Name of Laboratory	: Chemlab Services (Thailand) Limited
Address	: 282 B3 Building, 2 <sup>nd</sup> -4 <sup>th</sup> Floor, Soi Soonvijai 4, Rama IX Road,
	Bangkapi, Huaykwang, Bangkok 10310
Accreditation Number	: Testing – 0064
Contact Person	: Ms. Pranee Kunavetchakit, Ms. Araya Kaewking
	Phone : 02-7196488-92 Ext. 102, 104
	Fax : -
	E-mail : dc@chemlabgroup.com
Initial Issue Date	: 27 <sup>th</sup> December 2010
Issue Date	: 7 <sup>th</sup> November 2022
Expired date	: 6 <sup>th</sup> November 2026
Standard	: ISO/IEC 17025:2017
Reference No.	: 0303/17003

Laboratory Name	: Chemlab Services (Thailand) Limited
-----------------	---------------------------------------

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Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064			
Laborato	ry Status : 🗖	Permanent 🗹 Site 🛛 Te	emporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
1	Workplace noise	- Sound level	In - house method : STP/04/066
		Equivalent sound level	based on ISO 1996-2 : 2017
		L <sub>eq,T</sub> 30 dB (A) to 120 dB (A)	
		Maximum sound level	
		L <sub>max</sub> 30 dB (A) to 120 dB (A)	
		- Time weighted average	In - house method : STP/04/007
		(TWA)	based on Ministerial Regulations
		Sound level	Specification of administration standard
		30 dB (A) to 120 dB (A)	and the process of safety, industrial hygiene
		Noise dose	and environmental workplace in respect
		40 dB (A) to 143 dB (A)	of heat light and sound BE2549 (2006)

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Bangkapi, Huaykwang, Bangkok 10310

Noise level

0 dB (A) to 30 dB (A)

Accreditation Number : Testing - 0064 : D Permanent ☑ Site Temporary □ Mobile Laboratory Status Item Test Material / Test Item / Test Method / Number Product Range of Testing Technique Used 2 - Sound level In - house method : STP/04/040 Environmental noise based on ISO 1996-2 : 2017 Equivalent sound level  $L_{eqT}$  30 dB (A) to 120 dB (A) Maximum sound level L<sub>max</sub> 30 dB (A) to 120 dB (A) In - house method : STP/04/041 - Noise level based on Notification of the Pollution Background noise level L<sub>90</sub> 30 dB (A) to 120 dB (A) Control Board, Method of measuring Non nuisance period noise level the background noise level, non  $L_{eq,T}$  30 dB (A) to 120 dB (A) nuisance period noise level, the Nuisance period noise level measuring and calculation of noise  $L_{eq,T}$  30 dB (A) to 120 dB (A) level from nuisance period, the

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calculation of nuisance level and

measurement, date August 31, 2007

record form of nuisance noise

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Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent $\Box$ Site $\Box$ Te	emporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
3	Wastewater	- Copper	In - house method : STP/01/059
		0.05 mg/L to 10 mg/L	based on Standard Methods for the
			Examination of Water and Wastewater,
			APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 3111 B, 3030 E
		- Iron	In - house method : STP/01/064
		0.15 mg/L to 10 mg/L	based on Standard Methods for the
			Examination of Water and Wastewater,
			APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 3111 B, 3030 E
		- Lead	In - house method : STP/01/060
		0.15 mg/L to 3.0 mg/L	based on Standard Methods for the
			Examination of Water and Wastewater,
			APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 3111 B, 3030 E

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	Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent 🛛 Site 🛛 Te	emporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
3	Wastewater	- Zinc	In - house method : STP/01/065
(cont.)		0.05 mg/L to 10 mg/L	based on Standard Methods for the
			Examination of Water and Wastewater,
			APHA, AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 3111 B, 3030 E
		- Total dissolved solids	Standard Methods for the Examination
		dried at 180 °C	of Water and Wastewater, APHA,
		65 mg/L to 3 000 mg/L	AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 2540 C
		- Total suspended solids	Standard Methods for the Examination
		dried at 103 °C to 105 °C	of Water and Wastewater, APHA,
		8 mg/L to 200 mg/L	AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 2540 D

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Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent 🛛 Site 🛛 Te	mporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
3	Wastewater	- Oil and grease	In - house method : STP/01/023
(cont.)		2.5 mg/L to 50 mg/L	based on Standard Methods for the
			Examination of Water and Wastewater,
			APHA, AWWA & WEF,23 <sup>rd</sup> ed., 2017,
			part 5520 B
4	Water	- Total dissolved solids	Standard Methods for the Examination
		dried at 180 °C	of Water and Wastewater, APHA,
		45 mg/L to 2 000 mg/L	AWWA & WEF, 23 <sup>rd</sup> ed., 2017,
			part 2540 C

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Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent 🗹 Site 🛛 Te	emporary 🛛 Mobile
ltem	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
5	Air		
	- Emission from	- Hydrogen chloride	In – house method : STP/04/069
	stationary sources	0.5 mg/m <sup>3</sup> to 20 mg/m <sup>3</sup>	based on United States Environmental
			Protection Agency, 2000, EPA Method 26
		- Chlorine	and 26A (Include sampling)
		0.5 mg/m <sup>3</sup> to 20 mg/m <sup>3</sup>	
		- Particulate matter (PM-2.5)	In – house method : STP/04/113
		100 µg/m <sup>3</sup> to 40 000 µg/m <sup>3</sup>	based on United States Environmental
			Protection Agency, 2017, EPA Method 201A,
		- Particulate matter (PM-10)	202 (Include sampling)
		100 µg/m <sup>3</sup> to 40 000 µg/m <sup>3</sup>	

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	Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent 🗹 Site 🛛 Te	mporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
5	Air		
(cont.)	- Emission from	- Total Suspended Particulate	In – house method : STP/04/070
	stationary sources	0.1 mg/m <sup>3</sup> to 400 mg/m <sup>3</sup>	based on United States Environmental
			Protection Agency, 2019, EPA Method 5
			(Include sampling)
	- Workplace air	- Copper	In - house method : STP/04/092
		0.007 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup>	based on Occupational Safety and
			Health Administration, OSHA, 2002,
			method ID 121 (Include sampling)
		- Iron	In - house method : STP/04/098
		0.007 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup>	based on Occupational Safety and
			Health Administration, OSHA, 2002,
			method ID 121 (Include sampling)

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	Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064

Laborato	ry Status : 🗹	Permanent 🗹 Site 🛛 Te	mporary 🛛 Mobile
Item	Test Material /	Test Item /	Test Method /
Number	Product	Range of Testing	Technique Used
5	Air		
(cont.)	- Workplace air	- Lead	In - house method : STP/04/093
		0.015 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup>	based on Occupational Safety and
			Health Administration, OSHA, 2002,
			method ID 121 (Include sampling)
		- Zinc	In - house method : STP/04/097
		0.008 mg/m <sup>3</sup> to 0.100 mg/m <sup>3</sup>	based on Occupational Safety and
			Health Administration, OSHA, 2002,
			method ID 121 (Include sampling)
		- Chromium	In - house method : STP/04/096
		0.008 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup>	based on Occupational Safety and
			Health Administration, OSHA, 2002,
			method ID 121 (Include sampling)

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- 3. - 1. - - 7. - - 3. - 3.

Accreditation Number : Testing - 0064

| Laborato | ry Status : 🗹   | Permanent 🗹 Site 🛛 Te                              | emporary 🛛 Mobile                  |
|----------|-----------------|--|------------------------------------|
| Item     | Test Material / | Test Item /  | Test Method /                      |
| Number   | Product         | Range of Testing                                   | Technique Used                     |
| 5        | Air             |  |                                    |
| (cont.)  | - Workplace air | - Manganese  | In - house method : STP/04/094     |
|          |                 | 0.006 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup> | based on Occupational Safety and   |
|          |                 |  | Health Administration, OSHA, 2002, |
|          |                 |  | method ID 121 (Include sampling)   |
|          |                 |  |                                    |
|          |                 | - Nickel   | In - house method : STP/04/095     |
|          |                 | 0.007 mg/m <sup>3</sup> to 0.300 mg/m <sup>3</sup> | based on Occupational Safety and   |
|          |                 |  | Health Administration, OSHA, 2002, |
|          |                 |  | method ID 121 (Include sampling)   |
|          |                 |  |                                    |
|          |                 | - Aluminium  | In - house method : STP/04/099     |
|          |                 | 0.15 mg/m <sup>3</sup> to 1.15 mg/m <sup>3</sup>   | based on Occupational Safety and   |
|          |                 |  | Health Administration, OSHA, 2002, |
|          |                 |  | method ID 121 (Include sampling)   |
|          |                 |  |                                    |
|          |                 |  |                                    |
|          |                 |  |                                    |

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Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064

| Laborato | ry Status : 🗹   | Permanent 🗹 Site 🛛 Te                            | mporary 🛛 Mobile                       |
|----------|-----------------|--|--|
| Item     | Test Material / | Test Item /                                      | Test Method /                          |
| Number   | Product         | Range of Testing                                 | Technique Used                         |
| 5        | Air             |  |  |
| (cont.)  | - Workplace air | - Nitric acid                                    | In - house method : STP/04/101         |
|          |                 | 0.19 mg/m <sup>3</sup> to 2.23 mg/m <sup>3</sup> | based on National Institute for        |
|          |                 |  | Occupational Safety and Health, NIOSH, |
|          |                 | - Hydrochloric acid                              | 4 <sup>th</sup> ed., 1994, method 7903 |
|          |                 | 0.10 mg/m <sup>3</sup> to 1.15 mg/m <sup>3</sup> | (Include sampling)                     |
|          |                 |  |  |
|          |                 | - Sulfuric acid                                  |  |
|          |                 | 0.11 mg/m <sup>3</sup> to 1.17 mg/m <sup>3</sup> |  |
|          |                 |  |  |
|          |                 | - Hydrofluoric acid                              | In - house method : STP/04/102         |
|          |                 | 0.05 mg/m <sup>3</sup> to 0.60 mg/m <sup>3</sup> | based on National Institute for        |
|          |                 |  | Occupational Safety and Health, NIOSH, |
|          |                 |  | 4 <sup>th</sup> ed., 1994, method 7903 |
|          |                 |  | (Include sampling)                     |
|          |                 |  |  |
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|          |                 |  |  |

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Bangkapi, Huaykwang, Bangkok 10310

Accreditation Number : Testing - 0064

| Laborato | ry Status : 🗹   | Permanent 🗹 Site 🛛 Te                            | emporary 🛛 Mobile                        |
|----------|-----------------|--|--|
| Item     | Test Material / | Test Item /                                      | Test Method /                            |
| Number   | Product         | Range of Testing                                 | Technique Used                           |
| 5        | Air             |  |  |
| (cont.)  | - Workplace air | - Particulate matter (PM-2.5)                    | In – house method : STP/04/115           |
|          |                 | 10 µg/m <sup>3</sup> to 40 000 µg/m <sup>3</sup> | based on United States Environmental     |
|          |                 |  | Protection Agency, 40 CFR, Method IP-10A |
|          |                 |  | (Include sampling)                       |
|          |                 |  |  |
|          |                 | - Respirable dust                                | In - house method : STP/04/002           |
|          |                 | 0.15 mg/m <sup>3</sup> to 490 mg/m <sup>3</sup>  | based on National Institute for          |
|          |                 |  | Occupational Safety and Health, NIOSH,   |
|          |                 |  | 4 <sup>th</sup> ed., 1998, method 0600   |
|          |                 |  | (Include sampling)                       |
|          |                 |  |  |
|          |                 | - Total dust                                     | In - house method : STP/04/001           |
|          |                 | 0.20 mg/m <sup>3</sup> to 830 mg/m <sup>3</sup>  | based on National Institute for          |
|          |                 |  | Occupational Safety and Health, NIOSH,   |
|          |                 |  | 4 <sup>th</sup> ed., 1994, method 0500   |
|          |                 |  | (Include sampling)                       |
|          |                 |  |  |

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Accreditation Number : Testing - 0064

| Laborato | ry Status : 🗹       | Permanent 🗹 Site 🛛 Te                           | mporary 🛛 Mobile                       |
|----------|---------------------|---|--|
| Item     | Test Material /     | Test Item /                                     | Test Method /                          |
| Number   | Product             | Range of Testing                                | Technique Used                         |
| 5        | Air                 |   |  |
| (cont.)  | - Environmental air | - Particulate matter (PM-2.5)                   | In – house method : STP/04/114         |
|          |                     | 5 μg/m <sup>3</sup> to 15 000 μg/m <sup>3</sup> | based on U.S. Environmental Protection |
|          |                     |   | Agency 40 CFR, method 50, Appendix L   |
|          |                     |   | (Include sampling)                     |
|          |                     |   |  |
|          |                     | - Particulate matter (PM-10)                    | In – house method : STP/04/114         |
|          |                     | 5 μg/m <sup>3</sup> to 15 000 μg/m <sup>3</sup> | based on U.S. Environmental Protection |
|          |                     |   | Agency 40 CFR, method 53               |
|          |                     |   | (Include sampling)                     |
|          |                     |   |  |
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|-----------------|---|--|
| Address         | : 282 B3 Building, 2 <sup>nd</sup> -4 <sup>th</sup> Floor, Soi Soonvijai 4, Rama IX Road, |  |
|                 | Bangkapi, Huaykwang, Bangkok 10310  |  |

Accreditation Number : Testing - 0064

| Laboratory Status : 🗹 Permanent 🗆 Site 🗖 Temporary 🗖 Mobile |                 |                              |   |  |  |
|---|-----------------|------------------------------|---|--|--|
| Item  | Test Material / | Test Item /                  | Test Method /                             |  |  |
| Number  | Product         | Range of Testing             | Technique Used                            |  |  |
| 6   | Feed            | - Moisture                   | ISO 6496 : 1999                           |  |  |
|   |                 | 1.1 g/100 g to 76.6 g/100 g  |   |  |  |
|   |                 |                              |   |  |  |
|   |                 | - Protein                    | In – house method : STP/02/080            |  |  |
|   |                 | 0.80 g/100 g to 59.3 g/100 g | based on AOAC Official Methods of         |  |  |
|   |                 |                              | Analysis, 21 <sup>st</sup> ed., 2019,     |  |  |
|   |                 |                              | method 2001.11                            |  |  |
|   |                 |                              |   |  |  |
|   |                 | - Fat                        | AOAC Official Methods of Analysis,        |  |  |
|   |                 | 1.60 g/100 g to 13.4 g/100 g | 21 <sup>st</sup> ed., 2019, method 954.02 |  |  |
|   |                 |                              |   |  |  |
|   |                 | - Crude fiber                | AOAC Official Methods of Analysis,        |  |  |
|   |                 | 1.80 g/100 g to 7.50 g/100 g | 21 <sup>st</sup> ed., 2019, method 978.10 |  |  |
|   |                 |                              |   |  |  |
|   |                 | - Ash                        | AOAC Official Methods of Analysis,        |  |  |
|   |                 | 1.40 g/100 g to 6.40 g/100 g | 21 <sup>st</sup> ed., 2019, method 942.05 |  |  |
|   |                 |                              |   |  |  |
|   |                 |                              |   |  |  |

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| Laborator             | ry Name                               | : Chemlab Services (Thailand) Limited |  |   |  |  |  |
|-----------------------|---------------------------------------|---------------------------------------|--|---|--|--|--|
| Address               |                                       | : 282                                 | B3 Building, 2 <sup>nd</sup> -4 <sup>th</sup> Floor, Soi Soonvij | ai 4, Rama IX Road,                                 |  |  |  |
|                       |                                       | Bang                                  | gkapi, Huaykwang, Bangkok 10310                                  |   |  |  |  |
| Accredita             | Accreditation Number : Testing - 0064 |                                       |  |   |  |  |  |
| Laboratory Status : 🗹 |                                       | : 🗹                                   | Permanent 🛛 Site 🔲 Temporary 🗖 Mobile                            |   |  |  |  |
| ltem                  | Test Materia                          | ι/                                    | Test Item /  | Test Method /                                       |  |  |  |
| Number                | Product                               |                                       | Range of Testing   | Technique Used                                      |  |  |  |
| 6                     | Feed                                  |                                       | - Total aflatoxin  | In - house method : STP/02/067                      |  |  |  |
| (cont.)               |                                       |                                       | 1.0 µg/kg to 25 µg/kg  | based on AOAC Official Methods of                   |  |  |  |
|                       |                                       |                                       |  | Analysis, 21 <sup>st</sup> ed., 2019, method 991.31 |  |  |  |
|                       |                                       |                                       |  | and 994.08  |  |  |  |
|                       |                                       |                                       |  |   |  |  |  |
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|                       |                                       |                                       |  |   |  |  |  |

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