1,3-butadiene) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 44.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) โบรมอมีเทน (Bromomethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 77.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) อะครอลีน (Acrolein) 0.05 $\mu\text{g}/\text{m}^3$ ถึง 45.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาส่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> อะคริโลไนไตรล์ (Acrylonitrile) 0.04 $\mu\text{g}/\text{m}^3$ ถึง 43.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) ไดคลอโรมีเทน (Dichloromethane) 0.14 $\mu\text{g}/\text{m}^3$ to 69.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) คาร์บอนไดซัลไฟด์ (Carbon disulfide) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 62.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) ไตรคลอโรมีเทน (Trichloromethane) 0.20 $\mu\text{g}/\text{m}^3$ ถึง 97.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,2-ไดคลอโรอีเทน (1,2-dichloroethane) 0.08 $\mu\text{g}/\text{m}^3$ ถึง 80.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds, VOCs)</p> <ul style="list-style-type: none"> เบนซีน (Benzene) 0.06 $\mu\text{g}/\text{m}^3$ ถึง 63.00 $\mu\text{g}/\text{m}^3$ (0.02 ppbv ถึง 20.00 ppbv) คาร์บอนเตตระคลอไรด์ (Carbon tetrachloride) 0.25 $\mu\text{g}/\text{m}^3$ ถึง 125 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) ไตรคลอโรเอทิลีน (Trichloroethylene) 0.21 $\mu\text{g}/\text{m}^3$ ถึง 107 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,2-ไดคลอโรโพรเพน (1,2-dichloropropane) 0.18 $\mu\text{g}/\text{m}^3$ ถึง 92.00 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) เตตระคลอโรเอทิลีน (Tetrachloroethylene) 0.27 $\mu\text{g}/\text{m}^3$ ถึง 135 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>

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ฉบับที่ 02
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สาขาการทดสอบ (Field of Testing)	รายการทดสอบ (Parameter)	วิธีทดสอบ (Test Method)
<p>สาขาสิ่งแวดล้อม (environmental field)</p> <p>4. บรรยากาศทั่วไป (ต่อ) (ambient air) (cont.)</p>	<p>- สารอินทรีย์ระเหยง่าย (Volatile organic compounds ,VOCs)</p> <ul style="list-style-type: none"> 1,2-ไดโบรมีโอเทน (1,2-dibromoethane) 0.31 $\mu\text{g}/\text{m}^3$ ถึง 153 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 1,1,2,2-เตตระคลอโรอีเทน (1,1,2,2-tetrachloroethane) 0.69 $\mu\text{g}/\text{m}^3$ ถึง 137 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) เบนซิลคลอไรด์ (Benzyl chloride) 0.52 $\mu\text{g}/\text{m}^3$ ถึง 103 $\mu\text{g}/\text{m}^3$ (0.10 ppbv ถึง 20.00 ppbv) 1,4-ไดคลอโรเบนซีน (1,4-dichlorobenzene) 0.24 $\mu\text{g}/\text{m}^3$ ถึง 120 $\mu\text{g}/\text{m}^3$ (0.04 ppbv ถึง 20.00 ppbv) 	<p>- WI-7.2-1-24 based on US EPA , Compendium Method TO-15 , EPA/625/R-96/010b, Second edition, January 1999</p>