

No. CTSPN/00307/19 Date: 03/10/2019

CTS Ref. CTSPN/19/0060/Premium

PREMIUM MULTI INDUSTRIES SDN BHD 15-1-16, MEDAN KAMPUNG RELAU, BAYAN POINT, 11900 PENANG

The following merchandise was (were) submitted and identified by the client as:

Sample Description : Himax Cleaner K-11

Sample Receiving Date : 27/09/2019

Testing Period : 27/09/2019 to 03/10/2019

Test Requested : Selected test(s) as requested by client

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Analysts : Tan Lin Wei & Hooi Yee Man

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CHONG KIEN LEN B.Sc.(HONS) AMIC SENIOR LAB MANAGER

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Test results:

Test Part Description:

Sample Description : Himax Cleaner K-11

RoHS Directive 2011/65/EU Annex II

Test Item(s):	Unit	Test Method	Results	MDL
Cadmium(Cd)	mg/kg	With reference to EPA Method 3052, and performed by ICP-OES	N.D.	2
Lead (Pb)	mg/kg	With reference to EPA Method 3050B, and performed by ICP-OES	N.D.	2
Mercury (Hg)	mg/kg	With reference to EPA Method 3052, and performed by ICP-OES	N.D.	2
Hexavalent Chromium (CrVI)	mg/kg	With reference to EPA Method 3060A & 7196A, and performed by UV-VIS Spectrophotometry	N.D.	2
Sum of PBBs	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	-
Monobromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Dibromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Tribromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Tetrabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Hexabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Pentabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Heptabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Octabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Nonabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Decabromobiphenyl	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5

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Sum of PBDEs	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	-
Monobromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Dibromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Tribromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Tetrabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Pentabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Hexabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Heptabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Octabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Nonabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5
Decabromodiphenyl ether	mg/kg	With reference to EPA Method 3540C/3550C, and performed by GC-MS	N.D.	5

Note : (a) mg/kg = ppm; (0.1wt% = 1000ppm)

(b) N.D. = Not Detected

(c) MDL = Method Detection Limit

(d) - = Not regulated

(e) Testing based on original basis

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<u>Test Part Description</u>:

Sample Description : Himax Cleaner K-11

PREMIUM MULTI INDUSTRIES SDN BHD CTSPN/00307/19



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1. <u>DETERMINATION OF HEXAVALENT CHROMIUM BY</u> METHOD US EPA 3060A/7196A

Sample Preparation

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Add colour-developing reagent

↓

Acidify with H₂SO₄

↓

Let stand for 5-10 min

↓

Let stand for 5-10 min

Analyses by UV- Spectrophotometer (540 nm)

2. <u>DETERMINATION OF LEAD CONTENT BY US</u> <u>EPA 3050B</u>

Sample Preparation

Weight sample (1.0g) into digestion vessel

Acid digestion (HCl and HNO₃)

"Totally Dissolved"

Filtration

Analyses by ICP

3. MICROWAVE ASSISTED ACID DIGESTION OF SILICEOUS AND ORGANICALLY BASED METRICES (US EPA 3052)

(US EPA 3052)

Sample Preparation

↓

Weight sample (0.2-0.5g) into digestion vessel

↓

Acid digestion (HF and HNO₃) – Microwave

↓

"Totally Dissolved"

↓

Filtration

↓

Analyses by ICP

4. DETERMINATION OF PBB/PBDE WITH GC-MS

Sample Preparation

Weight sample (0.5-4g) into extraction thimble

Ultrasonic / Soxhlet Extraction with Toluene

Filter through 0.45 um membrane filter

Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

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