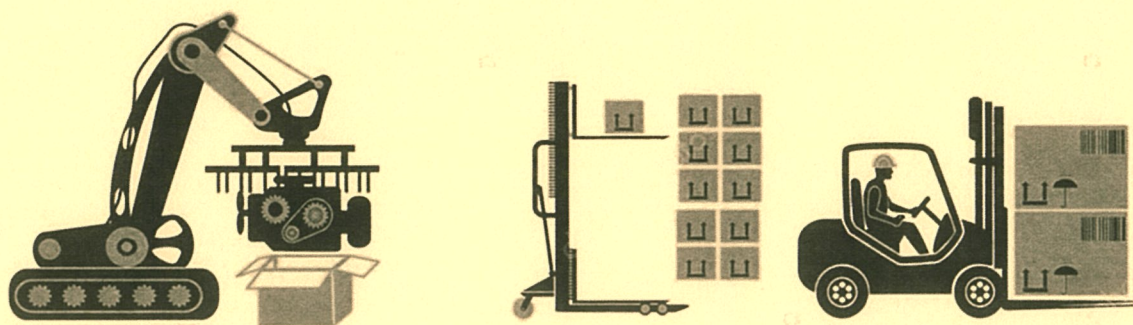
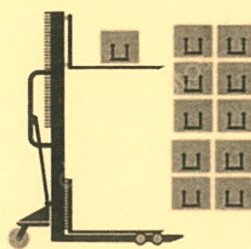
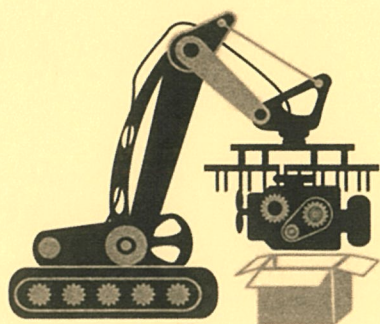


ภาคผนวก ข

รายงานผลการวิเคราะห์



รายงานผลการวิเคราะห์
บริษัท เทคโนโลยีสิ่งแวดล้อมไทย จำกัด





1/6 Soi Ramkhamhaeng 145, Khwaeng / Khet Saphansung, Bangkok 10240
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Page 1 of 23

TEST REPORT

Analysis No. : R24-0973
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Melting Stack
			2403-AS0546
			Melting Stack No. 3/D-Line
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	Ø 1.60
3	Temperature ⁽¹⁾	°C	218
4	Stack Gas Velocity ⁽¹⁾	m/s	10.4
5	Flow Rate ⁽¹⁾	m ³ /s	20.9
6	Flow Rate ⁽²⁾	Nm ³ /s	12.3
7	Moisture Content ⁽¹⁾	%	2.95
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	5.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Melting Stack					
			2403-AS0546					
			Melting Stack No. 3/D-Line		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	4.7	0.0580 (g/s)	216	1.19 (g/s)	240	14-15/03/24
HF ⁽²⁾	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	< 0.012	< 0.0001 (g/s)	-	-	-	19/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.70	0.7108 (g/s)	180	1.87 (g/s)	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	14	0.1973 (g/s)	621	3.92 (g/s)	690	13/03/24

Remarks : Melting Stack No. 3/D-Line = 47P 0671141 UTM 1561322

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
02.04.24



Approved by

Mrs. Porntip Pethshee
Laboratory Manager
02.04.24

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TEST REPORT

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Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Homogenize Stack	
			2403-AS0547	
			Homogenize Stack No. 3/D-Line	
1	Sampling Date	-	13/03/24	
2	Stack Diameter	m	Ø 0.60	
3	Temperature ⁽¹⁾	°C	200	
4	Stack Gas Velocity ⁽¹⁾	m/s	8.7	
5	Flow Rate ⁽¹⁾	m ³ /s	2.5	
6	Flow Rate ⁽²⁾	Nm ³ /s	1.5	
7	Moisture Content ⁽¹⁾	%	3.17	
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.4	
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	8.6	
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1	

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Homogenize Stack					
			2403-AS0547					
			Homogenize Stack No. 3/D-Line		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.6	0.0024 (g/s)	216	0.21 (g/s)	240	14-15/03/24
HF ⁽²⁾	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	< 0.012	< 0.00001 (g/s)	-	-	-	19/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.80	0.0869 (g/s)	180	0.33 (g/s)	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	17	0.0292 (g/s)	621	0.70 (g/s)	690	13/03/24

Remarks : Homogenize Stack No. 3/D-Line = 47P 0671078 UTM 1561331

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02, 06, 24



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

02, 04, 24

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TEST REPORT

Analysis No. : R24-0973
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Dust Collector Melting Furnace	
			2403-AS0548	2403-AS0549
			Dust Collector No. 4 (Inlet)/D-Line	Dust Collector No. 4 (Outlet)/D-Line
1	Sampling Date	-	13/03/24	13/03/24
2	Stack Diameter	m	Ø 1.30	Ø 1.50
3	Temperature ⁽¹⁾	°C	70	52
4	Stack Gas Velocity ⁽¹⁾	m/s	10.1	9.1
5	Flow Rate ⁽¹⁾	m ³ /s	13.4	16.1
6	Flow Rate ⁽²⁾	Nm ³ /s	11.3	14.4
7	Moisture Content ⁽¹⁾	%	2.93	2.29
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.5	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	756.5	759.2

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Dust Collector Melting Furnace						
			2403-AS0548	2403-AS0549		(A)	(B)		
			Dust Collector No. 4 (Inlet)/ D-Line *	Dust Collector No. 4 (Outlet)/ D-Line					
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	13.7	2.9	0.0413 (g/s)	216	0.66 (g/s)	240	14-15/03/24
HF ⁽²⁾	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	-	< 0.012	< 0.0001 (g/s)	-	-	-	19/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	-	1.20	0.0325 (g/s)	180	1.04 (g/s)	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	-	7	0.1154 (g/s)	621	2.17 (g/s)	690	13/03/24

Remarks : Dust Collector No. 4 (Inlet)/D-Line = 47P 0671146 UTM 1561320
Dust Collector No. 4 (Outlet)/D-Line = 47P 0671148 UTM 1561303

(1) Flue conditions
(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)
Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)
(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
* no established standard
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

Approved by

Mrs. Pornpip Pethshee

Laboratory Manager



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TEST REPORT

Analysis No. : R24-0973
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Dust Collector Dross Recovery	
			2403-AS0611	2403-AS0612
			Dust Collector No. 5 (Inlet)/D-Line	Dust Collector No. 5 (Outlet)/D-Line
1	Sampling Date	-	14/03/24	14/03/24
2	Stack Diameter	m	Ø 0.70	Ø 0.76
3	Temperature ⁽¹⁾	°C	73	50
4	Stack Gas Velocity ⁽¹⁾	m/s	10.6	9.3
5	Flow Rate ⁽¹⁾	m ³ /s	4.1	4.2
6	Flow Rate ⁽²⁾	Nm ³ /s	3.4	3.8
7	Moisture Content ⁽¹⁾	%	2.05	1.24
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.8	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	754.6	759.2

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			CASTING GROUP/Dust Collector						
			Dross Recovery						
			2403-AS0611	2403-AS0612					
			Dust Collector No. 5 (Inlet)/ D-Line *	Dust Collector No. 5 (Outlet)/ D-Line		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	94.2	5.4	0.0206 (g/s)	216	1.05(g/s)	240	15-18/03/24
HF ⁽²⁾	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	-	< 0.012	< 0.00004 (g/s)	-	-	-	19/03/24

Remarks : Dust Collector No. 5 (Inlet)/D-Line = 47P 0671135 UTM 1561368
Dust Collector No. 5 (Outlet)/D-Line = 47P 0671130 UTM 1561361

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* no established standard

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
02.04.24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager
02.04.24

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TEST REPORT

Analysis No. : R24-0973
Received Date : 18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 21/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/Fume Exhaust	
			2403-AS0717	2403-AS0718
			Fume Exhaust Press No. 13, 14 (Inlet)	Fume Exhaust Press No. 13, 14 (Outlet)
1	Sampling Date	-	15/03/24	15/03/24
2	Stack Diameter	m	Ø 0.50	Ø 0.37
3	Temperature ⁽¹⁾	°C	39	28
4	Stack Gas Velocity ⁽¹⁾	m/s	10.0	9.3
5	Flow Rate ⁽¹⁾	m ³ /s	2.0	1.0
6	Flow Rate ⁽²⁾	Nm ³ /s	1.9	1.0
7	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
8	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure ⁽¹⁾	mm.Hg	757.5	759.1

Parameter	Unit	Method	Result			Analysis Date
			EXTRUSION GROUP/Fume Exhaust			
			2403-AS0717	2403-AS0718		
			Fume Exhaust Press No. 13, 14 (Inlet)	Fume Exhaust Press No. 13, 14 (Outlet)		
NaOH ⁽²⁾	mg/Nm ³	Filtering, Titrimetric (NIOSH 7401, Issue 2 Aug 1994)	< 0.40	< 0.40	< 0.0004 (g/s)	21/03/24

Remarks : Fume Exhaust Press No. 13, 14 (Inlet) = 47P 0671045 UTM 1561229
Fume Exhaust Press No. 13, 14 (Outlet) = 47P 0671044 UTM 1561226

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

02/04/24



Approved by

Mrs. Porntip Pethshee
Laboratory Manager

02/04/24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/D-Line	
			2403-AS0613	2403-AS0614
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)
1	Sampling Date	-	14/03/24	14/03/24
2	Stack Diameter	m	Ø 0.27	Ø 0.27
3	Temperature ⁽¹⁾	°C	220	312
4	Stack Gas Velocity ⁽¹⁾	m/s	7.8	8.2
5	Flow Rate ⁽¹⁾	m ³ /s	0.4	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3	0.2
7	Moisture Content ⁽¹⁾	%	1.84	2.14
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.0	11.4
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	8.0	8.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9	758.9

Parameter	Unit	Method	Result				Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line							
			2403-AS0613		2403-AS0614		(A)	(B)		
			BHF Stack No. 1, 2 (BHF Stack No. 13)		BHF Stack No. 1, 2 (BHF Stack No. 14)					
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.8	0.0007 (g/s)	1.4	0.0003 (g/s)	216	0.09(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	48.80	0.0243 (g/s)	15.40	0.0068 (g/s)	180	0.14(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	78	0.0236 (g/s)	24	0.0064 (g/s)	621	0.30(g/s)	690	14/03/24

Remarks : BHF Stack No. 1, 2 (BHF Stack No. 13) = 47P 0671073 UTM 1561253
BHF Stack No. 1, 2 (BHF Stack No. 14) = 47P 0671074 UTM 1561221

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25^o C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0615
			BHF Stack No. 3 (BHF Stack No. 15)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	310
4	Stack Gas Velocity ⁽¹⁾	m/s	8.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.16
8	O ₂ Rate ⁽¹⁾ , dry basis	%	10.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	7.4
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line					
			2403-AS0615					
			BHF Stack No. 3 (BHF Stack No. 15)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.6	0.0001 (g/s)	216	0.05(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	17.90	0.0085 (g/s)	180	0.08(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	35	0.0101 (g/s)	621	0.16(g/s)	690	14/03/24

Remarks : BHF Stack No. 3 (BHF Stack No. 15) = 47P 0671073 UTM 1561213

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source : Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

02.04.24

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For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0616
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	354
4	Stack Gas Velocity ⁽¹⁾	m/s	9.5
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.32
8	O ₂ Rate ⁽¹⁾ , dry basis	%	9.7
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	10.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line					
			2403-AS0616					
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	0.0002 (g/s)	216	0.09(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	29.30	0.0139 (g/s)	180	0.14(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	36	0.0194 (g/s)	621	0.28(g/s)	690	14/03/24

Remarks : BHF Stack No. 4, 5, 6 (BHF Stack No. 16) = 47P 0671074 UTM 1561191

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Mrs. Wareerut Prachumdaeng

Chief of Laboratory

12.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

12.04.24

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TEST REPORT

Analysis No. : R24-0973
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0617
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	235
4	Stack Gas Velocity ⁽¹⁾	m/s	8.9
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.13
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.0
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.5
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP /D-Line					
			2403-AS0617					
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.9	0.0003 (g/s)	216	0.09(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	41.70	0.0229 (g/s)	180	0.14(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	65	0.0218 (g/s)	621	0.28(g/s)	690	14/03/24

Remarks : BHF Stack No. 4, 5, 6 (BHF Stack No. 17) = 47P 0671074 UTM 1561178

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachundaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02.04.24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0607
			Aging Stack No. 1/Aging Stack A (No. 8)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.35
3	Temperature ⁽¹⁾	°C	105
4	Stack Gas Velocity ⁽¹⁾	m/s	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	0.6
6	Flow Rate ⁽²⁾	Nm ³ /s	0.5
7	Moisture Content ⁽¹⁾	%	1.86
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.8
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2403-AS0607					
			Aging Stack No. 1/ Aging Stack A (No. 8)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	0.0003 (g/s)	216	0.05(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	21.70	0.0203 (g/s)	180	0.07(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	41	0.0234 (g/s)	621	0.15(g/s)	690	14/03/24

Remarks : Aging Stack No. 1/Aging Stack A (No. 8) = 47P 0671201 UTM 1561181

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source : Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
02.04.24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager
02.04.24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0719
			Aging Stack No. 2/Aging Stack B (No. 9)
1	Sampling Date	-	15/03/24
2	Stack Diameter	m	Ø 0.25
3	Temperature ⁽¹⁾	°C	125
4	Stack Gas Velocity ⁽¹⁾	m/s	7.9
5	Flow Rate ⁽¹⁾	m ³ /s	0.4
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.77
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.5
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2403-AS0719					
			Aging Stack No. 2/ Aging Stack B (No. 9)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9	0.0008 (g/s)	216	0.12(g/s)	240	18-19/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.40	0.0161 (g/s)	180	0.18(g/s)	200	15/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	41	0.0132 (g/s)	621	0.38(g/s)	690	15/03/24

Remarks : Aging Stack No. 2/Aging Stack B (No. 9) = 47P 0671195 UTM 1561225

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
02/04/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager
02/04/24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0608
			Aging Stack No. 3/Aging Stack C (No. 10)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	139
4	Stack Gas Velocity ⁽¹⁾	m/s	8.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.4
7	Moisture Content ⁽¹⁾	%	2.12
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.7
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	7.6
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2403-AS0608					
			Aging Stack No. 3/ Aging Stack C (No. 10)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.5	0.0005 (g/s)	216	0.03(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	53.70	0.0360 (g/s)	180	0.05(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	93	0.0380 (g/s)	621	0.10(g/s)	690	14/03/24

Remarks : Aging Stack No. 3/Aging Stack C (No. 10) = 47P 0671186 UTM 1561263

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Mrs. Wareerut Prachumdaeng
Chief of Laboratory
02.04.24

Approved by

Mrs. Pornpip Pethshee
Laboratory Manager
02.04.24



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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0609
			Nitriding Stack No. 1/Nitriding D Line No. 3
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.20
3	Temperature ⁽¹⁾	°C	168
4	Stack Gas Velocity ⁽¹⁾	m/s	9.5
5	Flow Rate ⁽¹⁾	m ³ /s	0.3
6	Flow Rate ⁽²⁾	Nm ³ /s	0.2
7	Moisture Content ⁽¹⁾	%	2.42
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.7
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2403-AS0609					
			Nitriding Stack No. 1/ Nitriding D Line No. 3		(A)		(B)	
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	3.1	0.0006 (g/s)	216	0.03(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	76.00	0.0281 (g/s)	180	0.05(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	85	0.0191 (g/s)	621	0.10(g/s)	690	14/03/24

Remarks : Nitriding Stack No. 1/Nitriding D Line No. 3 = 47P 0671046 UTM 1561255

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Mrs. Wareerut Prachumdaeng

Chief of Laboratory

02/04/24

Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02/04/24



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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0610
			Nitriding Stack No. 2/Nitriding D Line No. 4
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.20
3	Temperature ⁽¹⁾	°C	136
4	Stack Gas Velocity ⁽¹⁾	m/s	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	0.2
6	Flow Rate ⁽²⁾	Nm ³ /s	0.2
7	Moisture Content ⁽¹⁾	%	1.78
8	O ₂ Rate ⁽¹⁾ , dry basis	%	14.1
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	5.8
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2403-AS0610					
			Nitriding Stack No. 2/ Nitriding D Line No. 4		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.7	0.0003 (g/s)	216	0.03(g/s)	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	60.70	0.0172 (g/s)	180	0.05(g/s)	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	78	0.0134 (g/s)	621	0.10(g/s)	690	14/03/24

Remarks : Nitriding Stack No. 2/Nitriding D Line No. 4 = 47P 0671045 UTM 1561258

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02.04.24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 18-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP	
			2403-AS0720	2403-AS0721
			Dust Collector (Inlet)/D-Line	Dust Collector (Outlet)/D-Line
1	Sampling Date	-	15/03/24	15/03/24
2	Stack Diameter	m	Ø 0.30	Ø 0.45
3	Temperature ⁽¹⁾	°C	29	28
4	Stack Gas Velocity ⁽¹⁾	m/s	12.1	7.1
5	Flow Rate ⁽¹⁾	m ³ /s	0.9	1.1
6	Flow Rate ⁽²⁾	Nm ³ /s	0.8	1.1
7	Moisture Content ⁽¹⁾	%	0.97	1.47
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	756.1	759.1

Parameter	Unit	Method	Result			Standard (Without Combustion)	Analysis Date
			EXTRUSION GROUP				
			2403-AS0720	2403-AS0721			
			Dust Collector (Inlet)/D-Line *	Dust Collector (Outlet)/D-Line			
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.9	0.7	0.0008 (g/s)	400	18-19/03/24

Remarks : Dust Collector (Inlet)/D-Line = 47P 0671045 UTM 1561252
Dust Collector (Outlet)/D-Line = 47P 0671044 UTM 1561252

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

02.04.24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 21/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			SURFACE TREATMENT GROUP/Etching Stack (D-Line)	
			2403-AS0722	2403-AS0723
			Eaching Fume (Inlet)	Eaching Fume (Outlet)
1	Sampling Date	-	16/03/24	16/03/24
2	Stack Diameter	m	1.00 x 2.00	1.50 x 1.50
3	Temperature ⁽¹⁾	°C	26	27
4	Stack Gas Velocity ⁽¹⁾	m/s	8.5	8.1
5	Flow Rate ⁽¹⁾	m ³ /s	17.0	18.2
6	Flow Rate ⁽²⁾	Nm ³ /s	16.9	18.1
7	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
8	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure ⁽¹⁾	mm.Hg	756.6	759.2

Parameter	Unit	Method	Result			Analysis Date
			SURFACE TREATMENT GROUP/Etching Stack (D-Line)			
			2403-AS0722	2403-AS0723		
			Eaching Fume (Inlet)	Eaching Fume (Outlet)		
NaOH ⁽²⁾	mg/Nm ³	Filtering, Titrimetric (NIOSH 7401, Issue 2 Aug 1994)	< 0.40	< 0.40	< 0.0072 (g/s)	21/03/24

Remarks : Eaching Fume (Inlet) = 47P 0671276 UTM 1561203

Eaching Fume (Outlet) = 47P 0671272 UTM 1561200

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

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Report Date : 02/04/24
Analysis Date : 18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			SURFACE TREATMENT GROUP/Anodized Stack (D-Line)	
			2403-AS0724	2403-AS0725
			Anodize Fume (Inlet)	Anodize Fume (Outlet)
1	Sampling Date	-	16/03/24	16/03/24
2	Stack Diameter	m	1.00 x 1.70	Ø 1.40
3	Temperature ⁽¹⁾	°C	28	29
4	Stack Gas Velocity ⁽¹⁾	m/s	9.2	8.5
5	Flow Rate ⁽¹⁾	m ³ /s	15.6	13.1
6	Flow Rate ⁽²⁾	Nm ³ /s	15.2	12.8
7	Moisture Content ⁽¹⁾	%	1.55	1.16
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	756.4	759.2

Parameter	Unit	Method	Result			Standard (Without Combustion)		Analysis Date	
			SURFACE TREATMENT GROUP/ Anodized Stack (D-Line)						
			2403-AS0724	2403-AS0725					
			Anodize Fume (Inlet) *	Anodize Fume (Outlet)		(A)	(B)		
H ₂ SO ₄ ⁽²⁾	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	< 0.012	< 0.0006 (g/s)	22.5	1.27(g/s)	25	18/03/24

Remarks : Anodize Fume (Inlet) = 47P 0671282 UTM 1561203
Anodize Fume (Outlet) = 47P 0671281 UTM 1561200

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

.....



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

.....

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TEST REPORT

Analysis No. : R24-0973
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/Paint Line Stack (Paint)/Fab5C	
			2403-AS0552	2403-AS0553
			Paint Line Stack (Painting) (Inlet)	Paint Line Stack (Painting) (Outlet)
1	Sampling Date	-	13/03/24	13/03/24
2	Stack Diameter	m	0.65 x 2.10	1.10 x 1.10
3	Temperature ⁽¹⁾	°C	29	28
4	Stack Gas Velocity ⁽¹⁾	m/s	8.8	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	12.0	8.1
6	Flow Rate ⁽²⁾	Nm ³ /s	11.8	8.0
7	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
8	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.0	759.1

Parameter	Unit	Method	Result			Standard (Without Combustion)			Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Paint)/Fab5C						
			2403-AS0552	2403-AS0553					
			Paint Line Stack (Painting) (Inlet) *	Paint Line Stack (Painting) (Outlet)		(A)	(B)		
Xylene ⁽²⁾	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	< 0.009	< 0.009	< 0.0003 (g/s)	180	1.94(g/s)	200	14-18/03/24

Remarks : Paint Line Stack (Painting) (Inlet) = 47P 0671539 UTM 1561286
Paint Line Stack (Painting) (Outlet) = 47P 0671539 UTM 1561263

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

02.04.24

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TEST REPORT

Analysis No. : R24-0973
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Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-18/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C	
			2403-AS0550	
			Paint Line Stack (Oven) (Outlet)	
1	Sampling Date	-	13/03/24	
2	Stack Diameter	m	0.20 x 0.20	
3	Temperature ⁽¹⁾	°C	77	
4	Stack Gas Velocity ⁽¹⁾	m/s	9.8	
5	Flow Rate ⁽¹⁾	m ³ /s	0.4	
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3	
7	Moisture Content ⁽¹⁾	%	2.18	
8	O ₂ Rate ⁽¹⁾ , dry basis	%	16.5	
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.0	
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.7	

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C					
			2403-AS0550					
			Paint Line Stack (Oven) (Outlet)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.1	0.0007 (g/s)	-	-	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	25.00	0.0154 (g/s)	-	-	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	27	0.0101 (g/s)	-	-	690	13/03/24
Xylene ⁽²⁾	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	0.410	0.0006 (g/s)	180	1.94(g/s)	-*	14-18/03/24

Remarks : Paint Line Stack (Oven) (Outlet) = 47P 0671553 UTM 1561254

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* Reference to Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549), established standard for Xylene without combustion = 200 ppm
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

02.04.24

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Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-15/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/Screw Stack (Oven)/Fab5C
			2403-AS0551
			Screw Stack (Oven) (B or Burner)
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	0.31 x 0.31
3	Temperature ⁽¹⁾	°C	74
4	Stack Gas Velocity ⁽¹⁾	m/s	7.4
5	Flow Rate ⁽¹⁾	m ³ /s	0.7
6	Flow Rate ⁽²⁾	Nm ³ /s	0.6
7	Moisture Content ⁽¹⁾	%	2.70
8	O ₂ Rate ⁽¹⁾ , dry basis	%	15.3
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	3.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	752.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C					
			2403-AS0551					
			Screw Stack (Oven) (B or Burner)		(A)	(B)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.4	0.0014 (g/s)	216	0.04(g/s)	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	9.13	0.0101 (g/s)	180	0.07(g/s)	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	15	0.0101 (g/s)	621	0.13(g/s)	690	13/03/24

Remarks : Screw Stack (Oven) (B or Burner) = 47P 0671605 UTM 1561279

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02.04.24

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Analysis No. : R24-0973
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For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/Dipping Color Stack/Fab5C	
			2403-AS0554	2403-AS0555
			Dipping Color Stack (Inlet)	Dipping Color Stack (Outlet)
1	Sampling Date	-	13/03/24	13/03/24
2	Stack Diameter	m	Ø 0.30	Ø 0.30
3	Temperature ⁽¹⁾	°C	35	31
4	Stack Gas Velocity ⁽¹⁾	m/s	15.8	9.8
5	Flow Rate ⁽¹⁾	m ³ /s	1.1	0.7
6	Flow Rate ⁽²⁾	Nm ³ /s	1.1	0.7
7	Moisture Content ⁽¹⁾	%	1.28	1.54
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.3	759.3

Parameter	Unit	Method	Result			Standard (Without Combustion)		Analysis Date	
			PART PRODUCT GROUP/ Dipping Color Stack/Fab5C						
			2403-AS0554	2403-AS0555					
			Dipping Color Stack (Inlet) *	Dipping Color Stack (Outlet)		(A)	(B)		
H ₂ SO ₄ ⁽²⁾	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	< 0.012	< 0.00003 (g/s)	22.5	0.30(g/s)	25	15/03/24

Remarks : Dipping Color Stack (Inlet) = 47P 0671603 UTM 1561271
Dipping Color Stack (Outlet) = 47P 0671605 UTM 1561274

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

* no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02.04.24

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TEST REPORT

Analysis No. : R24-0973
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Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-19/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			ENG/Boiler Stack No. 1
			2403-AS0726
			Boiler Stack No. 1, 2, 3/North
1	Sampling Date	-	15/03/24
2	Stack Diameter	m	Ø 0.80
3	Temperature ⁽¹⁾	°C	92
4	Stack Gas Velocity ⁽¹⁾	m/s	6.8
5	Flow Rate ⁽¹⁾	m ³ /s	3.4
6	Flow Rate ⁽²⁾	Nm ³ /s	2.7
7	Moisture Content ⁽¹⁾	%	3.07
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.1
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			ENG/Boiler Stack No. 1						
			2403-AS0726						
			Boiler Stack No. 1, 2, 3/North			(A)	(B)		
Particulate	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.2 ⁽²⁾	0.0032 (g/s)	1.8 ⁽³⁾	216	0.23(g/s)	320	18-19/03/24
NO _x as NO ₂	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	38.70 ⁽²⁾	0.1968 (g/s)	61.13 ⁽³⁾	180	0.37(g/s)	200	15/03/24
CO	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	31 ⁽²⁾	0.0960 (g/s)	49 ⁽³⁾	621	0.77(g/s)	690	15/03/24

Remarks : Boiler Stack No. 1, 2, 3/North = 47P 0671014 UTM 1561326

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (closed system)

(3) The concentrations of air emissions are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg, excess oxygen of 7 % and dry basis, (closed system)

Standard (A) According to Specified Requirement Environmental Impact Assessment of Tostem Thai Co., Ltd. (2006) (B.E. 2549) (North Factory)

(B) Notification of the Ministry of Industry (2006) (B.E. 2549) and Notification of the Ministry of Natural Resources and Environment (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

02.04.24



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

02.04.24

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Page 1 of 20

TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 14/03/24
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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-15/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ว-236-ก-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Melting Stack
			2403-AS0546
			Melting Stack No. 3/D-Line
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	Ø 1.60
3	Temperature ⁽¹⁾	°C	218
4	Stack Gas Velocity ⁽¹⁾	m/s	10.4
5	Flow Rate ⁽¹⁾	m ³ /s	20.9
6	Flow Rate ⁽²⁾	Nm ³ /s	12.3
7	Moisture Content ⁽¹⁾	%	2.95
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	5.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Melting Stack		
			2403-AS0546		
			Melting Stack No. 3/D-Line		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	4.7	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.70	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	14	690	13/03/24

Remarks : Melting Stack No. 3/D-Line = 47P 0671141 UTM 1561322

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

ว-236-ก-0002

02/04/24



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

ว-236-ก-0003

02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 14/03/24
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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-15/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๓-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Homogenize Stack
			2403-AS0547
			Homogenize Stack No. 3/D-Line
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	Ø 0.60
3	Temperature ⁽¹⁾	°C	200
4	Stack Gas Velocity ⁽¹⁾	m/s	8.7
5	Flow Rate ⁽¹⁾	m ³ /s	2.5
6	Flow Rate ⁽²⁾	Nm ³ /s	1.5
7	Moisture Content ⁽¹⁾	%	3.17
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.4
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	8.6
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Homogenize Stack		
			2403-AS0547		
			Homogenize Stack No. 3/D-Line		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.6	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.80	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	17	690	13/03/24

Remarks : Homogenize Stack No. 3/D-Line = 47P 0671078 UTM 1561331

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๓-236-จ-0002
02/04/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

๓-236-จ-0003
02/04/24

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Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-15/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๓-236-๓-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Dust Collector Melting Furnace
			2403-AS0549
			Dust Collector No. 4 (Outlet)/D-Line
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	Ø 1.50
3	Temperature ⁽¹⁾	°C	52
4	Stack Gas Velocity ⁽¹⁾	m/s	9.1
5	Flow Rate ⁽¹⁾	m ³ /s	16.1
6	Flow Rate ⁽²⁾	Nm ³ /s	14.4
7	Moisture Content ⁽¹⁾	%	2.29
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Dust Collector Melting Furnace		
			2403-AS0549		
			Dust Collector No. 4 (Outlet)/ D-Line		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	1.20	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	7	690	13/03/24

Remarks : Dust Collector No. 4 (Outlet)/D-Line = 47P 0671148 UTM 1561303
(1) Flue conditions
(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)
Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
๓-236-๓-0002
02/04/24



Approved by

Mrs. Porntip Pethshee
Laboratory Manager
๓-236-๓-0003
02/04/24

- PRIVATE LABORATORY REGISTERED NO. ๓-236
- REPORTED RESULTS REFER TO SUBMITTED SAMPLE(S) ONLY
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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๖-236-๖-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Dust Collector Dross Recovery
			2403-AS0612
			Dust Collector No. 5 (Outlet)/D-Line
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.76
3	Temperature ⁽¹⁾	°C	50
4	Stack Gas Velocity ⁽¹⁾	m/s	9.3
5	Flow Rate ⁽¹⁾	m ³ /s	4.2
6	Flow Rate ⁽²⁾	Nm ³ /s	3.8
7	Moisture Content ⁽¹⁾	%	1.24
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/Dust Collector		
			Dross Recovery		
			2403-AS0612		
			Dust Collector No. 5 (Outlet)/ D-Line		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	5.4	240	15-18/03/24

Remarks : Dust Collector No. 5 (Outlet)/D-Line = 47P 0671130 UTM 1561361

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-๖-0002

02/04/24



Approved by

Mrs. Pornip Pethshee
Laboratory Manager

๖-236-๖-0003

02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
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For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : จ-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/D-Line	
			2403-AS0613	2403-AS0614
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)
1	Sampling Date	-	14/03/24	14/03/24
2	Stack Diameter	m	Ø 0.27	Ø 0.27
3	Temperature ⁽¹⁾	°C	220	312
4	Stack Gas Velocity ⁽¹⁾	m/s	7.8	8.2
5	Flow Rate ⁽¹⁾	m ³ /s	0.4	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3	0.2
7	Moisture Content ⁽¹⁾	%	1.84	2.14
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.0	11.4
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	8.0	8.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9	758.9

Parameter	Unit	Method	Result		Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line			
			2403-AS0613	2403-AS0614		
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.8	1.4	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	48.80	15.40	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	78	24	690	14/03/24

Remarks : BHF Stack No. 1, 2 (BHF Stack No. 13) = 47P 0671073 UTM 1561253

BHF Stack No. 1, 2 (BHF Stack No. 14) = 47P 0671074 UTM 1561221

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
จ-236-จ-0002
02/04/24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager
จ-236-จ-0003
02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Report Date : 02/04/24
Received Date : 15/03/24
Analysis Date : 14-18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
Job No. : S670326/Mar
For Tostem Thai Co., Ltd./North Factory/EIA
Sampling By : Mr. Jirawad Intasay
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Registration No. : ๖-236-๖-0013
Klongnueng, Klongluang, Pathumthani 12120
Type of Sample : Stack
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0615
			BHF Stack No. 3 (BHF Stack No. 15)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	310
4	Stack Gas Velocity ⁽¹⁾	m/s	8.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.16
8	O ₂ Rate ⁽¹⁾ , dry basis	%	10.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	7.4
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2403-AS0615		
			BHF Stack No. 3 (BHF Stack No. 15)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.6	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	17.90	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	35	690	14/03/24

Remarks : BHF Stack No. 3 (BHF Stack No. 15) = 47P 0671073 UTM 1561213

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
๖-236-๖-0002
๑๕/๐๔/๒๔



Approved by

Mrs. Porntip Pethshee
Laboratory Manager
๖-236-๖-0003
๑๕/๐๔/๒๔

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๖-236-๖-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0616
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	354
4	Stack Gas Velocity ⁽¹⁾	m/s	9.5
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.32
8	O ₂ Rate ⁽¹⁾ , dry basis	%	9.7
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	10.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2403-AS0616		
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	29.30	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	36	690	14/03/24

Remarks : BHF Stack No. 4, 5, 6 (BHF Stack No. 16) = 47P 0671074 UTM 1561191

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-๖-0002

02/04/24



Approved by

Mrs. Pornpit Pethshee
Laboratory Manager

๖-236-๖-0003

02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ๖-236-ก-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2403-AS0617
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	235
4	Stack Gas Velocity ⁽¹⁾	m/s	8.9
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.13
8	O ₂ Rate ⁽¹⁾ , dry basis	%	11.0
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.5
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	758.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2403-AS0617		
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.9	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	41.70	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	65	690	14/03/24

Remarks : BHF Stack No. 4, 5, 6 (BHF Stack No. 17) = 47P 0671074 UTM 1561178

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-ก-0002

02/04/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

๖-236-ก-0003

12/03/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ๓-236-ก-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0607
			Aging Stack No. 1/Aging Stack A (No. 8)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.35
3	Temperature ⁽¹⁾	°C	105
4	Stack Gas Velocity ⁽¹⁾	m/s	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	0.6
6	Flow Rate ⁽²⁾	Nm ³ /s	0.5
7	Moisture Content ⁽¹⁾	%	1.86
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.8
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0607		
			Aging Stack No. 1/ Aging Stack A (No. 8)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	21.70	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	41	690	14/03/24

Remarks : Aging Stack No. 1/Aging Stack A (No. 8) = 47P 0671201 UTM 1561181

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachundaeng
Chief of Laboratory

๓-236-ก-0002
12.04.24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager

๓-236-ก-0003
12.04.24

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TEST REPORT

Analysis No. : R24-0973/DIW **Report Date** : 02/04/24
Received Date : 18/03/24 **Analysis Date** : 15-19/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA **Job No.** : S670326/Mar
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120 **Sampling By** : Mr. Jirawad Intasay
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385 **Registration No.** : จ-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0719
			Aging Stack No. 2/Aging Stack B (No. 9)
1	Sampling Date	-	15/03/24
2	Stack Diameter	m	Ø 0.25
3	Temperature ⁽¹⁾	°C	125
4	Stack Gas Velocity ⁽¹⁾	m/s	7.9
5	Flow Rate ⁽¹⁾	m ³ /s	0.4
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.77
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.5
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0719		
			Aging Stack No. 2/ Aging Stack B (No. 9)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9	240	18-19/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.40	200	15/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	41	690	15/03/24

Remarks : Aging Stack No. 2/Aging Stack B (No. 9) = 47P 0671195 UTM 1561225

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

จ-236-ท-0002
02.04.24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager

จ-236-ท-0003
02.04.24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : จ-236-ก-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0608
			Aging Stack No. 3/Aging Stack C (No. 10)
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.27
3	Temperature ⁽¹⁾	°C	139
4	Stack Gas Velocity ⁽¹⁾	m/s	8.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.5
6	Flow Rate ⁽²⁾	Nm ³ /s	0.4
7	Moisture Content ⁽¹⁾	%	2.12
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.7
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	7.6
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0608		
			Aging Stack No. 3/ Aging Stack C (No. 10)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.5	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	53.70	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	93	690	14/03/24

Remarks : Aging Stack No. 3/Aging Stack C (No. 10) = 47P 0671186 UTM 1561263

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachundaeng
Chief of Laboratory

จ-236-ก-0002

02/04/24



Approved by

Mrs. Porntip Pethshee
Laboratory Manager

จ-236-ก-0003

02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW **Report Date** : 02/04/24
Received Date : 15/03/24 **Analysis Date** : 14-18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA **Job No.** : S670326/Mar
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120 **Sampling By** : Mr. Pramual Moonsarn
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385 **Registration No.** : จ-236-ค-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0609
			Nitriding Stack No. 1/Nitriding D Line No. 3
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.20
3	Temperature ⁽¹⁾	°C	168
4	Stack Gas Velocity ⁽¹⁾	m/s	9.5
5	Flow Rate ⁽¹⁾	m ³ /s	0.3
6	Flow Rate ⁽²⁾	Nm ³ /s	0.2
7	Moisture Content ⁽¹⁾	%	2.42
8	O ₂ Rate ⁽¹⁾ , dry basis	%	13.2
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.7
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0609		
			Nitriding Stack No. 1/ Nitriding D Line No. 3		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	3.1	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	76.00	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	85	690	14/03/24

Remarks : Nitriding Stack No. 1/Nitriding D Line No. 3 = 47P 0671046 UTM 1561255

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

จ-236-ค-0002
02/04/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

จ-236-ค-0003
02/04/24

- PRIVATE LABORATORY REGISTERED NO. จ-236
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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 15/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ๖-236-ค-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0610
			Nitriding Stack No. 2/Nitriding D Line No. 4
1	Sampling Date	-	14/03/24
2	Stack Diameter	m	Ø 0.20
3	Temperature ⁽¹⁾	°C	136
4	Stack Gas Velocity ⁽¹⁾	m/s	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	0.2
6	Flow Rate ⁽²⁾	Nm ³ /s	0.2
7	Moisture Content ⁽¹⁾	%	1.78
8	O ₂ Rate ⁽¹⁾ , dry basis	%	14.1
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	5.8
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0610		
			Nitriding Stack No. 2/ Nitriding D Line No. 4		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.7	240	15-18/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	60.70	200	14/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	78	690	14/03/24

Remarks : Nitriding Stack No. 2/Nitriding D Line No. 4 = 47P 0671045 UTM 1561258

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-ค-0002
12/04/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

๖-236-ค-0003
12/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385


Report Date : 02/04/24
Analysis Date : 18-19/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๖-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

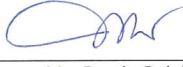
Item	Description	Unit	Result
			EXTRUSION GROUP
			2403-AS0721
			Dust Collector (Outlet)/D-Line
1	Sampling Date	-	15/03/24
2	Stack Diameter	m	Ø 0.45
3	Temperature ⁽¹⁾	°C	28
4	Stack Gas Velocity ⁽¹⁾	m/s	7.1
5	Flow Rate ⁽¹⁾	m ³ /s	1.1
6	Flow Rate ⁽²⁾	Nm ³ /s	1.1
7	Moisture Content ⁽¹⁾	%	1.47
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			EXTRUSION GROUP		
			2403-AS0721		
			Dust Collector (Outlet)/D-Line		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	400	18-19/03/24

Remarks : Dust Collector (Outlet)/D-Line = 47P 0671044 UTM 1561252
(1) Flue conditions
(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis
Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Reviewed by 
Ms. Wareerut Prachumdaeng
Chief of Laboratory
๖-236-จ-0002
.....



Approved by 
Mrs. Pornpip Pethshee
Laboratory Manager
๖-236-จ-0003
.....

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TEST REPORT

Analysis No. : R24-0973/DIW
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Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Rattapon Sukdee
Registration No. : จ-236-ก-0006
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			SURFACE TREATMENT GROUP/Anodized Stack (D-Line)
			2403-AS0725
			Anodize Fume (Outlet)
1	Sampling Date	-	16/03/24
2	Stack Diameter	m	Ø 1.40
3	Temperature ⁽¹⁾	°C	29
4	Stack Gas Velocity ⁽¹⁾	m/s	8.5
5	Flow Rate ⁽¹⁾	m ³ /s	13.1
6	Flow Rate ⁽²⁾	Nm ³ /s	12.8
7	Moisture Content ⁽¹⁾	%	1.16
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			SURFACE TREATMENT GROUP/ Anodized Stack (D-Line)		
			2403-AS0725		
			Anodize Fume (Outlet)		
H ₂ SO ₄ ⁽²⁾	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	25	18/03/24

Remarks : Anodize Fume (Outlet) = 47P 0671281 UTM 1561200

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory
จ-236-ก-0002
18/03/24



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager
จ-236-ก-0003
18/03/24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 14-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๖-236-๖-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/Paint Line Stack (Paint)/Fab5C
			2403-AS0553
			Paint Line Stack (Painting) (Outlet)
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	1.10 x 1.10
3	Temperature ⁽¹⁾	°C	28
4	Stack Gas Velocity ⁽¹⁾	m/s	6.7
5	Flow Rate ⁽¹⁾	m ³ /s	8.1
6	Flow Rate ⁽²⁾	Nm ³ /s	8.0
7	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
8	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
9	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.1

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Paint)/Fab5C		
			2403-AS0553		
			Paint Line Stack (Painting) (Outlet)		
Xylene ⁽²⁾	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	< 0.009	200	14-18/03/24

Remarks : Paint Line Stack (Painting) (Outlet) = 47P 0671539 UTM 1561263

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-๖-0002
02/04/24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager

๖-236-๖-0003
02/04/24

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TEST REPORT

Analysis No. : R24-0973/DIW
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Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-18/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ๓-236-ก-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C
			2403-AS0550
			Paint Line Stack (Oven) (Outlet)
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	0.20 x 0.20
3	Temperature ⁽¹⁾	°C	77
4	Stack Gas Velocity ⁽¹⁾	m/s	9.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.4
6	Flow Rate ⁽²⁾	Nm ³ /s	0.3
7	Moisture Content ⁽¹⁾	%	2.18
8	O ₂ Rate ⁽¹⁾ , dry basis	%	16.5
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	4.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.7

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C		
			2403-AS0550		
			Paint Line Stack (Oven) (Outlet)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.1	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	25.00	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	27	690	13/03/24
Xylene ⁽²⁾	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	0.410	-*	14-18/03/24

Remarks : Paint Line Stack (Oven) (Outlet) = 47P 0671553 UTM 1561254

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

* Reference to Notification of the Ministry of Industry (2006) (B.E. 2549), established standard for Xylene without combustion = 200 ppm
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๓-236-ก-0002
๑๔/๐๓/๒๔



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

๓-236-ก-0003
๑๔/๐๓/๒๔

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 13-15/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๓-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C
			2403-AS0551
			Screw Stack (Oven) (B or Burner)
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	0.31 x 0.31
3	Temperature ⁽¹⁾	°C	74
4	Stack Gas Velocity ⁽¹⁾	m/s	7.4
5	Flow Rate ⁽¹⁾	m ³ /s	0.7
6	Flow Rate ⁽²⁾	Nm ³ /s	0.6
7	Moisture Content ⁽¹⁾	%	2.70
8	O ₂ Rate ⁽¹⁾ , dry basis	%	15.3
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	3.1
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	752.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C		
			2403-AS0551		
			Screw Stack (Oven) (B or Burner)		
Particulate ⁽²⁾	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.4	240	14-15/03/24
NO _x as NO ₂ ⁽²⁾	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	9.13	200	13/03/24
CO ⁽²⁾	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	15	690	13/03/24

Remarks : Screw Stack (Oven) (B or Burner) = 47P 0671605 UTM 1561279

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (open system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๓-236-ก-0002
๑๔/๐๓/๒๔



Approved by

Mrs. Pornpip Pethshee
Laboratory Manager

๓-236-ก-0003
๑๔/๐๓/๒๔

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1/6 ซอยรามคำแหง 145 แขวงสะพานสูง เขตสะพานสูง กรุงเทพมหานคร 10240

E-mail : admin@tet1995.com

Tel : 0-2373-7799 (Auto) Fax : 0-2373-7979

Page 19 of 20

TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 14/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15/03/24
Job No. : S670326/Mar
Sampling By : Mr. Jirawad Intasay
Registration No. : ๓-236-จ-0013
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/Dipping Color Stack/Fab5C
			2403-AS0555
			Dipping Color Stack (Outlet)
1	Sampling Date	-	13/03/24
2	Stack Diameter	m	Ø 0.30
3	Temperature ⁽¹⁾	°C	31
4	Stack Gas Velocity ⁽¹⁾	m/s	9.8
5	Flow Rate ⁽¹⁾	m ³ /s	0.7
6	Flow Rate ⁽²⁾	Nm ³ /s	0.7
7	Moisture Content ⁽¹⁾	%	1.54
8	O ₂ Rate ⁽¹⁾ , dry basis	%	20.9
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	< 1.0
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.3

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			PART PRODUCT GROUP/ Dipping Color Stack/Fab5C		
			2403-AS0555		
			Dipping Color Stack (Outlet)		
H ₂ SO ₄ ⁽²⁾	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	25	15/03/24

Remarks : Dipping Color Stack (Outlet) = 47P 0671605 UTM 1561274

(1) Flue conditions

(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๓-236-จ-0002
02.04.24



Approved by

Mrs. Pomtip Pethshee
Laboratory Manager

๓-236-จ-0003
02.04.24

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TEST REPORT

Analysis No. : R24-0973/DIW
Received Date : 18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-19/03/24
Job No. : S670326/Mar
Sampling By : Mr. Pramual Moonsarn
Registration No. : ๖-236-ค-0005
Type of Sample : Stack

Sampling Conditions :

Item	Description	Unit	Result
			ENG/Boiler Stack No. 1
			2403-AS0726
			Boiler Stack No. 1, 2, 3/North
1	Sampling Date	-	15/03/24
2	Stack Diameter	m	Ø 0.80
3	Temperature ⁽¹⁾	°C	92
4	Stack Gas Velocity ⁽¹⁾	m/s	6.8
5	Flow Rate ⁽¹⁾	m ³ /s	3.4
6	Flow Rate ⁽²⁾	Nm ³ /s	2.7
7	Moisture Content ⁽¹⁾	%	3.07
8	O ₂ Rate ⁽¹⁾ , dry basis	%	12.1
9	CO ₂ Rate ⁽¹⁾ , dry basis	%	6.2
10	Absolute Stack Pressure ⁽¹⁾	mm.Hg	759.2

Parameter	Unit	Method	Result		Standard (With Combustion)	Analysis Date
			ENG/Boiler Stack No. 1			
			2403-AS0726			
			Boiler Stack No. 1, 2, 3/North			
Particulate	mg/Nm ³	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.2 ⁽²⁾	1.8 ⁽³⁾	320	18-19/03/24
NO _x as NO ₂	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	38.70 ⁽²⁾	61.13 ⁽³⁾	200	15/03/24
CO	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	31 ⁽²⁾	49 ⁽³⁾	690	15/03/24

Remarks : Boiler Stack No. 1, 2, 3/North = 47P 0671014 UTM 1561326

- (1) Flue conditions
(2) The concentrations of air emissions and emission rate are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg and dry basis, (closed system)
(3) The concentrations of air emissions are based on the reference condition of 25 °C at 1 atm or 760 mm.Hg, excess oxygen of 7 % and dry basis, (closed system)

Standard : Notification of the Ministry of Industry (2006) (B.E. 2549)
Source ; Natural Gas

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory

๖-236-ค-0002
๑๕/๐๓/๒๔



Approved by

Mrs. Porntip Pethshee
Laboratory Manager

๖-236-ค-0003
๑๕/๐๓/๒๔

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TEST REPORT

Analysis No. : R24-0973
Received Date : 15-18/03/24
Customer : Technical Division of Thai Environmental Technic Limited
For Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,
Klongnueng, Klongluang, Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Report Date : 02/04/24
Analysis Date : 15-20/03/24
Job No. : S670326/Mar
Sampling By : TET
Type of Sample : Ambient Air

Sampling Point	Sample No.	Sampling Date	Result			
			TSP (mg/m ³)	PM-10 (mg/m ³)	SO ₂ (mg/m ³)	CO ^(8 hr.) (ppm)
วัดโพธิ์นิม (47P 0670773 UTM 1560877)	2403-AA0618	13-14/03/24	0.052	0.012	< 0.001	0.37
	2403-AA0709	14-15/03/24	0.070	0.024	< 0.001	0.39
	2403-AA0713	15-16/03/24	0.048	0.018	< 0.001	0.36
โรงเรียนวัดพิชนิมิตร (47P 0671157 UTM 1562549)	2403-AA0619	13-14/03/24	0.139	0.026	< 0.001	0.41
	2403-AA0710	14-15/03/24	0.123	0.047	< 0.001	0.44
	2403-AA0714	15-16/03/24	0.089	0.026	< 0.001	0.42
วัดโกเมศรัตนาราม (47P 0669803 UTM 1560300)	2403-AA0620	13-14/03/24	0.052	0.030	< 0.001	0.34
	2403-AA0711	14-15/03/24	0.057	0.037	< 0.001	0.36
	2403-AA0715	15-16/03/24	0.042	0.026	< 0.001	0.37
บริเวณพื้นที่โครงการ (โรงงานเหนือ) (47P 0671020 UTM 1561185)	2403-AA0621	13-14/03/24	0.072	0.032	< 0.001	0.53
	2403-AA0712	14-15/03/24	0.080	0.061	< 0.001	0.57
	2403-AA0716	15-16/03/24	0.083	0.059	< 0.001	0.55
Standard			0.33	0.12	0.30	9

Remarks : Concentration of each gas in Ambient is based on 1 atm and 25 °C
Analysis Date : TSP, PM-10 (2403-AA0618, 2403-AA0619, 2403-AA0620, 2403-AA0621)/15-18/03/24, (2403-AA0709, 2403-AA0710, 2403-AA0711, 2403-AA0712, 2403-AA0713, 2403-AA0714, 2403-AA0715, 2403-AA0716)/18-20/03/24
SO₂ (2403-AA0618, 2403-AA0619, 2403-AA0620, 2403-AA0621, 2403-AA0709, 2403-AA0710, 2403-AA0711, 2403-AA0712, 2403-AA0713, 2403-AA0714, 2403-AA0715, 2403-AA0716)/19/03/24
CO (2403-AA0618, 2403-AA0619, 2403-AA0620, 2403-AA0621)/15/03/24, (2403-AA0709, 2403-AA0710, 2403-AA0711, 2403-AA0712, 2403-AA0713, 2403-AA0714, 2403-AA0715, 2403-AA0716)/18/03/24
Method : TSP = Gravimetric Method (US.EPA 40 CFR Part 50 Appendix B)
PM-10 = Gravimetric Method (US.EPA 40 CFR Part 50 Appendix J)
SO₂ = Pararosaniline Method (APHA704)
CO = NDIR Method (US.EPA 40 CFR Part 50 Appendix C)
Standard : Notification of the National Environment Board No. 10 (1995) (B.E. 2538) and No. 24 (2004) (B.E. 2547), 24-hr. average value

Reviewed by

Ms. Wareerut Prachumdaeng
Chief of Laboratory



Approved by

Mrs. Porntip Pethshee
Laboratory Manager

..... END OF REPORT

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1/6 ซอยรามคำแหง 145 แขวงสะพานสูง เขตสะพานสูง กรุงเทพมหานคร 10240

Tel : 0-2373-7799 (Auto) Fax : 0-2373-7979

TEST REPORT

Customer Name : Tostem Thai Co., Ltd./North Factory/EIA
Address : 101/104 Moo 20, Soi Navanakorn 1,
Phaholyothin Rd., Klongnueng, Klongluang,
Pathumthani 12120
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385
Job No. : S670326/Mar

Report No. : 0973/2024/1-12
Report Date : March 21, 2024
Sampling Date : March 13-16, 2024
Type of Sample : Ambient Air

Item	Time	Result		
		วัดโพธิ์นิม		
		NO ₂ (ppm)		
		13-14/03/24	14-15/03/24	15-16/03/24
1.	12:00-13:00	0.0021	0.0016	0.0028
2.	13:00-14:00	0.0014	0.0028	0.0023
3.	14:00-15:00	0.0034	0.0015	0.0019
4.	15:00-16:00	0.0028	0.0015	0.0021
5.	16:00-17:00	0.0028	0.0020	0.0031
6.	17:00-18:00	0.0019	0.0022	0.0024
7.	18:00-19:00	0.0022	0.0024	0.0020
8.	19:00-20:00	0.0025	0.0024	0.0015
9.	20:00-21:00	0.0027	0.0022	0.0014
10.	21:00-22:00	0.0026	0.0022	0.0016
11.	22:00-23:00	0.0025	0.0022	0.0015
12.	23:00-00:00	0.0027	0.0025	0.0014
13.	00:00-01:00	0.0029	0.0025	0.0018
14.	01:00-02:00	0.0030	0.0022	0.0015
15.	02:00-03:00	0.0026	0.0020	0.0015
16.	03:00-04:00	0.0027	0.0021	0.0016
17.	04:00-05:00	0.0023	0.0021	0.0015
18.	05:00-06:00	0.0022	0.0019	0.0015
19.	06:00-07:00	0.0019	0.0021	0.0018
20.	07:00-08:00	0.0024	0.0033	0.0024
21.	08:00-09:00	0.0030	0.0016	0.0023
22.	09:00-10:00	0.0025	0.0018	0.0018
23.	10:00-11:00	0.0018	0.0018	0.0021
24.	11:00-12:00	0.0017	0.0015	0.0023
Minimum		0.0014	0.0015	0.0014
Maximum		0.0034	0.0033	0.0031
Average		0.0024	0.0021	0.0019
Standard ⁽¹⁾		0.17		

Standard : ⁽¹⁾ Notification of the National Environment Board No. 33 (2009) (B.E. 2552)

Pramual M.

Pramual Moonsarn



Wannasiri S.

Wannasiri Suriyawong

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Tel : 0-2373-7799 (Auto) Fax : 0-2373-7979

TEST REPORT

Customer Name : Tostem Thai Co., Ltd./North Factory/EIA

Report No. : 0973/2024/2-12

Address : 101/104 Moo 20, Soi Navanakorn 1,
Phaholyothin Rd., Klongnueng, Klongluang,
Pathumthani 12120

Report Date : March 21, 2024

Sampling Date : March 13-16, 2024

Type of Sample : Ambient Air

Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Job No. : S670326/Mar

Item	Time	Result		
		โรงเรียนวัดพิชนิมิตร		
		NO ₂ (ppm)		
		13-14/03/24	14-15/03/24	15-16/03/24
1.	10:00-11:00	0.0022	0.0015	0.0015
2.	11:00-12:00	0.0014	0.0014	0.0017
3.	12:00-13:00	0.0014	0.0012	0.0020
4.	13:00-14:00	0.0013	0.0025	0.0014
5.	14:00-15:00	0.0024	0.0019	0.0021
6.	15:00-16:00	0.0012	0.0016	0.0012
7.	16:00-17:00	0.0011	0.0018	0.0026
8.	17:00-18:00	0.0016	0.0027	0.0028
9.	18:00-19:00	0.0019	0.0021	0.0018
10.	19:00-20:00	0.0020	0.0016	0.0011
11.	20:00-21:00	0.0021	0.0012	0.0012
12.	21:00-22:00	0.0018	0.0011	0.0010
13.	22:00-23:00	0.0018	0.0012	0.0011
14.	23:00-00:00	0.0018	0.0012	0.0011
15.	00:00-01:00	0.0022	0.0011	0.0010
16.	01:00-02:00	0.0022	0.0015	0.0011
17.	02:00-03:00	0.0019	0.0011	0.0014
18.	03:00-04:00	0.0017	0.0011	0.0015
19.	04:00-05:00	0.0017	0.0013	0.0018
20.	05:00-06:00	0.0018	0.0011	0.0017
21.	06:00-07:00	0.0015	0.0012	0.0015
22.	07:00-08:00	0.0017	0.0015	0.0015
23.	08:00-09:00	0.0029	0.0020	0.0020
24.	09:00-10:00	0.0013	0.0019	0.0023
Minimum		0.0011	0.0011	0.0010
Maximum		0.0029	0.0027	0.0028
Average		0.0018	0.0015	0.0016
Standard ⁽¹⁾		0.17		

Standard : ⁽¹⁾ Notification of the National Environment Board No. 33 (2009) (B.E. 2552)

Pramual M.

Pramual Moonsarn



Wannasiri S.

Wannasiri Suriyawong

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1/6 ซอยรามคำแหง 145 แขวงสะพานสูง เขตสะพานสูง กรุงเทพมหานคร 10240

Tel : 0-2373-7799 (Auto) Fax : 0-2373-7979

TEST REPORT

Customer Name : Tostem Thai Co., Ltd./North Factory/EIA

Report No. : 0973/2024/3-12

Address : 101/104 Moo 20, Soi Navanakorn 1,
Phaholyothin Rd., Klongnueng, Klongluang,
Pathumthani 12120

Report Date : March 21, 2024

Sampling Date : March 13-16, 2024

Type of Sample : Ambient Air

Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

Job No. : S670326/Mar

Item	Time	Result		
		วัดโกเมศรัตนาราม		
		NO ₂ (ppm)		
		13-14/03/24	14-15/03/24	15-16/03/24
1.	11:00-12:00	0.0023	0.0029	0.0010
2.	12:00-13:00	0.0023	0.0031	0.0011
3.	13:00-14:00	0.0021	0.0033	0.0022
4.	14:00-15:00	0.0020	0.0033	0.0011
5.	15:00-16:00	0.0025	0.0035	0.0011
6.	16:00-17:00	0.0023	0.0027	0.0012
7.	17:00-18:00	0.0023	0.0026	0.0011
8.	18:00-19:00	0.0016	0.0040	0.0020
9.	19:00-20:00	0.0017	0.0028	0.0017
10.	20:00-21:00	0.0018	0.0024	0.0022
11.	21:00-22:00	0.0019	0.0024	0.0013
12.	22:00-23:00	0.0018	0.0022	0.0013
13.	23:00-00:00	0.0014	0.0018	0.0012
14.	00:00-01:00	0.0010	0.0013	0.0013
15.	01:00-02:00	0.0013	0.0016	0.0011
16.	02:00-03:00	0.0010	0.0022	0.0016
17.	03:00-04:00	0.0019	0.0015	0.0016
18.	04:00-05:00	0.0013	0.0017	0.0012
19.	05:00-06:00	0.0023	0.0013	0.0016
20.	06:00-07:00	0.0036	0.0012	0.0020
21.	07:00-08:00	0.0026	0.0010	0.0020
22.	08:00-09:00	0.0021	0.0021	0.0016
23.	09:00-10:00	0.0027	0.0027	0.0016
24.	10:00-11:00	0.0023	0.0015	0.0017
Minimum		0.0010	0.0010	0.0010
Maximum		0.0036	0.0040	0.0022
Average		0.0020	0.0023	0.0015
Standard ⁽¹⁾		0.17		

Standard : ⁽¹⁾ Notification of the National Environment Board No. 33 (2009) (B.E. 2552)

Pramual M.

Pramual Moonsarn



Wannasiri S.

Wannasiri Suriyawong

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