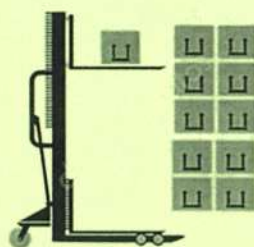
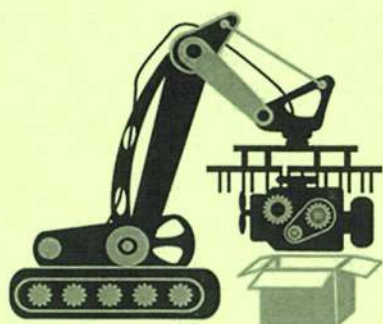


## ภาคผนวก ข

### รายงานผลการวิเคราะห์





## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Melting Stack	
			2309-AS0404	
			Melting Stack No. 3/D-Line	
1	Sampling Date	-	14/09/23	
2	Stack Diameter	m	Ø 1.60	
3	Temperature <sup>(1)</sup>	°C	224	
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.6	
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	21.3	
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	12.3	
7	Moisture Content <sup>(1)</sup>	%	3.45	
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	12.0	
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	4.8	
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2	

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Melting Stack					
			2309-AS0404					
			Melting Stack No. 3/D-Line		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	5.2	0.0642 (g/s)	216	1.19 (g/s)	240	15-19/09/23
HF <sup>(2)</sup>	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	< 0.012	< 0.0001 (g/s)	-	-	-	18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	33.40	0.7717 (g/s)	180	1.87 (g/s)	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	13	0.1828 (g/s)	621	3.92 (g/s)	690	14/09/23

**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

29/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Homogenize Stack
			2309-AS0403
			Homogenize Stack No. 3/D-Line
1	Sampling Date	-	14/09/23
2	Stack Diameter	m	Ø 0.60
3	Temperature <sup>(1)</sup>	°C	98
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.6
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	2.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.7
7	Moisture Content <sup>(1)</sup>	%	2.71
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.9
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Homogenize Stack					
			2309-AS0403					
			Homogenize Stack No. 3/D-Line		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.6	0.0027 (g/s)	216	0.21 (g/s)	240	15-19/09/23
HF <sup>(2)</sup>	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	0.134	0.0002 (g/s)	-	-	-	18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	28.80	0.0906 (g/s)	180	0.33 (g/s)	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	12	0.0230 (g/s)	621	0.70 (g/s)	690	14/09/23

**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

19/09/23

Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager

29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 15/09/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
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**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Dust Collector Melting Furnace	
			2309-AS0405	2309-AS0406
			Dust Collector No. 4 (Inlet)/D-Line	Dust Collector No. 4 (Outlet)/D-Line
1	Sampling Date	-	14/09/23	14/09/23
2	Stack Diameter	m	Ø 1.30	Ø 1.50
3	Temperature <sup>(1)</sup>	°C	87	76
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.3	9.5
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	13.7	16.8
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	10.9	13.9
7	Moisture Content <sup>(1)</sup>	%	3.13	2.44
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.6	20.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	753.4	756.2

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			CASTING GROUP/ Dust Collector Melting Furnace						
			2309-AS0405	2309-AS0406		(A)	(B)		
			Dust Collector No. 4 (Inlet)/ D-Line *	Dust Collector No. 4 (Outlet)/ D-Line					
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	5.3	1.2	0.0162 (g/s)	216	0.66 (g/s)	240	15-19/09/23
HF <sup>(2)</sup>	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	-	0.180	0.0020 (g/s)	-	-	-	18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	-	13.30	0.3483 (g/s)	180	1.04 (g/s)	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	-	48	0.7652 (g/s)	621	2.17 (g/s)	690	14/09/23

**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

29/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			CASTING GROUP/Dust Collector Dross Recovery	
			2309-AS0407	2309-AS0408
			Dust Collector No. 5 (Inlet)/D-Line	Dust Collector No. 5 (Outlet)/D-Line
1	Sampling Date	-	14/09/23	14/09/23
2	Stack Diameter	m	Ø 0.70	Ø 0.76
3	Temperature <sup>(1)</sup>	°C	70	51
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.3	9.2
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	4.0	4.2
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	3.3	3.8
7	Moisture Content <sup>(1)</sup>	%	1.81	1.16
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.8	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	751.6	756.3

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			CASTING GROUP/Dust Collector Dross Recovery						
			2309-AS0407	2309-AS0408		(A)	(B)		
			Dust Collector No. 5 (Inlet)/ D-Line *	Dust Collector No. 5 (Outlet)/ D-Line					
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	206.8	2.2	0.0082 (g/s)	216	1.05(g/s)	240	15-19/09/23
HF <sup>(2)</sup>	ppm	Absorption, IC Method (US.EPA Method 26, Oct 07, 2020)	-	< 0.012	< 0.00004 (g/s)	-	-	-	18/09/23

**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

19/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 15/09/23  
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Klongnueng, Klongluang, Pathumthani 12120  
**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

**Report Date** : 29/09/23  
**Analysis Date** : 21/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/Fume Exhaust	
			2309-AS0409	2309-AS0410
			Fume Exhaust Press No. 13, 14 (Inlet)	Fume Exhaust Press No. 13, 14 (Outlet)
1	Sampling Date	-	14/09/23	14/09/23
2	Stack Diameter	m	Ø 0.50	Ø 0.37
3	Temperature <sup>(1)</sup>	°C	38	28
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.4	9.5
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	1.8	1.0
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.8	1.0
7	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9	20.9
8	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.1	756.1

Parameter	Unit	Method	Result			Analysis Date
			EXTRUSION GROUP/Fume Exhaust			
			2309-AS0409	2309-AS0410		
			Fume Exhaust Press No. 13, 14 (Inlet)	Fume Exhaust Press No. 13, 14 (Outlet)		
NaOH <sup>(2)</sup>	mg/Nm <sup>3</sup>	Filtering, Titrimetric (NIOSH 7401, Issue 2 Aug 1994)	< 0.40	< 0.40	< 0.0004 (g/s)	21/09/23

**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

29/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23

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Thai Environmental Technic Limited

บริษัท เทคโนโลยีสิ่งแวดล้อมไทย จำกัด

ORIGINAL

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Page 6 of 23

## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/D-Line	
			2309-AS0505	2309-AS0506
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)
1	Sampling Date	-	15/09/23	15/09/23
2	Stack Diameter	m	Ø 0.27	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	237	321
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.7	8.8
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3	0.2
7	Moisture Content <sup>(1)</sup>	%	2.32	2.42
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.2	10.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.4	6.4
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9	755.9

Parameter	Unit	Method	Result				Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line							
			2309-AS0505		2309-AS0506		(A)	(B)		
			BHF Stack No. 1, 2 (BHF Stack No. 13)		BHF Stack No. 1, 2 (BHF Stack No. 14)					
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9	0.0007 (g/s)	2.2	0.0005 (g/s)	216	0.09(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	95.30	0.0449 (g/s)	17.70	0.0082 (g/s)	180	0.14(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	216	0.0619 (g/s)	57	0.0160 (g/s)	621	0.30(g/s)	690	15/09/23

**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** (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

19/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

19/09/23

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## TEST REPORT

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2309-AS0507
			BHF Stack No. 3 (BHF Stack No. 15)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	315
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.1
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.32
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	9.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line					
			2309-AS0507					
			BHF Stack No. 3 (BHF Stack No. 15)		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.3	0.0006 (g/s)	216	0.05(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	18.70	0.0090 (g/s)	180	0.08(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	52	0.0153 (g/s)	621	0.16(g/s)	690	15/09/23

**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

19/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

19/09/23

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Thai Environmental Technic Limited

บริษัท เทคนิควิเสณสิ่งแวดล้อมไทย จำกัด

ORIGINAL

ต้นฉบับ

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2309-AS0508
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	376
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.46
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	9.6
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP/D-Line					
			2309-AS0508					
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)		(A)		(B)	
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.6	0.0007 (g/s)	216	0.09(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	65.50	0.0314 (g/s)	180	0.14(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	49	0.0143 (g/s)	621	0.28(g/s)	690	15/09/23

**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

Ms. Wareerut Prachundaeng

Chief of Laboratory

19/09/23

Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

19/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2309-AS0509
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	240
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.32
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP /D-Line					
			2309-AS0509		(A)	(B)		
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)					
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.2	0.0006 (g/s)	216	0.09(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	47.90	0.0262 (g/s)	180	0.14(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	77	0.0257 (g/s)	621	0.28(g/s)	690	15/09/23

**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 Prachumdaeng  
Chief of Laboratory  
19/09/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
19/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0502
			Aging Stack No. 1/Aging Stack A (No. 8)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.35
3	Temperature <sup>(1)</sup>	°C	102
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.7
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.5
7	Moisture Content <sup>(1)</sup>	%	2.25
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	14.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	4.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2309-AS0502					
			Aging Stack No. 1/ Aging Stack A (No. 8)		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.9	0.0005 (g/s)	216	0.05(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	21.90	0.0205 (g/s)	180	0.07(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	40	0.0228 (g/s)	621	0.15(g/s)	690	15/09/23

**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

19/09/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

19/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0503
			Aging Stack No. 2/Aging Stack B (No. 9)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.25
3	Temperature <sup>(1)</sup>	°C	129
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.4
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.54
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.8
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2309-AS0503					
			Aging Stack No. 2/ Aging Stack B (No. 9)		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.8	0.0002 (g/s)	216	0.12(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	39.00	0.0218 (g/s)	180	0.18(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	70	0.0238 (g/s)	621	0.38(g/s)	690	15/09/23

**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

29/09/23

Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

29/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0504
			Aging Stack No. 3/Aging Stack C (No. 10)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	135
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.9
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.4
7	Moisture Content <sup>(1)</sup>	%	2.72
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.0
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.4
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2309-AS0504					
			Aging Stack No. 3/ Aging Stack C (No. 10)		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.1	0.0004 (g/s)	216	0.03(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	53.60	0.0363 (g/s)	180	0.05(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	93	0.0384 (g/s)	621	0.10(g/s)	690	15/09/23

**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

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
29/09/23



Approved by

Mrs. Pornip Pethshee  
Laboratory Manager  
29/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0500
			Nitriding Stack No. 1/Nitriding D Line No. 3
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.20
3	Temperature <sup>(1)</sup>	°C	171
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.3
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.3
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.2
7	Moisture Content <sup>(1)</sup>	%	3.25
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.0
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.9
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2309-AS0500					
			Nitriding Stack No. 1/ Nitriding D Line No. 3		(A)		(B)	
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.6	0.0005 (g/s)	216	0.03(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	83.10	0.0295 (g/s)	180	0.05(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	106	0.0229 (g/s)	621	0.10(g/s)	690	15/09/23

**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

Ms. Wareerut Prachumdaeng

Chief of Laboratory

29/09/23

Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23

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

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0501
			Nitriding Stack No. 2/Nitriding D Line No. 4
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.20
3	Temperature <sup>(1)</sup>	°C	130
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.3
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.2
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.1
7	Moisture Content <sup>(1)</sup>	%	2.46
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	14.6
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			EXTRUSION GROUP					
			2309-AS0501					
			Nitriding Stack No. 2/ Nitriding D Line No. 4		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.3	0.0002 (g/s)	216	0.03(g/s)	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	63.90	0.0171 (g/s)	180	0.05(g/s)	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	117	0.0190 (g/s)	621	0.10(g/s)	690	15/09/23

**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

19/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

19/09/23

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**Report Date** : 29/09/23  
**Analysis Date** : 18-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP	
			2309-AS0498	2309-AS0499
			Dust Collector (Inlet)/D-Line	Dust Collector (Outlet)/D-Line
1	Sampling Date	-	15/09/23	15/09/23
2	Stack Diameter	m	Ø 0.30	Ø 0.45
3	Temperature <sup>(1)</sup>	°C	29	29
4	Stack Gas Velocity <sup>(1)</sup>	m/s	13.4	6.9
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.9	1.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.9	1.1
7	Moisture Content <sup>(1)</sup>	%	1.46	1.04
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.8	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	753.1	756.1

Parameter	Unit	Method	Result			Standard (Without Combustion)	Analysis Date
			EXTRUSION GROUP				
			2309-AS0498	2309-AS0499			
			Dust Collector (Inlet)/D-Line *	Dust Collector (Outlet)/D-Line			
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.0	0.5	0.0005 (g/s)	400	18-20/09/23

**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  
29/09/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
29/09/23





## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 21/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			SURFACE TREATMENT GROUP/Etching Stack (D-Line)	
			2309-AS0512	2309-AS0513
			Eaching Fume (Inlet)	Eaching Fume (Outlet)
1	Sampling Date	-	16/09/23	16/09/23
2	Stack Diameter	m	1.00 x 2.00	1.50 x 1.50
3	Temperature <sup>(1)</sup>	°C	25	26
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.3	7.7
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	16.6	17.3
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	16.5	17.2
7	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9	20.9
8	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	753.7	756.2

Parameter	Unit	Method	Result			Analysis Date
			SURFACE TREATMENT GROUP/Etching Stack (D-Line)			
			2309-AS0512	2309-AS0513		
			Eaching Fume (Inlet)	Eaching Fume (Outlet)		
NaOH <sup>(2)</sup>	mg/Nm <sup>3</sup>	Filtering, Titrimetric (NIOSH 7401, Issue 2 Aug 1994)	< 0.40	< 0.40	< 0.0069 (g/s)	21/09/23

**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

29/09/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

29/09/23



## TEST REPORT

**Analysis No.** : R23-2892 **Report Date** : 29/09/23  
**Received Date** : 18/09/23 **Analysis Date** : 19/09/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
 For Tostem Thai Co., Ltd./North Factory/EIA **Job No.** : S660326/Sep  
**Address** : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,  
 Klongnueng, Klongluang, Pathumthani 12120 **Sampling By** : TET  
**Type of Sample** : Stack  
**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

### Sampling Conditions :

Item	Description	Unit	Result	
			SURFACE TREATMENT GROUP/Anodized Stack (D-Line)	
			2309-AS0514	2309-AS0515
			Anodize Fume (Inlet)	Anodize Fume (Outlet)
1	Sampling Date	-	16/09/23	16/09/23
2	Stack Diameter	m	1.00 x 1.70	Ø 1.40
3	Temperature <sup>(1)</sup>	°C	27	28
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.2	8.5
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	15.6	13.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	15.1	12.7
7	Moisture Content <sup>(1)</sup>	%	1.70	1.89
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	753.4	756.3

Parameter	Unit	Method	Result			Standard (Without Combustion)			Analysis Date
			SURFACE TREATMENT GROUP/ Anodized Stack (D-Line)						
			2309-AS0514	2309-AS0515					
			Anodize Fume (Inlet) *	Anodize Fume (Outlet)		(A)	(B)		
H <sub>2</sub> SO <sub>4</sub> <sup>(2)</sup>	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	19/09/23

**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  
19/09/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
19/09/23

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 12/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-14/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/Paint Line Stack (Paint)/Fab5C	
			2309-AS0276	2309-AS0277
			Paint Line Stack (Painting) (Inlet)	Paint Line Stack (Painting) (Outlet)
1	Sampling Date	-	11/09/23	11/09/23
2	Stack Diameter	m	0.65 x 2.10	1.10 x 1.10
3	Temperature <sup>(1)</sup>	°C	28	28
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.8	6.4
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	12.0	7.7
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	11.8	7.6
7	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9	20.9
8	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
9	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	754.9	756.2

Parameter	Unit	Method	Result			Standard (Without Combustion)			Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Paint)/Fab5C						
			2309-AS0276	2309-AS0277					
			Paint Line Stack (Painting) (Inlet) *	Paint Line Stack (Painting) (Outlet)		(A)	(B)		
Xylene <sup>(2)</sup>	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	3.056	0.198	0.0065 (g/s)	180	1.94(g/s)	200	13-14/09/23

**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  
29/09/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
29/09/23



## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 14/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C	
			2309-AS0384	
			Paint Line Stack (Oven) (Outlet)	
1	Sampling Date	-	13/09/23	
2	Stack Diameter	m	0.20 x 0.20	
3	Temperature <sup>(1)</sup>	°C	80	
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.9	
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4	
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3	
7	Moisture Content <sup>(1)</sup>	%	2.26	
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	16.8	
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	3.7	
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.7	

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C					
			2309-AS0384					
			Paint Line Stack (Oven) (Outlet)		(A)	(B)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.6	0.0002 (g/s)	-	-	240	14-18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.00	0.0184 (g/s)	-	-	200	13/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	26	0.0097 (g/s)	-	-	690	13/09/23
Xylene <sup>(2)</sup>	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	< 0.009	< 0.00001 (g/s)	180	1.94(g/s)	-*	18-19/09/23

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

\* 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

29/09/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 14/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-18/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/Screw Stack (Oven)/Fab5C	
			2309-AS0385	
			Screw Stack (Oven) (B or Burner)	
1	Sampling Date	-	13/09/23	
2	Stack Diameter	m	0.31 x 0.31	
3	Temperature <sup>(1)</sup>	°C	78	
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.1	
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.7	
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.6	
7	Moisture Content <sup>(1)</sup>	%	3.37	
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	16.9	
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	2.4	
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2	

Parameter	Unit	Method	Result		Standard (With Combustion)			Analysis Date
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C					
			2309-AS0385					
			Screw Stack (Oven) (B or Burner)		(A)		(B)	
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	0.0004 (g/s)	216	0.04(g/s)	240	14-18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	10.00	0.0105 (g/s)	180	0.07(g/s)	200	13/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	21	0.0134 (g/s)	621	0.13(g/s)	690	13/09/23

**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

19/09/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

19/09/23



## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 13/09/23  
**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** : 29/09/23  
**Analysis Date** : 14/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			PART PRODUCT GROUP/Dipping Color Stack/Fab5C	
			2309-AS0340	2309-AS0341
			Dipping Color Stack (Inlet)	Dipping Color Stack (Outlet)
1	Sampling Date	-	12/09/23	12/09/23
2	Stack Diameter	m	Ø 0.30	Ø 0.30
3	Temperature <sup>(1)</sup>	°C	35	34
4	Stack Gas Velocity <sup>(1)</sup>	m/s	22.7	15.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	1.6	1.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.5	1.0
7	Moisture Content <sup>(1)</sup>	%	1.30	1.12
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	749.5	756.6

Parameter	Unit	Method	Result			Standard (Without Combustion)			Analysis Date
			PART PRODUCT GROUP/ Dipping Color Stack/Fab5C						
			2309-AS0340	2309-AS0341					
			Dipping Color Stack (Inlet) *	Dipping Color Stack (Outlet)		(A)	(B)		
H <sub>2</sub> SO <sub>4</sub> <sup>(2)</sup>	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	< 0.012	< 0.00005 (g/s)	22.5	0.30(g/s)	25	14/09/23

**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  
19/09/23



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
29/09/23





## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 16-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			ENG/Boiler Stack No. 1
			2309-AS0516
			Boiler Stack No. 1, 2, 3/North
1	Sampling Date	-	16/09/23
2	Stack Diameter	m	Ø 0.80
3	Temperature <sup>(1)</sup>	°C	95
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.2
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	3.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	2.8
7	Moisture Content <sup>(1)</sup>	%	3.24
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	12.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.8
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result			Standard (With Combustion)			Analysis Date
			ENG/Boiler Stack No. 1						
			2309-AS0516						
			Boiler Stack No. 1, 2, 3/North			(A)	(B)		
Particulate	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9 <sup>(2)</sup>	0.0081 (g/s)	4.7 <sup>(3)</sup>	216	0.23(g/s)	320	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	50.90 <sup>(2)</sup>	0.2703 (g/s)	83.24 <sup>(3)</sup>	180	0.37(g/s)	200	16/09/23
CO	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	26 <sup>(2)</sup>	0.0840 (g/s)	43 <sup>(3)</sup>	621	0.77(g/s)	690	16/09/23

**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

19/09/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

19/09/23

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Attapon Wongsawad  
**Registration No.** : ๓-236-จ-0026  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Melting Stack
			2309-AS0404
			Melting Stack No. 3/D-Line
1	Sampling Date	-	14/09/23
2	Stack Diameter	m	Ø 1.60
3	Temperature <sup>(1)</sup>	°C	224
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.6
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	21.3
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	12.3
7	Moisture Content <sup>(1)</sup>	%	3.45
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	12.0
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	4.8
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Melting Stack		
			2309-AS0404		
			Melting Stack No. 3/D-Line		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	5.2	240	15-19/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	33.40	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	13	690	14/09/23

**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

๓-236-ก-0002  
๒๙/๙/๒๓



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

๓-236-ก-0003  
๒๙/๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-จ-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Homogenize Stack
			2309-AS0403
			Homogenize Stack No. 3/D-Line
1	Sampling Date	-	14/09/23
2	Stack Diameter	m	Ø 0.60
3	Temperature <sup>(1)</sup>	°C	98
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.6
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	2.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.7
7	Moisture Content <sup>(1)</sup>	%	2.71
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.9
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Homogenize Stack		
			2309-AS0403		
			Homogenize Stack No. 3/D-Line		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.6	240	15-19/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	28.80	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	12	690	14/09/23

**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-ก-0002  
๒๙/๐๙/๒๓



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๓-236-ก-0003  
๒๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 14-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Attapon Wongsawad  
**Registration No.** : ๓-236-๓-0026  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Dust Collector Melting Furnace
			2309-AS0406
			Dust Collector No. 4 (Outlet)/D-Line
1	Sampling Date	-	14/09/23
2	Stack Diameter	m	Ø 1.50
3	Temperature <sup>(1)</sup>	°C	76
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.5
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	16.8
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	13.9
7	Moisture Content <sup>(1)</sup>	%	2.44
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/ Dust Collector Melting Furnace		
			2309-AS0406		
			Dust Collector No. 4 (Outlet)/ D-Line		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.2	240	15-19/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	13.30	200	14/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	48	690	14/09/23

**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 Prachundaeng  
Chief of Laboratory  
๓-236-๓-0002  
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Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
๒๙/๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 15/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Attapon Wongsawad  
**Registration No.** : ๓-236-จ-0026  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			CASTING GROUP/Dust Collector Dross Recovery
			2309-AS0408
			Dust Collector No. 5 (Outlet)/D-Line
1	Sampling Date	-	14/09/23
2	Stack Diameter	m	Ø 0.76
3	Temperature <sup>(1)</sup>	°C	51
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.2
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	4.2
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	3.8
7	Moisture Content <sup>(1)</sup>	%	1.16
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.3

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			CASTING GROUP/Dust Collector		
			Dross Recovery		
			2309-AS0408		
			Dust Collector No. 5 (Outlet)/ D-Line		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.2	240	15-19/09/23

**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

๓-236-ก-0002  
29/09/23



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager

๓-236-ก-0003  
29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Rattapon Sukdee  
**Registration No.** : ๖-236-ก-0006  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result	
			EXTRUSION GROUP/D-Line	
			2309-AS0505	2309-AS0506
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)
1	Sampling Date	-	15/09/23	15/09/23
2	Stack Diameter	m	Ø 0.27	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	237	321
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.7	8.8
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3	0.2
7	Moisture Content <sup>(1)</sup>	%	2.32	2.42
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.2	10.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.4	6.4
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9	755.9

Parameter	Unit	Method	Result		Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line			
			2309-AS0505	2309-AS0506		
			BHF Stack No. 1, 2 (BHF Stack No. 13)	BHF Stack No. 1, 2 (BHF Stack No. 14)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9	2.2	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	95.30	17.70	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	216	57	690	15/09/23

**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  
๖-236-ก-0002  
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Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
๖-236-ก-0003  
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## TEST REPORT

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For Tostem Thai Co., Ltd./North Factory/EIA  
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Klongnueng, Klongluang, Pathumthani 12120  
**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

**Report Date** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Rattapon Sukdee  
**Registration No.** : ๓-236-ก-0006  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2309-AS0507
			BHF Stack No. 3 (BHF Stack No. 15)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	315
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.1
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.32
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	9.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2309-AS0507		
			BHF Stack No. 3 (BHF Stack No. 15)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.3	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	18.70	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	52	690	15/09/23

**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  
๓-236-ก-0002  
๒๙/๙/๒๓



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
๓-236-ก-0003  
๒๙/๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Rattapon Sukdee  
**Registration No.** : ๓-236-ก-0006  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP/D-Line
			2309-AS0508
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	376
4	Stack Gas Velocity <sup>(1)</sup>	m/s	10.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.46
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	9.6
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2309-AS0508		
			BHF Stack No. 4, 5, 6 (BHF Stack No. 16)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.6	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	65.50	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	49	690	15/09/23

**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

๓-236-ก-0002  
๒๙/๐๙/๒๓



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager

๓-236-ก-0003  
๒๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Report Date** : 29/09/23  
**Received Date** : 18/09/23  
**Analysis Date** : 15-20/09/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
**Job No.** : S660326/Sep  
For Tostem Thai Co., Ltd./North Factory/EIA  
**Sampling By** : Mr. Rattapon Sukdee  
**Address** : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,  
**Registration No.** : ๖-236-ก-0006  
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
			2309-AS0509
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	240
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.32
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	10.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	755.9

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP/D-Line		
			2309-AS0509		
			BHF Stack No. 4, 5, 6 (BHF Stack No. 17)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.2	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	47.90	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	77	690	15/09/23

**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<sup>0</sup> 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  
๑๙/๐๙/๒๓



Approved by

Mrs. Pornip Pethshee  
Laboratory Manager

๖-236-ก-0003  
๑๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
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**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-๓-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0502
			Aging Stack No. 1/Aging Stack A (No. 8)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.35
3	Temperature <sup>(1)</sup>	°C	102
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.7
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.5
7	Moisture Content <sup>(1)</sup>	%	2.25
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	14.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	4.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0502		
			Aging Stack No. 1/ Aging Stack A (No. 8)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.9	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	21.90	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	40	690	15/09/23

**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 Prachumdaeng  
Chief of Laboratory  
๓-236-๓-0002  
๒๙/๐๙/๒๓



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
๒๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-๓-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0503
			Aging Stack No. 2/Aging Stack B (No. 9)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.25
3	Temperature <sup>(1)</sup>	°C	129
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.4
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.54
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.8
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0503		
			Aging Stack No. 2/ Aging Stack B (No. 9)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.8	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	39.00	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	70	690	15/09/23

**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  
๓-236-๓-0002  
18/09/23



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
18/09/23

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsas  
**Registration No.** : ๖-236-จ-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0504
			Aging Stack No. 3/Aging Stack C (No. 10)
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.27
3	Temperature <sup>(1)</sup>	°C	135
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.9
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.5
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.4
7	Moisture Content <sup>(1)</sup>	%	2.72
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.0
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	7.4
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0504		
			Aging Stack No. 3/ Aging Stack C (No. 10)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.1	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	53.60	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	93	690	15/09/23

**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 Prachumdaeng  
Chief of Laboratory  
๖-236-ก-0002  
๒๙/๙/๒๓



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๖-236-ก-0003  
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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-จ-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0500
			Nitriding Stack No. 1/Nitriding D Line No. 3
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.20
3	Temperature <sup>(1)</sup>	°C	171
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.3
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.3
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.2
7	Moisture Content <sup>(1)</sup>	%	3.25
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	13.0
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	6.9
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0500		
			Nitriding Stack No. 1/ Nitriding D Line No. 3		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.6	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	83.10	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	106	690	15/09/23

**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  
๓-236-จ-0002  
29/09/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๓-236-จ-0003  
29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 15-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-จ-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0501
			Nitriding Stack No. 2/Nitriding D Line No. 4
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.20
3	Temperature <sup>(1)</sup>	°C	130
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.3
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.2
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.1
7	Moisture Content <sup>(1)</sup>	%	2.46
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	14.6
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.2
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0501		
			Nitriding Stack No. 2/ Nitriding D Line No. 4		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	1.3	240	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	63.90	200	15/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	117	690	15/09/23

**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  
๓-236-จ-0002  
1๕/๐๙/๒๓



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๓-236-จ-0003  
1๕/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 18-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Rattapon Sukdee  
**Registration No.** : ๖-236-ก-0006  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			EXTRUSION GROUP
			2309-AS0499
			Dust Collector (Outlet)/D-Line
1	Sampling Date	-	15/09/23
2	Stack Diameter	m	Ø 0.45
3	Temperature <sup>(1)</sup>	°C	29
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.9
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	1.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.1
7	Moisture Content <sup>(1)</sup>	%	1.04
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.1

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			EXTRUSION GROUP		
			2309-AS0499		
			Dust Collector (Outlet)/D-Line		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.5	400	18-20/09/23

**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 Prachundaeng  
Chief of Laboratory  
๖-236-ก-0002  
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Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
๖-236-ก-0003  
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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsā  
**Registration No.** : ว-236-จ-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			SURFACE TREATMENT GROUP/Anodized Stack (D-Line)
			2309-AS0515
			Anodize Fume (Outlet)
1	Sampling Date	-	16/09/23
2	Stack Diameter	m	Ø 1.40
3	Temperature <sup>(1)</sup>	°C	28
4	Stack Gas Velocity <sup>(1)</sup>	m/s	8.5
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	13.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	12.7
7	Moisture Content <sup>(1)</sup>	%	1.89
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.3

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			SURFACE TREATMENT GROUP/ Anodized Stack (D-Line)		
			2309-AS0515		
			Anodize Fume (Outlet)		
H <sub>2</sub> SO <sub>4</sub> <sup>(2)</sup>	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	25	19/09/23

**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

ว-236-จ-0002  
29/09/23



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager

ว-236-จ-0003  
29/09/23

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 12/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-14/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-๓-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/Paint Line Stack (Paint)/Fab5C
			2309-AS0277
			Paint Line Stack (Painting) (Outlet)
1	Sampling Date	-	11/09/23
2	Stack Diameter	m	1.10 x 1.10
3	Temperature <sup>(1)</sup>	°C	28
4	Stack Gas Velocity <sup>(1)</sup>	m/s	6.4
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	7.7
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	7.6
7	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9
8	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
9	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Paint)/Fab5C		
			2309-AS0277		
			Paint Line Stack (Painting) (Outlet)		
Xylene <sup>(2)</sup>	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	0.198	200	13-14/09/23

**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

๓-236-๓-0002  
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Approved by

Mrs. Porntip Pethshee  
Laboratory Manager

๓-236-๓-0003  
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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 14/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-19/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Witon Walairat  
**Registration No.** : ๓-236-๓-0021  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C
			2309-AS0384
			Paint Line Stack (Oven) (Outlet)
1	Sampling Date	-	13/09/23
2	Stack Diameter	m	0.20 x 0.20
3	Temperature <sup>(1)</sup>	°C	80
4	Stack Gas Velocity <sup>(1)</sup>	m/s	9.9
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.4
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.3
7	Moisture Content <sup>(1)</sup>	%	2.26
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	16.8
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	3.7
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.7

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			PART PRODUCT GROUP/ Paint Line Stack (Oven)/Fab5C		
			2309-AS0384		
			Paint Line Stack (Oven) (Outlet)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.6	240	14-18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	30.00	200	13/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	26	690	13/09/23
Xylene <sup>(2)</sup>	ppm	Solid Sorbent Tube, GC/FID (US.EPA Mt.18, Jan 14, 2019)	< 0.009	-*	18-19/09/23

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

\* 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  
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Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
๑๙/๐๙/๒๓

- PRIVATE LABORATORY REGISTERED NO. ๓-236
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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 14/09/23  
**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** : 29/09/23  
**Analysis Date** : 13-18/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Witon Walairat  
**Registration No.** : ๓-236-๓-0021  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C
			2309-AS0385
			Screw Stack (Oven) (B or Burner)
1	Sampling Date	-	13/09/23
2	Stack Diameter	m	0.31 x 0.31
3	Temperature <sup>(1)</sup>	°C	78
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.1
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	0.7
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	0.6
7	Moisture Content <sup>(1)</sup>	%	3.37
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	16.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	2.4
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result	Standard (With Combustion)	Analysis Date
			PART PRODUCT GROUP/ Screw Stack (Oven)/Fab5C		
			2309-AS0385		
			Screw Stack (Oven) (B or Burner)		
Particulate <sup>(2)</sup>	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	0.7	240	14-18/09/23
NO <sub>x</sub> as NO <sub>2</sub> <sup>(2)</sup>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	10.00	200	13/09/23
CO <sup>(2)</sup>	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	21	690	13/09/23

**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  
๓-236-๓-0002  
๒๙/๐๙/๒๓



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
๒๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW **Report Date** : 29/09/23  
**Received Date** : 13/09/23 **Analysis Date** : 14/09/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
 For Tostem Thai Co., Ltd./North Factory/EIA **Job No.** : S660326/Sep  
**Address** : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,  
 Klongnueng, Klongluang, Pathumthani 12120 **Sampling By** : Mr. Attapon Wongsawad  
**Registration No.** : ๓-236-๓-0026  
**Type of Sample** : Stack  
**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

### Sampling Conditions :

Item	Description	Unit	Result
			PART PRODUCT GROUP/Dipping Color Stack/Fab5C
			2309-AS0341
			Dipping Color Stack (Outlet)
1	Sampling Date	-	12/09/23
2	Stack Diameter	m	Ø 0.30
3	Temperature <sup>(1)</sup>	°C	34
4	Stack Gas Velocity <sup>(1)</sup>	m/s	15.0
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	1.1
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	1.0
7	Moisture Content <sup>(1)</sup>	%	1.12
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	20.9
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	< 1.0
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.6

Parameter	Unit	Method	Result	Standard (Without Combustion)	Analysis Date
			PART PRODUCT GROUP/ Dipping Color Stack/Fab5C		
			2309-AS0341		
			Dipping Color Stack (Outlet)		
H <sub>2</sub> SO <sub>4</sub> <sup>(2)</sup>	ppm	Isokinetic/Barium-Thorin Titration Method (US.EPA Method 8, Jan 14, 2019)	< 0.012	25	14/09/23

**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 Prachundaeng  
Chief of Laboratory  
๓-236-๓-0002  
๒๙/๐๙/๒๓



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
๓-236-๓-0003  
๒๙/๐๙/๒๓

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## TEST REPORT

**Analysis No.** : R23-2892/DIW  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 16-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : Mr. Weeraphon Budsa  
**Registration No.** : ๓-236-๓-0029  
**Type of Sample** : Stack

### Sampling Conditions :

Item	Description	Unit	Result
			ENG/Boiler Stack No. 1
			2309-AS0516
			Boiler Stack No. 1, 2, 3/North
1	Sampling Date	-	16/09/23
2	Stack Diameter	m	Ø 0.80
3	Temperature <sup>(1)</sup>	°C	95
4	Stack Gas Velocity <sup>(1)</sup>	m/s	7.2
5	Flow Rate <sup>(1)</sup>	m <sup>3</sup> /s	3.6
6	Flow Rate <sup>(2)</sup>	Nm <sup>3</sup> /s	2.8
7	Moisture Content <sup>(1)</sup>	%	3.24
8	O <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	12.4
9	CO <sub>2</sub> Rate <sup>(1)</sup> , dry basis	%	5.8
10	Absolute Stack Pressure <sup>(1)</sup>	mm.Hg	756.2

Parameter	Unit	Method	Result		Standard (With Combustion)	Analysis Date
			ENG/Boiler Stack No. 1			
			2309-AS0516			
			Boiler Stack No. 1, 2, 3/North			
Particulate	mg/Nm <sup>3</sup>	Isokinetic, Gravimetric Method (US.EPA Method 5, Dec 07, 2020)	2.9 <sup>(2)</sup>	4.7 <sup>(3)</sup>	320	18-20/09/23
NO <sub>x</sub> as NO <sub>2</sub>	ppm	Instrument Analyzer Method (US.EPA Method 7E, Oct 07, 2020)	50.90 <sup>(2)</sup>	83.24 <sup>(3)</sup>	200	16/09/23
CO	ppm	NDIR Method (US.EPA Method 10, Aug 02, 2017)	26 <sup>(2)</sup>	43 <sup>(3)</sup>	690	16/09/23

**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

๓-236-๓-0002

.....



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

๓-236-๓-0003

.....

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## TEST REPORT

**Analysis No.** : R23-2892  
**Received Date** : 18/09/23  
**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** : 29/09/23  
**Analysis Date** : 18-20/09/23  
**Job No.** : S660326/Sep  
**Sampling By** : TET  
**Type of Sample** : Ambient Air

Sampling Point	Sample No.	Sampling Date	Result			
			TSP (mg/m <sup>3</sup> )	PM-10 (mg/m <sup>3</sup> )	SO <sub>2</sub> (mg/m <sup>3</sup> )	CO <sup>(8 hr.)</sup> (ppm)
วัดโพธิ์นิม (47P 0670773 UTM 1560877)	2309-AA0485	14-15/09/23	0.027	0.016	< 0.001	0.39
	2309-AA0489	15-16/09/23	0.024	0.012	< 0.001	0.37
	2309-AA0493	16-17/09/23	0.032	0.015	< 0.001	0.31
โรงเรียนวัดพิชัยนิมิตร (47P 0671157 UTM 1562549)	2309-AA0486	14-15/09/23	0.081	0.031	< 0.001	0.41
	2309-AA0490	15-16/09/23	0.061	0.024	< 0.001	0.47
	2309-AA0494	16-17/09/23	0.046	0.024	< 0.001	0.37
วัดโกเมศรัตนาราม (47P 0669803 UTM 1560300)	2309-AA0487	14-15/09/23	0.046	0.002	< 0.001	0.33
	2309-AA0491	15-16/09/23	0.037	0.011	< 0.001	0.42
	2309-AA0495	16-17/09/23	0.039	0.009	< 0.001	0.29
บริเวณพื้นที่โครงการ (โรงงานเหนือ) (47P 0671020 UTM 1561185)	2309-AA0488	14-15/09/23	0.014	0.007	< 0.001	0.52
	2309-AA0492	15-16/09/23	0.044	0.026	< 0.001	0.42
	2309-AA0496	16-17/09/23	0.040	0.024	< 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 (2309-AA0485, 2309-AA0486, 2309-AA0487, 2309-AA0488, 2309-AA0489, 2309-AA0490, 2309-AA0491, 2309-AA0492, 2309-AA0493, 2309-AA0494, 2309-AA0495, 2309-AA0496)/18-20/09/23

SO<sub>2</sub> (2309-AA0485, 2309-AA0486, 2309-AA0487, 2309-AA0488, 2309-AA0489, 2309-AA0490, 2309-AA0491, 2309-AA0492, 2309-AA0493, 2309-AA0494, 2309-AA0495, 2309-AA0496)/19/09/23

CO (2309-AA0485, 2309-AA0486, 2309-AA0487, 2309-AA0488, 2309-AA0489, 2309-AA0490, 2309-AA0491, 2309-AA0492, 2309-AA0493, 2309-AA0494, 2309-AA0495, 2309-AA0496)/18/09/23

**Method** : TSP = Gravimetric Method (US.EPA 40 CFR Part 50 Appendix B)  
PM-10 = Gravimetric Method (US.EPA 40 CFR Part 50 Appendix J)  
SO<sub>2</sub> = 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

29/09/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

29/09/23

..... END OF REPORT .....

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

ORIGINAL

ต้นฉบับ

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

E-mail : admin@tet1995.com

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. : S660326/Sep

Report No. : 2892/2023/1-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Ambient Air

Item	Time	Result		
		วัดโพธิ์นิม		
		NO <sub>2</sub> (ppm)		
		14-15/09/23	15-16/09/23	16-17/09/23
1.	15:00-16:00	0.0007	0.0018	0.0013
2.	16:00-17:00	0.0008	0.0016	0.0012
3.	17:00-18:00	0.0009	0.0011	0.0032
4.	18:00-19:00	0.0010	0.0007	0.0014
5.	19:00-20:00	0.0008	0.0007	0.0013
6.	20:00-21:00	0.0007	0.0010	0.0012
7.	21:00-22:00	0.0010	0.0010	0.0007
8.	22:00-23:00	0.0016	0.0014	0.0006
9.	23:00-00:00	0.0013	0.0014	0.0007
10.	00:00-01:00	0.0007	0.0015	0.0015
11.	01:00-02:00	0.0026	0.0021	0.0015
12.	02:00-03:00	0.0027	0.0009	0.0011
13.	03:00-04:00	0.0027	0.0014	0.0009
14.	04:00-05:00	0.0029	0.0015	0.0006
15.	05:00-06:00	0.0021	0.0016	0.0007
16.	06:00-07:00	0.0012	0.0006	0.0015
17.	07:00-08:00	0.0008	0.0007	0.0010
18.	08:00-09:00	0.0008	0.0016	0.0011
19.	09:00-10:00	0.0011	0.0015	0.0007
20.	10:00-11:00	0.0009	0.0014	0.0010
21.	11:00-12:00	0.0020	0.0011	0.0011
22.	12:00-13:00	0.0034	0.0016	0.0014
23.	13:00-14:00	0.0022	0.0007	0.0010
24.	14:00-15:00	0.0018	0.0014	0.0006
Minimum		0.0007	0.0006	0.0006
Maximum		0.0034	0.0021	0.0032
Average		0.0015	0.0013	0.0011
Standard <sup>(1)</sup>		0.17		

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

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

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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. : S660326/Sep

Report No. : 2892/2023/2-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Ambient Air

Item	Time	Result		
		โรงเรียนวัดพิชนิมิตร		
		NO <sub>2</sub> (ppm)		
		14-15/09/23	15-16/09/23	16-17/09/23
1.	13:00-14:00	0.0030	0.0018	0.0012
2.	14:00-15:00	0.0021	0.0024	0.0019
3.	15:00-16:00	0.0018	0.0032	0.0005
4.	16:00-17:00	0.0017	0.0021	0.0007
5.	17:00-18:00	0.0016	0.0022	0.0003
6.	18:00-19:00	0.0016	0.0020	0.0010
7.	19:00-20:00	0.0014	0.0040	0.0015
8.	20:00-21:00	0.0015	0.0028	0.0012
9.	21:00-22:00	0.0016	0.0031	0.0010
10.	22:00-23:00	0.0021	0.0023	0.0011
11.	23:00-00:00	0.0020	0.0016	0.0012
12.	00:00-01:00	0.0021	0.0018	0.0010
13.	01:00-02:00	0.0019	0.0024	0.0018
14.	02:00-03:00	0.0019	0.0025	0.0014
15.	03:00-04:00	0.0025	0.0013	0.0016
16.	04:00-05:00	0.0023	0.0020	0.0012
17.	05:00-06:00	0.0020	0.0014	0.0018
18.	06:00-07:00	0.0021	0.0013	0.0016
19.	07:00-08:00	0.0020	0.0024	0.0022
20.	08:00-09:00	0.0018	0.0020	0.0020
21.	09:00-10:00	0.0013	0.0015	0.0020
22.	10:00-11:00	0.0014	0.0021	0.0019
23.	11:00-12:00	0.0015	0.0018	0.0038
24.	12:00-13:00	0.0015	0.0017	0.0025
Minimum		0.0013	0.0013	0.0003
Maximum		0.0030	0.0040	0.0038
Average		0.0019	0.0022	0.0015
Standard <sup>(1)</sup>		0.17		

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

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Sep

Report No. : 2892/2023/3-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Ambient Air

Item	Time	Result		
		วัดโกเมศรัตนาราม		
		NO <sub>2</sub> (ppm)		
		14-15/09/23	15-16/09/23	16-17/09/23
1.	14:00-15:00	0.0026	0.0008	0.0008
2.	15:00-16:00	0.0020	0.0016	0.0011
3.	16:00-17:00	0.0004	0.0013	0.0009
4.	17:00-18:00	0.0020	0.0013	0.0006
5.	18:00-19:00	0.0016	0.0008	0.0004
6.	19:00-20:00	0.0008	0.0009	0.0003
7.	20:00-21:00	0.0018	0.0008	0.0006
8.	21:00-22:00	0.0019	0.0016	0.0010
9.	22:00-23:00	0.0013	0.0011	0.0010
10.	23:00-00:00	0.0013	0.0021	0.0003
11.	00:00-01:00	0.0014	0.0026	0.0005
12.	01:00-02:00	0.0024	0.0023	0.0009
13.	02:00-03:00	0.0014	0.0013	0.0007
14.	03:00-04:00	0.0007	0.0012	0.0005
15.	04:00-05:00	0.0006	0.0010	0.0005
16.	05:00-06:00	0.0015	0.0011	0.0016
17.	06:00-07:00	0.0014	0.0007	0.0010
18.	07:00-08:00	0.0009	0.0007	0.0003
19.	08:00-09:00	0.0004	0.0012	0.0005
20.	09:00-10:00	0.0008	0.0010	0.0010
21.	10:00-11:00	0.0003	0.0009	0.0023
22.	11:00-12:00	0.0015	0.0016	0.0019
23.	12:00-13:00	0.0020	0.0012	0.0013
24.	13:00-14:00	0.0010	0.0015	0.0015
Minimum		0.0003	0.0007	0.0003
Maximum		0.0026	0.0026	0.0023
Average		0.0013	0.0013	0.0009
Standard <sup>(1)</sup>		0.17		

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

*Wannasiri S.*

Wannasiri Suriyawong



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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Thai Environmental Technic Limited  
บริษัท เทคโนโลยีสิ่งแวดล้อมไทย จำกัด

ORIGINAL

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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. : S660326/Sep

Report No. : 2892/2023/4-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Ambient Air

Item	Time	Result		
		บริเวณพื้นที่โครงการ (โรงงานเหนือ)		
		NO <sub>2</sub> (ppm)		
		14-15/09/23	15-16/09/23	16-17/09/23
1.	10:00-11:00	0.0011	0.0033	0.0026
2.	11:00-12:00	0.0014	0.0029	0.0025
3.	12:00-13:00	0.0025	0.0024	0.0023
4.	13:00-14:00	0.0020	0.0020	0.0025
5.	14:00-15:00	0.0015	0.0020	0.0019
6.	15:00-16:00	0.0022	0.0021	0.0029
7.	16:00-17:00	0.0032	0.0024	0.0028
8.	17:00-18:00	0.0025	0.0037	0.0030
9.	18:00-19:00	0.0018	0.0028	0.0020
10.	19:00-20:00	0.0011	0.0024	0.0018
11.	20:00-21:00	0.0018	0.0025	0.0026
12.	21:00-22:00	0.0016	0.0018	0.0023
13.	22:00-23:00	0.0022	0.0017	0.0023
14.	23:00-00:00	0.0016	0.0011	0.0032
15.	00:00-01:00	0.0016	0.0011	0.0032
16.	01:00-02:00	0.0015	0.0016	0.0032
17.	02:00-03:00	0.0017	0.0009	0.0017
18.	03:00-04:00	0.0007	0.0008	0.0016
19.	04:00-05:00	0.0027	0.0013	0.0018
20.	05:00-06:00	0.0026	0.0015	0.0028
21.	06:00-07:00	0.0016	0.0019	0.0029
22.	07:00-08:00	0.0027	0.0017	0.0023
23.	08:00-09:00	0.0030	0.0015	0.0023
24.	09:00-10:00	0.0027	0.0015	0.0026
Minimum		0.0007	0.0008	0.0016
Maximum		0.0032	0.0037	0.0032
Average		0.0020	0.0020	0.0025
Standard <sup>(1)</sup>		0.17		

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

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

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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. : S660326/Sep

Report No. : 2892/2023/5-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : WS & WD

Item	Time	Result					
		วัดโพธิ์นิม					
		14-15/09/23		15-16/09/23		16-17/09/23	
		WS	WD	WS	WD	WS	WD
1.	15:00-16:00	0.9	WNW	0.9	W	0.9	WNW
2.	16:00-17:00	0.9	WNW	0.4	W	0.4	WNW
3.	17:00-18:00	1.3	NW	0.9	W	0.0	WNW
4.	18:00-19:00	0.4	W	0.9	S	0.9	SSE
5.	19:00-20:00	0.9	WSW	0.9	WSW	0.4	SSE
6.	20:00-21:00	0.4	WSW	0.9	NW	0.0	SE
7.	21:00-22:00	0.4	S	0.9	W	0.4	WSW
8.	22:00-23:00	0.4	SW	0.9	W	0.4	S
9.	23:00-00:00	0.0	S	0.9	W	0.0	SE
10.	00:00-01:00	0.0	SSW	0.4	W	0.0	SE
11.	01:00-02:00	0.0	SSW	0.4	W	0.0	SE
12.	02:00-03:00	0.4	SSW	0.4	W	0.0	SE
13.	03:00-04:00	0.4	W	0.4	W	0.9	E
14.	04:00-05:00	0.4	W	0.4	W	0.4	E
15.	05:00-06:00	0.9	WNW	0.4	W	0.0	E
16.	06:00-07:00	0.4	W	0.4	W	0.0	E
17.	07:00-08:00	0.4	NW	0.4	W	0.0	E
18.	08:00-09:00	0.9	WSW	0.4	WSW	0.4	SSE
19.	09:00-10:00	0.9	WNW	0.9	W	0.9	WSW
20.	10:00-11:00	0.9	WNW	0.9	WNW	0.9	WSW
21.	11:00-12:00	0.9	WNW	0.9	WNW	0.9	W
22.	12:00-13:00	1.3	WNW	0.9	WNW	0.9	W
23.	13:00-14:00	0.9	WNW	0.9	WNW	0.9	W
24.	14:00-15:00	1.3	W	0.9	W	0.9	SE
Average		0.7	-	0.7	-	0.4	-

Remark : WS = WIND SPEED (m/s)  
WD = WIND DIRECTION

*Wannasiri S.*

Wannasiri Suriyawong



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Sep

Report No. : 2892/2023/6-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : WS & WD

Item	Time	Result					
		โรงเรียนวัดพิชัยนิมิตร					
		14-15/09/23		15-16/09/23		16-17/09/23	
		WS	WD	WS	WD	WS	WD
1.	13:00-14:00	1.8	N	0.9	N	0.9	NE
2.	14:00-15:00	1.3	N	1.3	N	0.9	W
3.	15:00-16:00	1.3	N	1.3	N	0.4	W
4.	16:00-17:00	1.3	N	0.9	N	0.0	W
5.	17:00-18:00	1.8	N	0.9	NW	0.9	W
6.	18:00-19:00	0.4	NW	0.0	N	0.4	N
7.	19:00-20:00	0.4	NW	0.4	NW	0.0	NW
8.	20:00-21:00	0.0	NW	0.0	NW	0.0	WSW
9.	21:00-22:00	0.0	NW	0.0	SW	0.0	WSW
10.	22:00-23:00	0.0	SSE	0.0	SW	0.0	WSW
11.	23:00-00:00	0.0	SSW	0.0	S	0.0	SSW
12.	00:00-01:00	0.0	SSW	0.0	SW	0.0	WSW
13.	01:00-02:00	0.0	WSW	0.0	SSE	0.0	S
14.	02:00-03:00	0.0	S	0.0	NW	0.0	WSW
15.	03:00-04:00	0.0	WSW	0.0	W	0.0	WSW
16.	04:00-05:00	0.0	N	0.0	NE	0.0	WSW
17.	05:00-06:00	0.4	ESE	0.0	WNW	0.0	WSW
18.	06:00-07:00	0.0	N	0.0	NNW	0.4	WSW
19.	07:00-08:00	0.4	N	0.4	ENE	0.4	WSW
20.	08:00-09:00	0.4	NNW	0.4	N	0.9	W
21.	09:00-10:00	0.4	NNW	0.4	NNE	0.9	W
22.	10:00-11:00	0.9	NW	1.3	NW	1.3	W
23.	11:00-12:00	1.3	NW	0.9	NW	0.9	W
24.	12:00-13:00	0.9	NW	0.9	N	0.9	N
Average		0.5	-	0.4	-	0.4	-

Remark : WS = WIND SPEED (m/s)  
WD = WIND DIRECTION

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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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. : S660326/Sep

Report No. : 2892/2023/7-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : WS & WD

Item	Time	Result					
		วัดโกเมศรัตนาราม					
		14-15/09/23		15-16/09/23		16-17/09/23	
		WS	WD	WS	WD	WS	WD
1.	14:00-15:00	0.4	NW	3.1	NNW	0.9	W
2.	15:00-16:00	0.9	NW	0.4	W	0.4	WNW
3.	16:00-17:00	0.9	NNW	0.0	W	0.0	W
4.	17:00-18:00	1.8	NNW	0.4	W	0.0	W
5.	18:00-19:00	1.3	NNW	0.4	W	0.4	WSW
6.	19:00-20:00	2.2	NNW	0.9	W	0.0	WSW
7.	20:00-21:00	1.3	NNW	1.3	W	0.0	WSW
8.	21:00-22:00	1.3	NNW	0.4	W	0.0	WSW
9.	22:00-23:00	0.9	NNW	0.0	W	0.0	WSW
10.	23:00-00:00	0.4	NNW	0.0	W	0.0	WSW
11.	00:00-01:00	0.0	NNW	0.0	W	0.0	WSW
12.	01:00-02:00	0.0	NNW	0.0	W	0.0	WSW
13.	02:00-03:00	0.4	NNW	0.0	W	0.0	WSW
14.	03:00-04:00	1.3	NNW	0.0	W	0.0	WSW
15.	04:00-05:00	1.8	NNW	0.0	W	0.0	WSW
16.	05:00-06:00	2.2	NNW	0.0	W	0.0	WSW
17.	06:00-07:00	1.8	NNW	0.0	W	0.0	WSW
18.	07:00-08:00	1.8	NNW	0.0	W	0.0	WSW
19.	08:00-09:00	1.8	NNW	0.0	W	0.0	WSW
20.	09:00-10:00	2.7	N	0.4	W	0.4	WSW
21.	10:00-11:00	1.8	NNW	0.9	W	0.4	W
22.	11:00-12:00	1.8	NNW	0.9	W	0.9	N
23.	12:00-13:00	2.2	NNW	1.3	NNW	0.9	NW
24.	13:00-14:00	2.2	NNW	0.9	NW	0.9	W
Average		1.4	-	0.5	-	0.2	-

Remark : WS = WIND SPEED (m/s)  
WD = WIND DIRECTION

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Sep

Report No. : 2892/2023/8-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : WS & WD

Item	Time	Result					
		บริเวณพื้นที่โครงการ (โรงงานเหนือ)					
		14-15/09/23		15-16/09/23		16-17/09/23	
		WS	WD	WS	WD	WS	WD
1.	10:00-11:00	0.0	WSW	1.3	WNW	0.9	WNW
2.	11:00-12:00	0.0	WSW	1.3	W	0.9	W
3.	12:00-13:00	0.4	WSW	0.9	WNW	0.9	W
4.	13:00-14:00	0.4	WSW	0.9	WNW	0.4	W
5.	14:00-15:00	0.4	WNW	0.4	W	0.0	WNW
6.	15:00-16:00	0.0	WNW	0.9	NW	0.9	WNW
7.	16:00-17:00	0.9	WNW	0.9	NW	1.3	NW
8.	17:00-18:00	0.9	NW	1.3	WNW	0.4	WSW
9.	18:00-19:00	0.9	W	0.9	W	0.4	WSW
10.	19:00-20:00	0.9	WSW	0.9	W	0.4	WNW
11.	20:00-21:00	0.4	WSW	0.4	W	0.4	WNW
12.	21:00-22:00	0.4	NW	0.4	W	0.0	WNW
13.	22:00-23:00	0.0	NW	0.4	W	0.0	WNW
14.	23:00-00:00	0.0	W	0.9	W	0.0	WNW
15.	00:00-01:00	0.0	WSW	0.9	WSW	0.4	NW
16.	01:00-02:00	0.0	NW	0.4	WSW	0.9	W
17.	02:00-03:00	0.4	NW	0.4	WNW	0.0	E
18.	03:00-04:00	0.4	W	0.4	WNW	0.0	E
19.	04:00-05:00	0.4	W	0.4	WNW	0.0	NW
20.	05:00-06:00	0.9	WSW	0.9	NW	0.0	W
21.	06:00-07:00	0.9	WSW	0.9	NW	0.9	S
22.	07:00-08:00	0.9	WNW	0.9	NW	0.9	WNW
23.	08:00-09:00	0.9	WNW	1.3	NW	0.9	NW
24.	09:00-10:00	1.3	WNW	0.9	W	0.9	W
Average		0.5	-	0.8	-	0.5	-

Remark : WS = WIND SPEED (m/s)  
WD = WIND DIRECTION

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## TEST REPORT

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Address : 101/104 Moo 20, Soi Navanakorn 1,  
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Pathumthani 12120  
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385  
Job No. : S660326/Sep

Report No. : 2892/2023/9-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))								
		ที่วัดได้								
		14-15/09/23			15-16/09/23			16-17/09/23		
		Leq	Lmax	L90	Leq	Lmax	L90	Leq	Lmax	L90
1.	09:00-10:00	53.9	75.4	48.4	57.0	78.7	48.2	53.0	75.5	47.0
2.	10:00-11:00	49.5	70.3	46.4	49.2	70.1	46.8	47.6	64.3	45.3
3.	11:00-12:00	50.7	72.2	45.2	56.0	74.2	47.0	56.0	80.6	47.1
4.	12:00-13:00	56.9	75.5	47.1	57.4	83.7	49.1	55.7	76.8	47.9
5.	13:00-14:00	65.0	81.8	47.1	55.7	76.5	48.6	54.1	82.6	47.9
6.	14:00-15:00	56.4	91.9	46.9	53.7	81.7	48.2	55.6	83.0	47.2
7.	15:00-16:00	58.5	77.9	47.7	51.2	70.5	48.7	65.4	79.4	48.7
8.	16:00-17:00	56.6	80.2	49.2	58.7	81.4	49.7	57.2	75.8	52.1
9.	17:00-18:00	57.6	85.0	49.4	55.8	77.1	49.7	56.4	79.5	48.9
10.	18:00-19:00	51.3	72.0	48.6	54.8	77.7	51.5	53.5	73.8	49.0
11.	19:00-20:00	52.6	70.8	49.1	55.8	74.5	51.4	56.7	86.1	49.5
12.	20:00-21:00	55.7	74.9	49.2	54.4	76.6	50.7	54.6	77.0	48.8
13.	21:00-22:00	53.3	79.1	48.2	55.1	82.6	50.2	52.5	75.4	49.5
14.	22:00-23:00	48.2	59.5	46.8	51.2	71.3	48.7	58.4	82.8	51.4
15.	23:00-00:00	54.7	84.3	47.8	54.6	76.1	48.1	60.8	79.2	52.9
16.	00:00-01:00	54.1	76.0	48.5	55.7	75.0	48.9	58.9	79.0	53.3
17.	01:00-02:00	54.8	77.2	47.7	52.1	70.6	48.0	58.0	79.0	53.4
18.	02:00-03:00	49.2	63.8	47.6	49.9	65.2	47.5	57.1	78.9	53.4
19.	03:00-04:00	52.5	75.6	48.5	53.5	80.7	48.0	59.3	79.1	54.3
20.	04:00-05:00	56.1	78.7	49.1	58.1	82.9	49.0	59.9	81.8	54.6
21.	05:00-06:00	55.8	83.8	48.8	51.9	75.3	48.6	55.5	71.2	53.4
22.	06:00-07:00	51.5	75.4	48.1	52.4	72.8	47.9	57.0	78.3	49.7
23.	07:00-08:00	55.9	80.7	49.2	57.0	82.3	48.8	59.0	83.8	49.4
24.	08:00-09:00	56.9	81.0	48.3	55.6	75.2	47.4	57.7	82.5	48.1
Leq 24 hr		56.3	-	-	55.1	-	-	58.0	-	-
Lmax		-	91.9	-	-	83.7	-	-	86.1	-
Standard <sup>(1)(2)</sup>		70	115	-	70	115	-	70	115	-
Ldn		60.8	-	-	60.7	-	-	64.9	-	-

Standard : <sup>(1)</sup> Notification of the National Environment Board No. 15 (1997) (B.E 2540)

<sup>(2)</sup> Notification of the Ministry of Industry (2005) (B.E 2548)

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Sep

Report No. : 2892/2023/10-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))								
		ทิศตะวันตก								
		14-15/09/23			15-16/09/23			16-17/09/23		
		Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>
1.	09:00-10:00	64.6	87.7	62.3	66.6	92.6	62.7	66.1	91.3	63.9
2.	10:00-11:00	64.3	80.6	62.6	64.4	86.9	62.6	64.1	84.4	61.7
3.	11:00-12:00	64.0	77.3	62.8	63.7	85.0	62.0	63.3	84.2	61.3
4.	12:00-13:00	65.5	93.2	62.7	66.7	90.8	63.9	64.6	81.1	63.0
5.	13:00-14:00	64.8	82.9	63.0	65.0	82.4	63.2	65.1	82.6	63.1
6.	14:00-15:00	65.2	81.4	63.1	64.7	82.8	63.1	65.7	84.7	63.6
7.	15:00-16:00	66.3	87.3	64.0	64.4	82.3	62.8	68.8	82.1	64.3
8.	16:00-17:00	66.9	80.4	64.3	65.4	80.3	63.2	68.0	89.6	65.2
9.	17:00-18:00	65.0	86.0	63.4	65.6	90.3	62.8	65.4	83.3	62.9
10.	18:00-19:00	65.8	90.3	63.5	65.7	85.5	63.3	66.1	85.2	63.4
11.	19:00-20:00	63.9	80.8	62.5	64.1	77.4	62.4	67.7	84.2	66.0
12.	20:00-21:00	65.4	82.9	63.2	66.4	86.4	64.7	67.0	86.0	65.1
13.	21:00-22:00	65.0	85.8	63.4	65.6	81.9	64.0	66.6	87.5	64.1
14.	22:00-23:00	65.4	82.1	64.1	65.1	82.5	63.3	68.2	87.1	66.5
15.	23:00-00:00	64.8	79.0	63.4	63.9	78.3	62.6	67.6	87.2	65.9
16.	00:00-01:00	63.9	80.3	62.4	64.2	81.9	62.5	67.9	88.1	66.0
17.	01:00-02:00	63.6	79.9	62.0	64.1	82.4	62.8	66.9	84.7	64.4
18.	02:00-03:00	64.3	79.2	63.2	64.0	77.4	62.3	68.0	85.6	65.9
19.	03:00-04:00	62.5	81.3	60.8	63.2	79.9	61.7	68.0	87.6	66.1
20.	04:00-05:00	63.5	83.0	61.9	65.2	86.4	63.6	67.8	88.7	65.6
21.	05:00-06:00	64.3	83.1	62.3	64.4	83.1	62.4	66.6	83.0	64.7
22.	06:00-07:00	64.9	87.3	63.0	64.1	79.1	62.4	65.1	82.9	62.6
23.	07:00-08:00	64.5	79.9	63.0	65.2	89.8	62.8	66.2	83.8	64.1
24.	08:00-09:00	66.0	91.8	63.6	65.7	90.1	63.5	66.2	85.8	64.3
Leq 24 hr		64.9	-	-	65.0	-	-	66.8	-	-
Lmax		-	93.2	-	-	92.6	-	-	91.3	-
Standard <sup>(1)(2)</sup>		70	115	-	70	115	-	70	115	-
Ldn		70.8	-	-	70.9	-	-	73.7	-	-

Standard : <sup>(1)</sup> Notification of the National Environment Board No. 15 (1997) (B.E 2540)

<sup>(2)</sup> Notification of the Ministry of Industry (2005) (B.E 2548)

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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1/6 Soi Ramkhamhaeng 145, Khwaeng / Khet Saphansung, Bangkok 10240  
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E-mail : admin@tet1995.com  
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. : S660326/Sep

Report No. : 2892/2023/11-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))								
		ทิศเหนือ								
		14-15/09/23			15-16/09/23			16-17/09/23		
		Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>
1.	09:00-10:00	59.9	75.6	57.9	64.0	97.9	57.1	57.0	77.3	54.7
2.	10:00-11:00	60.0	81.2	57.4	59.7	80.4	57.2	61.0	91.3	55.0
3.	11:00-12:00	59.5	78.9	56.3	58.2	75.2	56.3	61.7	97.7	54.3
4.	12:00-13:00	56.9	72.6	54.9	59.4	81.1	56.8	57.4	86.4	54.3
5.	13:00-14:00	58.3	80.0	55.5	58.1	75.9	55.7	58.4	85.4	55.4
6.	14:00-15:00	62.0	92.2	57.6	64.0	98.8	55.8	60.1	84.7	54.6
7.	15:00-16:00	63.7	92.2	56.3	59.8	91.0	55.0	65.4	103.2	54.7
8.	16:00-17:00	64.9	86.6	55.8	59.8	93.7	54.8	63.3	80.6	57.1
9.	17:00-18:00	58.3	71.4	56.2	57.5	76.4	54.2	60.9	77.8	57.5
10.	18:00-19:00	61.4	87.7	56.6	63.5	92.9	57.1	57.9	68.8	55.3
11.	19:00-20:00	57.4	71.5	55.3	59.9	73.0	57.6	56.7	83.1	54.2
12.	20:00-21:00	56.5	68.3	55.5	58.5	82.0	55.7	58.2	80.9	55.4
13.	21:00-22:00	59.7	82.8	56.5	58.8	83.0	56.1	61.5	88.6	54.9
14.	22:00-23:00	59.2	88.8	55.5	57.1	75.6	55.5	57.6	74.8	54.5
15.	23:00-00:00	57.1	84.5	54.8	57.4	80.6	54.6	66.3	94.0	56.0
16.	00:00-01:00	57.9	77.8	55.1	57.1	68.3	55.4	61.9	88.7	56.4
17.	01:00-02:00	58.7	95.0	56.8	61.4	96.3	54.1	59.1	83.9	54.2
18.	02:00-03:00	60.5	100.9	56.3	58.7	85.8	54.5	59.2	89.5	54.6
19.	03:00-04:00	56.0	67.1	54.7	56.2	73.7	54.8	58.8	79.8	55.5
20.	04:00-05:00	57.4	82.2	54.9	60.8	96.3	55.2	59.4	81.1	56.0
21.	05:00-06:00	61.8	89.2	56.7	58.8	87.1	55.0	56.9	74.1	53.8
22.	06:00-07:00	61.4	86.5	57.5	62.9	97.0	55.1	65.3	94.7	54.4
23.	07:00-08:00	61.3	90.3	56.1	63.9	95.4	55.7	59.3	79.1	55.8
24.	08:00-09:00	64.1	89.6	56.0	60.7	83.4	55.2	60.9	84.0	57.7
Leq 24 hr		60.5	-	-	60.5	-	-	61.1	-	-
Lmax		-	100.9	-	-	98.8	-	-	103.2	-
Standard <sup>(1)(2)</sup>		70	115	-	70	115	-	70	115	-
Ldn		66.0	-	-	66.2	-	-	68.0	-	-

Standard : <sup>(1)</sup> Notification of the National Environment Board No. 15 (1997) (B.E 2540)

<sup>(2)</sup> Notification of the Ministry of Industry (2005) (B.E 2548)

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Sep

Report No. : 2892/2023/12-12  
Report Date : September 22, 2023  
Sampling Date : September 14-17, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))								
		ทิศตะวันออก								
		14-15/09/23			15-16/09/23			16-17/09/23		
		Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>	Leq	Lmax	L <sub>90</sub>
1.	09:00-10:00	54.9	73.9	50.8	54.5	66.0	52.3	58.5	71.1	55.0
2.	10:00-11:00	63.1	73.5	55.7	56.0	81.1	50.8	59.6	70.5	56.1
3.	11:00-12:00	63.5	77.2	58.8	58.3	77.5	51.9	60.4	76.8	55.1
4.	12:00-13:00	59.7	77.5	55.7	56.8	75.1	52.2	59.5	75.0	56.6
5.	13:00-14:00	60.0	79.1	56.6	61.1	79.1	57.0	59.2	80.0	55.2
6.	14:00-15:00	60.8	74.8	56.6	61.2	72.4	58.1	58.2	67.9	56.0
7.	15:00-16:00	60.1	74.7	55.5	59.9	71.3	55.8	57.0	74.9	53.5
8.	16:00-17:00	58.8	72.0	54.7	58.3	72.7	54.5	57.2	74.3	55.1
9.	17:00-18:00	59.0	70.0	56.3	56.8	70.5	52.7	56.0	70.0	52.4
10.	18:00-19:00	56.6	68.8	54.6	54.5	69.1	49.6	56.6	76.1	52.7
11.	19:00-20:00	55.3	70.4	51.4	55.6	67.0	50.2	55.9	71.0	51.9
12.	20:00-21:00	55.8	69.5	52.0	57.1	73.9	53.9	54.4	68.2	50.1
13.	21:00-22:00	55.5	70.1	51.7	57.7	74.6	54.3	55.0	66.9	51.3
14.	22:00-23:00	55.1	67.3	50.4	58.6	73.8	55.3	54.9	71.8	50.7
15.	23:00-00:00	54.3	68.6	50.4	59.7	73.5	56.4	54.9	70.5	50.2
16.	00:00-01:00	54.6	69.3	50.9	55.6	71.2	53.4	54.7	68.5	50.5
17.	01:00-02:00	54.2	76.7	50.3	56.6	69.4	54.3	55.2	72.3	51.8
18.	02:00-03:00	54.3	71.0	51.4	56.6	67.3	54.0	53.9	71.9	49.6
19.	03:00-04:00	56.6	79.1	50.7	55.8	66.3	51.2	55.6	70.8	51.9
20.	04:00-05:00	54.3	69.4	50.4	53.6	76.2	49.7	55.3	71.9	51.8
21.	05:00-06:00	55.4	72.2	52.3	55.2	67.2	51.6	55.3	68.4	52.0
22.	06:00-07:00	56.7	78.1	52.5	59.6	75.6	55.0	54.0	69.6	49.9
23.	07:00-08:00	57.2	73.9	53.1	61.3	79.6	57.2	57.9	75.5	55.2
24.	08:00-09:00	55.8	68.2	54.0	59.0	78.8	55.8	57.3	73.9	55.0
Leq 24 hr		58.2	-	-	58.0	-	-	57.0	-	-
Lmax		-	79.1	-	-	81.1	-	-	80.0	-
Standard <sup>(1)(2)</sup>		70	115	-	70	115	-	70	115	-
Ldn		62.5	-	-	63.9	-	-	61.9	-	-

Standard : <sup>(1)</sup> Notification of the National Environment Board No. 15 (1997) (B.E 2540)

<sup>(2)</sup> Notification of the Ministry of Industry (2005) (B.E 2548)

Wannasiri S.

Wannasiri Suriyawong



Somchai P.

Somchai Piyavorasakul  
General Manager

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## TEST REPORT

**Analysis No.** : R23-2588  
**Received Date** : 17, 21/08/23  
**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

**Report Date** : 25/08/23  
**Analysis Date** : 17-24/08/23  
**Job No.** : S660326/Aug/Occ  
**Sampling By** : TET  
**Type of Sample** : Working Area

Fax. (02) 529 4385

Sample No.	Sampling point	Parameter	Unit	Sampling Date	Result	Standard <sup>(1)</sup>	Analysis Date
2308-AW0366	บริเวณเตาหลอมอลูมิเนียม (CASTING GROUP) Melting Furnace/D-Line/CA	Total Dust	mg/m <sup>3</sup>	15/08/23	< 0.010	10 <sup>(2)</sup>	17-18/08/23
		Al	mg/m <sup>3</sup>	15/08/23	< 0.04	15	24/08/23
		HF	ppm	15/08/23	< 0.012	3	21/08/23
2308-AW0367	บริเวณเครื่องรีด (EXTRUSION GROUP) Press Area/D-Line/EX	Total Dust	mg/m <sup>3</sup>	15/08/23	< 0.010	10 <sup>(2)</sup>	17-18/08/23
2308-AW0368	บริเวณพื้นที่ชุบ (SURFACE TREATMENT GROUP) Surface Area/D-Line/ST	Total Dust	mg/m <sup>3</sup>	16/08/23	< 0.010	10 <sup>(2)</sup>	17-18/08/23
		NaOH	mg/m <sup>3</sup>	16/08/23	< 0.40	2	17/08/23
		H <sub>2</sub> SO <sub>4</sub>	mg/m <sup>3</sup>	16/08/23	0.08	1	21/08/23
		NH <sub>3</sub>	ppm	16/08/23	2.305	50	18/08/23
2308-AW0369	บริเวณโรงประกอบ (FABRICATION GROUP) Cutting Area/Fab4	Total Dust	mg/m <sup>3</sup>	16/08/23	< 0.010	10 <sup>(2)</sup>	17-18/08/23
2308-AW0370	Cutting Area/Fab6	Total Dust	mg/m <sup>3</sup>	16/08/23	< 0.010	10 <sup>(2)</sup>	17-18/08/23
2308-AW0524	บริเวณพื้นที่พ่นสี (PART PRODUCT GROUP) Paint Room/Fab5C/PT	Xylene	ppm	19/08/23	5.731	100	23-24/08/23
		Toluene	ppm	19/08/23	12.114	200	23-24/08/23
		Benzene	ppm	19/08/23	< 0.003	1	23-24/08/23

**Method** :  
Total Dust - Filtering, Gravimetric (NIOSH 0500, Issue 2 :Aug 1994)  
Al - Filtering, ICP (NIOSH 7300, Issue 3: Mar 2003)  
HF - Filtering, ISE (OSHA ID-110, Feb 1991)  
NaOH - Filtering, Titrimetric (NIOSH 7401, Issue 2 :Aug 1994)  
H<sub>2</sub>SO<sub>4</sub> - Filtering, IC (NIOSH 7908, Issue 1 :May 2014)  
NH<sub>3</sub> - Absorbing Solution, Colorimetric (APHA 801)  
Xylene - Solid Sorbent Tube, GC/FID (NIOSH 1501, Issue 3 :Mar 2003)  
Toluene - Solid Sorbent Tube, GC/FID (NIOSH 1501, Issue 3 :Mar 2003)  
Benzene - Solid Sorbent Tube, GC/FID (NIOSH 1501, Issue 3 :Mar 2003)

**Standard** (1) Notification of the Department of Labour Protection and Welfare. (2017) (B.E. 2560) (TLV-TWA)  
(2) American Conference of Governmental Industrial Hygienists ; ACGIH (TLV-TWA)

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

25/08/23

Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

25/08/23

END OF REPORT

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

ORIGINAL

ต้นฉบับ

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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. : S660326/Aug/Occ

Report No. : 2588/2023/1-4  
Report Date : August 22, 2023  
Sampling Date : August 15, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))	
		บริเวณเตาหลอมอลูมิเนียม (CASTING GROUP)	
		Melting Furnace/D-Line/CA	
		15/08/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	85.4	98.8
2.	10.00-11.00	80.1	92.1
3.	11.00-12.00	85.4	97.1
4.	12.00-13.00	80.0	84.7
5.	13.00-14.00	84.7	99.8
6.	14.00-15.00	80.0	84.0
7.	15.00-16.00	80.9	92.4
8.	16.00-17.00	80.9	89.4
Leq 8 hr		82.8	-
Lmax		-	99.8
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

ORIGINAL

ต้นฉบับ

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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. : S660326/Aug/Occ

Report No. : 2588/2023/2-4  
Report Date : August 22, 2023  
Sampling Date : August 15, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))	
		เครื่องรีด/EXTRUSION GROUP	
		Press machine/D-line/EX	
		15/08/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	82.5	95.2
2.	10.00-11.00	82.9	94.0
3.	11.00-12.00	82.3	96.1
4.	12.00-13.00	82.5	92.8
5.	13.00-14.00	83.2	100.5
6.	14.00-15.00	81.7	94.2
7.	15.00-16.00	82.3	92.2
8.	16.00-17.00	82.1	93.5
Leq 8 hr		82.5	-
Lmax		-	100.5
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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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. : 2588/2023/3-4

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

Report Date : August 22, 2023

Sampling Date : August 16, 2023

Type of Sample : Sound Level

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

Job No. : S660326/Aug/Occ

Item	Time	Result (dB(A))	
		พื้นที่ชุมชน/SURFACE TREATMENT GROUP	
		Chiller Area/D-line/ST	
		16/08/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	78.7	85.5
2.	10.00-11.00	82.0	86.0
3.	11.00-12.00	79.4	85.6
4.	12.00-13.00	79.7	88.6
5.	13.00-14.00	80.7	82.8
6.	14.00-15.00	80.1	82.8
7.	15.00-16.00	79.8	83.1
8.	16.00-17.00	80.2	82.8
Leq 8 hr		80.2	-
Lmax		-	88.6
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด

ORIGINAL

ต้นฉบับ

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

E-mail : admin@tet1995.com

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. : S660326/Aug/Occ

Report No. : 2588/2023/4-4  
Report Date : August 22, 2023  
Sampling Date : August 17, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))			
		โรงประกอบ/FABRICATION GROUP			
		Line Area FAB4/FA		Line Area FAB6/FA	
		17/08/23		17/08/23	
		Leq 1 hr.	Lmax	Leq 1 hr.	Lmax
1.	09.00-10.00	71.0	98.8	82.2	100.3
2.	10.00-11.00	71.3	81.0	83.6	102.5
3.	11.00-12.00	72.1	87.5	78.4	93.3
4.	12.00-13.00	72.2	86.2	81.0	95.5
5.	13.00-14.00	71.0	81.1	78.2	92.4
6.	14.00-15.00	67.0	82.2	81.8	97.8
7.	15.00-16.00	71.9	84.2	80.4	98.5
8.	16.00-17.00	71.5	87.1	80.9	98.6
Leq 8 hr		71.2	-	81.1	-
Lmax		-	98.8	-	102.5
Standard		90	140	90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



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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. : S660326/Oct/Occ

Report No. : 2023/1-6  
Report Date : October 12, 2023  
Sampling Date : October 5, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))	
		บริเวณเตาหลอมอลูมิเนียม (CASTING GROUP)	
		Melting Furnace/D-Line/CA	
		05/10/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	79.6	98.2
2.	10.00-11.00	80.9	101.1
3.	11.00-12.00	84.3	108.8
4.	12.00-13.00	79.1	98.7
5.	13.00-14.00	79.0	94.0
6.	14.00-15.00	78.7	92.5
7.	15.00-16.00	78.6	100.9
8.	16.00-17.00	78.1	96.4
Leq 8 hr		80.3	-
Lmax		-	108.8
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Yoonim*

Suphakchaya Yoonim



*Somchai P.*

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General Manager

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## TEST REPORT

Customer Name : Tostem Thai Co., Ltd./North Factory/EIA  
Address : 101/104 Moo 20, Soi Navanakorn 1,  
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Pathumthani 12120  
Contact : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385  
Job No. : S660326/Oct/Occ

Report No. : 2023/2-6  
Report Date : October 12, 2023  
Sampling Date : October 5, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))	
		เครื่องรีด/EXTRUSION GROUP	
		Press machine/D-line/EX	
		05/10/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	84.1	97.0
2.	10.00-11.00	83.6	91.9
3.	11.00-12.00	83.2	94.9
4.	12.00-13.00	83.1	91.6
5.	13.00-14.00	84.4	93.2
6.	14.00-15.00	82.2	99.1
7.	15.00-16.00	84.7	101.1
8.	16.00-17.00	84.2	104.0
Leq 8 hr		83.8	-
Lmax		-	104.0
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

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General Manager

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## 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. : S660326/Oct/Occ

Report No. : 2023/3-6  
Report Date : October 12, 2023  
Sampling Date : October 4, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))	
		พื้นที่ชุมชน/SURFACE TREATMENT GROUP	
		Chiller Area/D-line/ST	
		04/10/23	
		Leq 1 hr.	Lmax
1.	09.00-10.00	70.1	75.8
2.	10.00-11.00	75.0	77.2
3.	11.00-12.00	75.0	77.4
4.	12.00-13.00	75.0	77.2
5.	13.00-14.00	75.3	77.5
6.	14.00-15.00	74.1	76.7
7.	15.00-16.00	75.3	77.5
8.	16.00-17.00	75.3	77.7
Leq 8 hr		74.6	-
Lmax		-	77.7
Standard		90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



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General Manager

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## 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. : S660326/Oct/Occ

Report No. : 2023/4-6  
Report Date : October 12, 2023  
Sampling Date : October 2, 2023  
Type of Sample : Sound Level

Item	Time	Result (dB(A))			
		โรงประกอบ/FABRICATION GROUP			
		Line Area FAB4/FA		Line Area FAB6/FA	
		02/10/23		02/10/23	
		Leq 1 hr.	Lmax	Leq 1 hr.	Lmax
1.	09.00-10.00	72.3	86.0	72.3	106.8
2.	10.00-11.00	71.8	83.9	57.5	75.2
3.	11.00-12.00	72.0	87.0	62.4	71.9
4.	12.00-13.00	67.9	82.9	63.2	71.9
5.	13.00-14.00	64.8	82.1	65.9	96.9
6.	14.00-15.00	70.7	84.6	68.0	100.4
7.	15.00-16.00	72.1	89.0	64.6	73.3
8.	16.00-17.00	72.3	85.4	67.3	98.3
Leq 8 hr		71.1	-	67.0	-
Lmax		-	89.0	-	106.8
Standard		90	140	90	140

Standard : Notification of the Ministry of Industry (2003) (B.E. 2546)

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager

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## 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. : S660326/Oct/Occ

Report No. : 2023/5-6  
Report Date : October 12, 2023  
Sampling Date : October 5 & 7, 2023  
Type of Sample : Heat

Item	Description	Sampling Date	Sampling Time	Result (°C)				
				NWB	DB	GT	WBGT	WBGT Average
1.	โรงงานเหนือ บริเวณเตาหลอมอลูมิเนียม (CASTING GROUP) Melting Furnace/D-Line/CA - ขับรถโฟล์คลิฟท์นำอลูมิเนียมเข้าเตาหลอม (80 นาที) - นั่งพัก/ทำงานเอกสาร (40 นาที)	05/10/23	10.00-12.00	29.6 20.1	34.1 24.1	36.3 28.4	31.6 22.6	28.6
2.	เครื่องรีด (EXTRUSION GROUP) Press area D-line/EX - ยืนควบคุมเครื่องรีดแผ่นอลูมิเนียมและเปลี่ยนหัวแม่พิมพ์ (Mold) (120 นาที)	05/10/23	10.00-12.00	28.6	32.0	34.1	30.3	30.3
3.	พื้นที่พ่นสี/Paint Line/Paint Room (PART PRODUCT GROUP) Paint room/Paint Line/PT - ยืนควบคุมเครื่องพ่นสี (80 นาที) - นั่งพัก/ทำงานเอกสาร (40 นาที)	07/10/23	10.00-12.00	28.1 27.0	31.9 31.0	33.4 32.3	29.7 28.6	29.3
Standard <sup>(1)(2)</sup>				-	-	-	-	32.0

Standard : <sup>(1)</sup> Ministry of Labour's Regulation (2016) (B.E. 2559) ; Moderate Work Load

<sup>(2)</sup> Notification of the Ministry of Industry (2003)(B.E. 2546) ; Moderate Work Load

Remark : Indoor (inside building or workplace) : WBGT = 0.7 NWB + 0.3 GT  
When : DB = Dry Bulb Thermometer  
GT = Globe Thermometer  
NWB = Natural Wet Bulb Thermometer  
WBGT = Wet Bulb Globe Temperature

$$\text{WBGT Average} = \frac{(\text{WBGT}_1 \times t_1) + (\text{WBGT}_2 \times t_2) + \dots + (\text{WBGT}_n \times t_n)}{t_1 + t_2 + \dots + t_n}$$

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager





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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. : S660326/Oct/Occ

Report No. : 2023/6-6  
Report Date : October 12, 2023  
Sampling Date : October 4, 2023  
Type of Sample : Heat

Item	Description	Sampling Date	Sampling Time	Result (°C)				
				NWB	DB	GT	WBGT	WBGT Average
1.	โรงงานเหนือ บริเวณพื้นที่ขุบ (SURFACE TREATMENT GROUP) Unloading area D-line/ST - ยืนจัดเรียงชิ้นงานแผ่นอลูมิเนียมเข้าบ่อขุบ (120 นาที)	04/10/23	10.00-12.00	27.3	31.5	33.0	29.0	29.0
Standard <sup>(1)(2)</sup>				-	-	-	-	32.0

Standard : <sup>(1)</sup> Ministry of Labour's Regulation (2016) (B.E. 2559) ; Moderate Work Load

<sup>(2)</sup> Notification of the Ministry of Industry (2003)(B.E. 2546) ; Moderate Work Load

Remark : Indoor (inside building or workplace) : WBGT = 0.7 NWB + 0.3 GT

When : DB = Dry Bulb Thermometer

GT = Globe Thermometer

NWB = Natural Wet Bulb Thermometer

WBGT = Wet Bulb Globe Temperature

$$\text{WBGT Average} = \frac{(\text{WBGT}_1 \times t_1) + (\text{WBGT}_2 \times t_2) + \dots + (\text{WBGT}_n \times t_n)}{t_1 + t_2 + \dots + t_n}$$

*Suphakchaya Y.*

Suphakchaya Yoonim



*Somchai P.*

Somchai Piyavorasakul  
General Manager



**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**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

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

**Sample Conditions** : 2308-WW0472 = white turbid/high white sediment/covered with oil slick/smell, Flow Rate = 70 m<sup>3</sup>/hr.  
2308-WW0473 = clear/slight white sediment, Flow Rate = 70 m<sup>3</sup>/hr.

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)				
				2308-WW0472	2308-WW0473			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.4	28.7	40	45	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	4.16	6.80	5.5-9.0	6.0-9.0	17/08/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	36.8	4.3	-	500	23/08/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	1,418	2,028	3,000	3,000	23/08/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	3	1	20	450	18-23/08/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	25	13	120	600	21/08/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	1.1	0.6	5	100	18/08/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	12.63	16.43	100	100	23/08/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	< 0.001	0.2	5.0	22/08/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	< 0.001	1.0	10	24/08/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	1,262.08	1,780.02	-	-	22/08/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	< 0.01	1.0	1.0	24/08/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	0.03	< 0.02	0.75	0.75	25/08/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	21/08/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	23/08/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	29/08/23

continue

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**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**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

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)				
				2308-WW0472	2308-WW0473			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	181.84	0.82	-	5.0	24/08/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	28/08/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	1.0	1.0	25/08/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	25/08/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.46	< 0.05	2.0	1.0	25/08/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.05	< 0.05	-	5.0	25/08/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.13	0.08	5.0	5.0	25/08/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	3.23 *	0.24	1.0	1.0	25/08/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	25/08/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.09	< 0.04	5.0	5.0	25/08/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: Wastewater Surface Treatment Plant (WWTP1) Inlet = 47P 0671235 UTM 1561362  
Wastewater Surface Treatment Plant (WWTP1) Outlet = 47P 0671234 UTM 1561351

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ชงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธศักดิ์

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)

(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)

(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
30.08.23



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager  
30.08.23



**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
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**Address** : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,  
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**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

**Sample Conditions** : 2308-WW0468 = white turbid/high white sediment/covered with oil slick/smell, Flow Rate = 2.5 m<sup>3</sup>/hr.  
2308-WW0469 = clear/slight white sediment, Flow Rate = 2.5 m<sup>3</sup>/hr.

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				IR Wastewater Treatment Plant				
				(WWTP2)				
				2308-WW0468	2308-WW0469			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.1	31.3	40	45	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	3.79	7.65	5.5-9.0	6.0-9.0	17/08/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	17.0	12.2	-	500	23/08/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	664	298	3,000	3,000	23/08/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	5,750	6	20	450	18-23/08/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	17,642	60	120	600	21/08/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	1.3	0.8	5	100	18/08/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method  (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	79.56	2.01	100	100	23/08/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	< 0.001	0.2	5.0	22/08/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	0.503	0.039	1.0	10	24, 25/08/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	10.87	67.61	-	-	22/08/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	238.82	0.67	1.0	1.0	24/08/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ;  Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	0.50	< 0.02	0.75	0.75	25/08/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	21/08/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	23/08/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method  (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	29/08/23

continue

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**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**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

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				IR Wastewater Treatment Plant (WWTP2)				
				2308-WW0468	2308-WW0469			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	9.14	0.30	-	5.0	24/08/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	28/08/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.68	0.06	1.0	1.0	25/08/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	25/08/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	2.0	1.0	25/08/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	45.90 *	0.09	-	5.0	25/08/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.46	0.02	5.0	5.0	25/08/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	4.97 *	< 0.02	1.0	1.0	25/08/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	25/08/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.26	< 0.04	5.0	5.0	25/08/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: IR Wastewater Treatment Plant (WWTP2) Inlet = 47P 0671247 UTM 1561369, Analysis Date Phenol = 25/08/23  
IR Wastewater Treatment Plant (WWTP2) Outlet = 47P 0671248 UTM 1561355, Analysis Date Phenol = 24/08/23

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธิสกุล

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)

(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)

(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

30/08/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

30/08/23



**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**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

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

**Sample Conditions** : 2308-WW0470 = white turbid/high white sediment/covered with oil slick/smell, Flow Rate = 2.5 m<sup>3</sup>/hr.  
2308-WW0471 = clear/slight white sediment, Flow Rate = 2.5 m<sup>3</sup>/hr.

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				PT Wastewater Treatment Plant (WWTP3)				
				2308-WW0470	2308-WW0471			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	31.5	31.3	40	45	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.48	7.89	5.5-9.0	6.0-9.0	17/08/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	141.5	< 2.5	-	500	23/08/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	752	248	3,000	3,000	23/08/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	134	2	20	450	18-23/08/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	528	23	120	600	21/08/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	58.5	2.4	5	100	18/08/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	2.79	0.45	100	100	23/08/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	< 0.001	0.2	5.0	22/08/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	0.021	< 0.001	1.0	10	24/08/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	121.76	37.39	-		22/08/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	< 0.01	1.0	1.0	24/08/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	0.23	< 0.02	0.75	0.75	25/08/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	21/08/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	23/08/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	29/08/23

continue

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**Analysis No.** : R23-2592  
**Received Date** : 18/08/23  
**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

## TEST REPORT

**Report Date** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				PT Wastewater Treatment Plant (WWTP3)				
				2308-WW0470	2308-WW0471			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	4.77	< 0.20	-	5.0	24/08/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	28/08/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	1.0	1.0	25/08/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	25/08/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	2.0	1.0	25/08/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.19	0.06	-	5.0	25/08/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	5.0	5.0	25/08/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	1.0	1.0	25/08/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	25/08/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.19	0.07	5.0	5.0	25/08/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"  
: PT Wastewater Treatment Plant (WWTP3) Inlet = 47P 0671542 UTM 1561274  
PT Wastewater Treatment Plant (WWTP3) Outlet = 47P 0671541 UTM 1561260

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017  
(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิศุทธิศักดิ์

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)  
(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)  
(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
30/08/23



Approved by

Mrs. Pornip Pethshee  
Laboratory Manager  
30/08/23

..... END OF REPORT .....



## TEST REPORT

Analysis No. : R23-2592/DIW

Received Date : 18/08/23

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

Sample Conditions : 2308-WW0473 = clear/slight white sediment

Report Date : 30/08/23

Analysis Date : 17-29/08/23

Job No. : S660326/Aug

Sampling Date \* : 17/08/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๓-236-๓-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)		
				2308-WW0473		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	28.7	40	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	6.80	5.5-9.0	17/08/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	2,028	3,000	23/08/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	1	20	18-23/08/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	13	120	21/08/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.6	5	18/08/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	16.43	100	23/08/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	22/08/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	24/08/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	24/08/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	25/08/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	21/08/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	23/08/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.02	29/08/23

continue

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

Analysis No. : R23-2592/DIW

Received Date : 18/08/23

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 : 30/08/23

Analysis Date : 17-29/08/23

Job No. : S660326/Aug

Sampling Date \* : 17/08/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๓-236-๓-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				Wastewater Surface Treatment Plant		
				(WWTP1)		
				2308-WW0473		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	25/08/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	25/08/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	25/08/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.08	5.0	25/08/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.24	1.0	25/08/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	25/08/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	5.0	25/08/23

Remarks : \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: Wastewater Surface Treatment Plant (WWTP1) Outlet = 47P 0671234 UTM 1561351

Method (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ชงชัย พรหมสวัสดิ์, วิทยาลัยกษัตริย์ วสุทริศศักดิ์

Standard : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory

๓-236-๓-0002  
30/08/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager

๓-236-๓-0003  
30/08/23

- PRIVATE LABORATORY REGISTERED NO. ๓-236
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## TEST REPORT

**Analysis No.** : R23-2592/DIW

**Received Date** : 18/08/23

**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

**Sample Conditions** : 2308-WW0469 = clear/slight white sediment

**Report Date** : 30/08/23

**Analysis Date** : 17-29/08/23

**Job No.** : S660326/Aug

**Sampling Date \*** : 17/08/23

**Sampling By \*** : Mr. Jirawad Intasay

**Registration No.** : จ-236-จ-0013

**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				IR Wastewater Treatment Plant		
				(WWTP2)		
				2308-WW0469		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	31.3	40	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.65	5.5-9.0	17/08/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	298	3,000	23/08/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	6	20	18-23/08/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	60	120	21/08/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.8	5	18/08/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method  (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	2.01	100	23/08/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	22/08/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	0.039	1.0	24/08/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	0.67	1.0	24/08/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) <sup>[2]</sup> ;  Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	25/08/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	21/08/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	23/08/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method  (SM 3114C)	< 0.0005	0.02	29/08/23

continue

- PRIVATE LABORATORY REGISTERED NO. จ-236
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## TEST REPORT

Analysis No. : R23-2592/DIW

Received Date : 18/08/23

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 : 30/08/23

Analysis Date : 17-29/08/23

Job No. : S660326/Aug

Sampling Date \* : 17/08/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๖-236-๖-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				IR Wastewater Treatment Plant		
				(WWTP2)		
				2308-WW0469		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.06	1.0	25/08/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	25/08/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	25/08/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.02	5.0	25/08/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	1.0	25/08/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	25/08/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	5.0	25/08/23

Remarks \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: IR Wastewater Treatment Plant (WWTP2) Outlet = 47P 0671248 UTM 1561355

Method (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ชงชัย พรหมสวัสดิ์, วิทยาลัยเทคโนโลยีสุรนารี

Standard : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory

๖-236-๖-0002  
30/08/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager

๖-236-๖-0003  
30/08/23

- PRIVATE LABORATORY REGISTERED NO. ๖-236
- REPORTED RESULTS REFER TO SUBMITTED SAMPLE(S) ONLY
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## TEST REPORT

Analysis No. : R23-2592/DIW

Received Date : 18/08/23

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

Sample Conditions : 2308-WW0471 = clear/slight white sediment

Report Date : 30/08/23

Analysis Date : 17-29/08/23

Job No. : S660326/Aug

Sampling Date \* : 17/08/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๖-236-๖-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				PT Wastewater Treatment Plant		
				(WWTP3)		
				2308-WW0471		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	31.3	40	17/08/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.89	5.5-9.0	17/08/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	248	3,000	23/08/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	2	20	18-23/08/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	23	120	21/08/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	2.4	5	18/08/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	0.45	100	23/08/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	22/08/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	24/08/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	24/08/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	25/08/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	21/08/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	23/08/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.02	29/08/23

continue

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด



ORIGINAL

ต้นฉบับ

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

E-mail : admin@tet1995.com

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

Page 6 of 6

## TEST REPORT

**Analysis No.** : R23-2592/DIW  
**Received Date** : 18/08/23  
**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** : 30/08/23  
**Analysis Date** : 17-29/08/23  
**Job No.** : S660326/Aug  
**Sampling Date \*** : 17/08/23  
**Sampling By \*** : Mr. Jirawad Intasay  
**Registration No.** : ๖-236-๖-0013  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				PT Wastewater Treatment Plant (WWTP3)		
				2308-WW0471		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	25/08/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	25/08/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	25/08/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	5.0	25/08/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	1.0	25/08/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	25/08/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.07	5.0	25/08/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"  
: PT Wastewater Treatment Plant (WWTP3) Outlet = 47P 0671541 UTM 1561260  
**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017  
(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ชงชัย พรหมสวัสดิ์, วิทยาลัยกษัตริย์ วสุทศศักดิ์  
**Standard** : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
๖-236-๖-0002  
30/08/23



Approved by

Mrs. Pornpip Pethshee  
Laboratory Manager  
๖-236-๖-0003  
30/08/23

..... END OF REPORT .....

- PRIVATE LABORATORY REGISTERED NO. ๖-236
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## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

**Sample Conditions** : 2310-WW0202 = white turbid/high white sediment/covered with oil slick/smell, Flow Rate = 70 m<sup>3</sup>/hr.  
2310-WW0203 = clear, Flow Rate = 70 m<sup>3</sup>/hr.

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)				
				2310-WW0202	2310-WW0203			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	27.3	28.1	40	45	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	4.01	7.05	5.5-9.0	6.0-9.0	06/10/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	17.4	< 2.5	-	500	10/10/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	2,027	2,237	3,000	3,000	10-11/10/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	4	3	20	450	11-16/10/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	41	33	120	600	10/10/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	1.8	0.6	5	100	12/10/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	14.35	19.23	100	100	10/10/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	< 0.001	0.2	5.0	12/10/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	< 0.001	1.0	10	12/10/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	2,191.85	1,796.81	-	-	11/10/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	< 0.01	1.0	1.0	11/10/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	0.07	< 0.02	0.75	0.75	11/10/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	10/10/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	17/10/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	10/10/23

continue

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## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)				
				2310-WW0202	2310-WW0203			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	243.95	0.39	-	5.0	16/10/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	16/10/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	1.0	1.0	11/10/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	11/10/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.02	< 0.05	2.0	1.0	11/10/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.83	< 0.05	-	5.0	11/10/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.22	0.09	5.0	5.0	11/10/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.75	0.16	1.0	1.0	11/10/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	11/10/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.12	< 0.04	5.0	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: Wastewater Surface Treatment Plant (WWTP1) Inlet = 47P 0671235 UTM 1561362  
Wastewater Surface Treatment Plant (WWTP1) Outlet = 47P 0671234 UTM 1561351

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ทรงชัย พรพรนศวัตต์, วิบูลย์ลักษณ์ วิศุทธิ์ศักดิ์

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)

(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)

(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

19/10/23



Approved by

Mrs. Pornpip Pethshee

Laboratory Manager

19/10/23



## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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  
**Sample Conditions** : 2310-WW0198 = white turbid/high white sediment/covered with oil slick/smell, Flow Rate = 2.5 m<sup>3</sup>/hr.  
2310-WW0199 = clear, Flow Rate = 2.5 m<sup>3</sup>/hr.

**Report Date** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				IR Wastewater Treatment Plant (WWTP2)				
				2310-WW0198	2310-WW0199			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.7	28.6	40	45	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	4.75	7.24	5.5-9.0	6.0-9.0	06/10/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	< 2.5	< 2.5	-	500	10/10/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	407	2,146	3,000	3,000	10-11/10/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	4,300	3	20	450	11-16/10/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	11,942	35	120	600	10/10/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	2.4	0.8	5	100	12/10/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	34.15	33.58	100	100	10/10/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	0.001	< 0.001	0.2	5.0	12/10/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	1.066	< 0.001	1.0	10	12/10/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	9.53	1,703.57	-	-	11/10/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	87.45	< 0.01	1.0	1.0	11/10/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	0.08	< 0.02	0.75	0.75	11/10/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	10/10/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	17/10/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	10/10/23

continue

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## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				IR Wastewater Treatment Plant (WWTP2)				
				2310-WW0198	2310-WW0199			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	1.63	< 0.20	-	5.0	16/10/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	16/10/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.46	< 0.05	1.0	1.0	11/10/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	11/10/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	2.0	1.0	11/10/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	43.20 *	< 0.05	-	5.0	11/10/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.26	0.08	5.0	5.0	11/10/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	2.52 *	0.12	1.0	1.0	11/10/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	11/10/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.08	< 0.04	5.0	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: IR Wastewater Treatment Plant (WWTP2) Inlet = 47P 0671247 UTM 1561369

IR Wastewater Treatment Plant (WWTP2) Outlet = 47P 0671248 UTM 1561355

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ขงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธิศักดิ์

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)

(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)

(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

19.10.23



Approved by

Mrs. Porntip Pethshee

Laboratory Manager

19.10.23

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## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
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**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

**Sample Conditions** : 2310-WW0200 = yellow turbid/high black sediment/covered with oil slick/smell, Flow Rate = 2.5 m<sup>3</sup>/hr.  
2310-WW0201 = clear, Flow Rate = 2.5 m<sup>3</sup>/hr.

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				PT Wastewater Treatment Plant				
				(WWTP3)				
				2310-WW0200	2310-WW0201			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	30.4	29.7	40	45	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	8.87	7.45	5.5-9.0	6.0-9.0	06/10/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	20.5	< 2.5	-	500	10/10/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	1,520	160	3,000	3,000	10-11/10/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	630	4	20	450	11-16/10/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	1,612	43	120	600	10/10/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	109.5	0.8	5	100	12/10/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	10.52	2.01	100	100	10/10/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	0.002	< 0.001	0.2	5.0	12/10/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	< 0.001	1.0	10	12/10/23
11	Sulfate *	mg/L	Turbidimetric (SM 4500-SO <sub>4</sub> <sup>2-</sup> E)	124.76	21.11	-		11/10/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	< 0.01	1.0	1.0	11/10/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	3.97	< 0.02	0.75	0.75	11/10/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	< 0.02	0.25	0.25	10/10/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	< 0.0005	0.005	0.01	17/10/23
16	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	< 0.0005	0.02	1.0	10/10/23

continue

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## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result		Standard		Analysis Date
				PT Wastewater Treatment Plant (WWTP3)				
				2310-WW0200	2310-WW0201			
				Inlet <sup>(3)</sup>	Outlet	(1)	(2)	
17	Al *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	5.47	< 0.20	-	5.0	16/10/23
18	Co *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	-	-	16/10/23
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	1.0	1.0	11/10/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	< 0.02	0.03	1.0	11/10/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	< 0.05	2.0	1.0	11/10/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	5.47 *	< 0.05	-	5.0	11/10/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.03	< 0.02	5.0	5.0	11/10/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.04	< 0.02	1.0	1.0	11/10/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	< 0.04	0.2	1.0	11/10/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.33	0.15	5.0	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: PT Wastewater Treatment Plant (WWTP3) Inlet = 47P 0671542 UTM 1561274

PT Wastewater Treatment Plant (WWTP3) Outlet = 47P 0671541 UTM 1561260

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิทยาลัยเกษตรและเทคโนโลยีสุพรรณบุรี

**Standard** (1) Notification of the Ministry of Industry (2017) (B.E. 2560)

(2) Standard of Central Wastewater Treatment Plant in Nava Nakorn Industrial Zone. (2016) (B.E. 2559)

(3) no established standard

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
19/10/23



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
19/10/23



## TEST REPORT

**Analysis No.** : R23-3199  
**Received Date** : 09/10/23  
**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  
**Sample Conditions** : 2310-WW0204 = yellow turbid/slight black sediment

**Report Date** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				2310-WW0204		
				Water Circulate		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.1	40	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.92	5.5-9.0	06/10/23
3	SS *	mg/L	Volumetric, Dried at 103-105 °C (SM 2540 F)	< 2.5	-	10/10/23
4	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	81	3,000	10-11/10/23
5	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	2	20	11-16/10/23
6	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	23	120	10/10/23
7	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.6	5	12/10/23
8	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	1.15	100	10/10/23
9	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	12/10/23
10	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	12/10/23
11	Sulfide *	mg/L	ZnS Precipitation, Methylene Blue Colorimetric Method (SM 4500-S <sup>2-</sup> D)	< 0.01	1.0	10/10/23
12	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	11/10/23
13	Free Chlorine *	mg/L	DPD Ferrous Titrimetric Method (SM 4500-Cl <sub>2</sub> F)	< 0.01	1.0	10/10/23
14	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) <sup>(2)</sup> ; Filtration, Colorimetric Method (SM 3500-Cr B); Calculation	< 0.02	0.75	11/10/23
15	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	10/10/23
16	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	17/10/23
17	As *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.25	16/10/23
18	Se *	mg/L				

continue

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## TEST REPORT

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**Received Date** : 09/10/23  
**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** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : TET  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(A)</sup>	Result	Standard	Analysis Date
				2310-WW0204		
				Water Circulate		
19	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	11/10/23
20	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	11/10/23
21	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	11/10/23
22	Fe	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.42	-	11/10/23
23	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	5.0	11/10/23
24	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	1.0	11/10/23
25	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	11/10/23
26	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.05	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"  
: Water Circulate = 47P 0671093 UTM 1561035  
**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017  
(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธศักดิ์  
**Standard** : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by   
Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
19/10/23



Approved by   
Mrs. Pomtip Pethshee  
Laboratory Manager  
19/10/23

..... END OF REPORT .....

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## TEST REPORT

**Analysis No.** : R23-3199/DIW

**Received Date** : 09/10/23

**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

**Sample Conditions** : 2310-WW0203 = clear

**Report Date** : 19/10/23

**Analysis Date** : 06-17/10/23

**Job No.** : S660326/Oct

**Sampling Date \*** : 06/10/23

**Sampling By \*** : Mr. Jirawad Intasay

**Registration No.** : จ-236-จ-0013

**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)		
				2310-WW0203		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	28.1	40	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.05	5.5-9.0	06/10/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	2,237	3,000	10-11/10/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	3	20	11-16/10/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	33	120	10/10/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.6	5	12/10/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	19.23	100	10/10/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	12/10/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	12/10/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	11/10/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	11/10/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	10/10/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	17/10/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.02	10/10/23

continue

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## TEST REPORT

Analysis No. : R23-3199/DIW

Received Date : 09/10/23

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 : 19/10/23

Analysis Date : 06-17/10/23

Job No. : S660326/Oct

Sampling Date \* : 06/10/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๖-236-๖-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				Wastewater Surface Treatment Plant (WWTP1)		
				2310-WW0203		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	11/10/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	11/10/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	11/10/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.09	5.0	11/10/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.16	1.0	11/10/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	11/10/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	5.0	11/10/23

Remarks \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: Wastewater Surface Treatment Plant (WWTP1) Outlet = 47P 0671234 UTM 1561351

Method (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ชงชัย พรานสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธิตักดี

Standard : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng

Chief of Laboratory

๖-236-๖-0002

19/10/23



Approved by

Mrs. Pomtip Pethshee

Laboratory Manager

๖-236-๖-0003

19/10/23

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## TEST REPORT

**Analysis No.** : R23-3199/DIW

**Received Date** : 09/10/23

**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

**Sample Conditions** : 2310-WW0199 = clear

**Report Date** : 19/10/23

**Analysis Date** : 06-17/10/23

**Job No.** : S660326/Oct

**Sampling Date \*** : 06/10/23

**Sampling By \*** : Mr. Jirawad Intasay

**Registration No.** : จ-236-จ-0013

**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				IR Wastewater Treatment Plant		
				(WWTP2)		
				2310-WW0199		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	28.6	40	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.24	5.5-9.0	06/10/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	2,146	3,000	10-11/10/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	3	20	11-16/10/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	35	120	10/10/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.8	5	12/10/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	33.58	100	10/10/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	12/10/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	12/10/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	11/10/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) <sup>(2)</sup> ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	11/10/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	10/10/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	17/10/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.02	10/10/23

continue

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด



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ต้นฉบับ

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

Page 4 of 8

## TEST REPORT

**Analysis No.** : R23-3199/DIW

**Report Date** : 19/10/23

**Received Date** : 09/10/23

**Analysis Date** : 06-17/10/23

**Customer** : Technical Division of Thai Environmental Technic Limited  
For Tostem Thai Co., Ltd./North Factory/EIA

**Job No.** : S660326/Oct

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

**Sampling Date \*** : 06/10/23

**Sampling By \*** : Mr. Jirawad Intasay

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

**Registration No.** : ๖-236-๖-0013

**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				IR Wastewater Treatment Plant		
				(WWTP2)		
				2310-WW0199		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	11/10/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	11/10/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	11/10/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.08	5.0	11/10/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.12	1.0	11/10/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	11/10/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: IR Wastewater Treatment Plant (WWTP2) Outlet = 47P 0671248 UTM 1561355

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิทยาลัยเทคนิค วิศวกรรมศาสตร์

**Standard** : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
๖-236-๖-0002  
19/10/23



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
๖-236-๖-0003  
19/10/23

- PRIVATE LABORATORY REGISTERED NO. ๖-236
- REPORTED RESULTS REFER TO SUBMITTED SAMPLE(S) ONLY
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## TEST REPORT

**Analysis No.** : R23-3199/DIW

**Received Date** : 09/10/23

**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

**Sample Conditions** : 2310-WW0201 = clear

**Report Date** : 19/10/23

**Analysis Date** : 06-17/10/23

**Job No.** : S660326/Oct

**Sampling Date \*** : 06/10/23

**Sampling By \*** : Mr. Jirawad Intasay

**Registration No.** : จ-236-จ-0013

**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				PT Wastewater Treatment Plant		
				(WWTP3)		
				2310-WW0201		
				Outlet		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.7	40	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.45	5.5-9.0	06/10/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	160	3,000	10-11/10/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	4	20	11-16/10/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	43	120	10/10/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.8	5	12/10/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	2.01	100	10/10/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	12/10/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	12/10/23
10	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	11/10/23
11	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	11/10/23
12	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	10/10/23
13	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	17/10/23
14	Se *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.02	10/10/23

continue

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Thai Environmental Technic Limited  
บริษัท เทคนิคสิ่งแวดล้อมไทย จำกัด



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## TEST REPORT

Analysis No. : R23-3199/DIW

Received Date : 09/10/23

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 : 19/10/23

Analysis Date : 06-17/10/23

Job No. : S660326/Oct

Sampling Date \* : 06/10/23

Sampling By \* : Mr. Jirawad Intasay

Registration No. : ๖-236-๖-0013

Type of Sample : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				PT Wastewater Treatment Plant		
				(WWTP3)		
				2310-WW0201		
				Outlet		
15	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	11/10/23
16	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	11/10/23
17	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	11/10/23
18	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	5.0	11/10/23
19	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	1.0	11/10/23
20	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	11/10/23
21	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.15	5.0	11/10/23

Remarks \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: PT Wastewater Treatment Plant (WWTP3) Outlet = 47P 0671541 UTM 1561260

Method (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ทรงชัย พรพรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุมศิริศักดิ์

Standard : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory

๖-236-๖-0002

19/10/23



Approved by

Mrs. Pomtip Pethshee  
Laboratory Manager

๖-236-๖-0003

19/10/23

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## TEST REPORT

**Analysis No.** : R23-3199/DIW  
**Received Date** : 09/10/23  
**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  
**Sample Conditions** : 2310-WW0204 = yellow turbid/slight black sediment

**Report Date** : 19/10/23  
**Analysis Date** : 06-17/10/23  
**Job No.** : S660326/Oct  
**Sampling Date \*** : 06/10/23  
**Sampling By \*** : Mr. Jirawad Intasay  
**Registration No.** : จ-236-จ-0013  
**Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				2310-WW0204		
				Water Circulate		
1	Temperature *	°C	Laboratory and Field, Methods (SM 2550B)	29.1	40	06/10/23
2	pH *	-	Electrometric Method (SM 4500 B)	7.92	5.5-9.0	06/10/23
3	TDS *	mg/L	Dried at 180 °C (SM 2540 C)	81	3,000	10-11/10/23
4	BOD *	mg/L	5-Days BOD Test, Azide Modification Method (SM 5210 B)	2	20	11-16/10/23
5	COD *	mg/L	Closed Reflux Titrimetric Method (SM 5220 C)	23	120	10/10/23
6	Oil & Grease *	mg/L	Liquid-Liquid, Partition Gravimetric Method (SM 5520 B)	0.6	5	12/10/23
7	TKN *	mg/L	Macro-Kjeldahl/Titrimetric Method (SM 4500-N <sub>org</sub> B&4500-NH <sub>3</sub> C)	1.15	100	10/10/23
8	Cyanide *	mg/L	Distillation, Colorimetric Method (SM 4500-CN <sup>-</sup> B/E)	< 0.001	0.2	12/10/23
9	Phenol *	mg/L	Distillation, Direct Photometric Method (SM 5530 D)	< 0.001	1.0	12/10/23
10	Sulfide *	mg/L	ZnS Precipitation, Methylene Blue Colorimetric Method (SM 4500-S <sup>2-</sup> D)	< 0.01	1.0	10/10/23
11	Formaldehyde *	mg/L	Distillation, Colorimetric Method <sup>(b)</sup>	< 0.01	1.0	11/10/23
12	Free Chlorine *	mg/L	DPD Ferrous Titrimetric Method (SM 4500-Cl <sub>2</sub> F)	< 0.01	1.0	10/10/23
13	Cr <sup>+3</sup> *	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B) <sup>[2]</sup> ; Filtration, Colorimetric Method (SM 3500-Cr B) ; Calculation	< 0.02	0.75	11/10/23
14	Cr <sup>+6</sup> *	mg/L	Filtration, Colorimetric Method (SM 3500-Cr B)	< 0.02	0.25	10/10/23
15	Hg *	mg/L	Cold-Vapor AAS Method (SM 3112 B)	< 0.0005	0.005	17/10/23
16	As *	mg/L	Digestion, Continuous Hydride generation/AAS Method (SM 3114C)	< 0.0005	0.25	16/10/23
17	Se *	mg/L				

continue

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Thai Environmental Technic Limited  
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## TEST REPORT

**Analysis No.** : R23-3199/DIW **Report Date** : 19/10/23  
**Received Date** : 09/10/23 **Analysis Date** : 06-17/10/23  
**Customer** : Technical Division of Thai Environmental Technic Limited  
For Tostem Thai Co., Ltd./North Factory/EIA **Job No.** : S660326/Oct  
**Address** : 101/104 Moo 20, Soi Navanakorn 1, Phaholyothin Road,  
Klongnueng, Klongluang, Pathumthani 12120 **Sampling Date \*** : 06/10/23  
**Contact** : Tel. (02) 529 0474 # 1965 Fax. (02) 529 4385 **Sampling By \*** : Mr. Jirawad Intasay  
**Registration No.** : ๖-236-๓-0013 **Type of Sample** : Wastewater

Item	Parameter	Unit	Method <sup>(a)</sup>	Result	Standard	Analysis Date
				2310-WW0204		
				Water Circulate		
18	Ba	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	1.0	11/10/23
19	Cd	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	0.03	11/10/23
20	Cu	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.05	2.0	11/10/23
21	Mn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	5.0	11/10/23
22	Ni	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.02	1.0	11/10/23
23	Pb	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	< 0.04	0.2	11/10/23
24	Zn	mg/L	Digestion, ICP-OES Method (SM 3030F and 3120B)	0.05	5.0	11/10/23

**Remarks** \* "Test marked "Not TISI Accredited" in this Report are not included in the TISI Accreditation Schedule for our Laboratory"

: Water Circulate = 47P 0671093 UTM 1561035

**Method** (a) SM = Standard Method for the Examination of Water and Wastewater, APHA, AWWA, WEF, 23<sup>rd</sup> Edition, 2017

(b) คู่มือวิเคราะห์น้ำเสีย พิมพ์ครั้งที่ 3 ธงชัย พรหมสวัสดิ์, วิบูลย์ลักษณ์ วิสุทธศักดิ์

**Standard** : Notification of the Ministry of Industry (2017) (B.E. 2560)

Reviewed by

Ms. Wareerut Prachumdaeng  
Chief of Laboratory  
๖-236-๓-0002  
19/10/23



Approved by

Mrs. Porntip Pethshee  
Laboratory Manager  
๖-236-๓-0003  
19/10/23

..... END OF REPORT .....

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