# Test Report



NEOGRAF SOLUTIONS, LLC

11709 MADISON AVE.
LAKEWOOD, OHIO 44107

The following sample(s) was/were submitted and identified on behalf of the clients as : MEK BLACK INK MARK PACK # JP-K67

| | |
|---|---|
| SGS Job No. : | 4809598 - HK |
| Date of Sample Received : | 24 Aug 2021 |
| Testing Period : | 24 Aug 2021 - 06 Sep 2021 |
| 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). |
| Conclusion : | Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.<br><br>When tested as specified, the Phthalate content of the submitted sample(s) do not exceed the limit as set by the test requirement with reference to US California Proposition 65<br><br>Based on the performed tests on submitted sample(s), the test results do not exceed the limit as set by European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives. |

Signed for and on behalf of
SGS Hong Kong Limited.

Lam Ka Yung, Allen
Chemist

Test Results :

Test Part Description :

| Specimen No. | SGS Sample ID | Description |
|---|---|---|
| 1 | HKT21-042330.015 | Black liquid |

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected ( < MDL )
(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

| Test Item(s) | Limit | Unit | MDL | *015* |
|---|---|---|---|---|
| Cadmium (Cd) | 100 | mg/kg | 2 | ND |
| Lead (Pb) | 1,000 | mg/kg | 2 | ND |
| Mercury (Hg) | 1,000 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI)) | 1,000 | mg/kg | 8 | ND |
| Sum of PBBs | 1,000 | mg/kg | - | ND |
| Monobromobiphenyl | - | mg/kg | 5 | ND |
| Dibromobiphenyl | - | mg/kg | 5 | ND |
| Tribromobiphenyl | - | mg/kg | 5 | ND |
| Tetrabromobiphenyl | - | mg/kg | 5 | ND |
| Pentabromobiphenyl | - | mg/kg | 5 | ND |
| Hexabromobiphenyl | - | mg/kg | 5 | ND |
| Heptabromobiphenyl | - | mg/kg | 5 | ND |
| Octabromobiphenyl | - | mg/kg | 5 | ND |
| Nonabromobiphenyl | - | mg/kg | 5 | ND |
| Decabromobiphenyl | - | mg/kg | 5 | ND |
| Sum of PBDEs | 1,000 | mg/kg | - | ND |
| Monobromodiphenyl ether | - | mg/kg | 5 | ND |
| Dibromodiphenyl ether | - | mg/kg | 5 | ND |
| Tribromodiphenyl ether | - | mg/kg | 5 | ND |
| Tetrabromodiphenyl ether | - | mg/kg | 5 | ND |
| Pentabromodiphenyl ether | - | mg/kg | 5 | ND |

| Test Item(s) | Limit | Unit | MDL | *015* |
|---|---|---|---|---|
| Hexabromodiphenyl ether | - | mg/kg | 5 | ND |
| Heptabromodiphenyl ether | - | mg/kg | 5 | ND |
| Octabromodiphenyl ether | - | mg/kg | 5 | ND |
| Nonabromodiphenyl ether | - | mg/kg | 5 | ND |
| Decabromodiphenyl ether | - | mg/kg | 5 | ND |
| Dibutyl Phthalate (DBP) | 1,000 | mg/kg | 50 | ND |
| Benzylbutyl Phthalate (BBP) | 1,000 | mg/kg | 50 | ND |
| Bis-(2-ethylhexyl) Phthalate (DEHP) | 1,000 | mg/kg | 50 | ND |
| Diisobutyl Phthalate (DIBP) | 1,000 | mg/kg | 50 | ND |

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

**Halogen**

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

| Test Item(s) | Limit | Unit | MDL | *015* |
|---|---|---|---|---|
| Fluorine (F) | - | mg/kg | 50 | ND |
| Chlorine (Cl) | - | mg/kg | 50 | ND |
| Bromine (Br) | - | mg/kg | 50 | ND |
| Iodine (I) | - | mg/kg | 50 | ND |

Notes :

(1) The measurement report of the expanded uncertainty with confident level 95% by coverage factor k=2, is 20% for each analyte of Fluorine, Chlorine, Bromine and Iodine.

**Element(s)**

Test Method : With reference to US EPA Method 3052:1996. Analysis was performed by ICP-OES.

| Test Item(s) | Limit | Unit | MDL | *015* |
|---|---|---|---|---|
| Beryllium (Be) | - | mg/kg | 5 | ND |
| Antimony (Sb) | - | mg/kg | 10 | ND |

Notes :

(1) The measurement report of the expanded uncertainty with confident level 95% by coverage factor k=2, is 20% for each analyte of Antimony and Beryllium.

## US California Proposition 65 - Phthalate Content

Test Method : With reference to CPSC-CH-C1001-09.3, Analysis was performed by GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

| Test Item(s) | CAS NO | Limit | Unit | MDL | *015* |
|---|---|---|---|---|---|
| Dibutyl Phthalate (DBP) | 84-74-2 | 0.1 | % (w/w) | 0.005 | ND |
| Benzylbutyl Phthalate (BBP) | 85-68-7 | 0.1 | % (w/w) | 0.005 | ND |
| Bis(2-ethylhexyl) Phthalate (DEHP) | 117-81-7 | 0.1 | % (w/w) | 0.005 | ND |
| Diisodecyl Phthalate (DIDP) | 26761-40-0/ 68515-49-1 | 0.1 | % (w/w) | 0.005 | ND |
| Diisononyl Phthalate (DINP) | 28553-12-0/ 68515-48-0 | 0.1 | % (w/w) | 0.005 | ND |
| Di-n-hexyl Phthalate (DnHP) | 84-75-3 | 0.1 | % (w/w) | 0.005 | ND |
| **Comment** | | | | | **PASS** |

Notes :

The limit is referenced to the requirement as stated in County of Santa Clara Case No. 114CV267501.

## European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

| Test Item(s) | CAS NO | Limit | Unit | MDL | 015 |
|---|---|---|---|---|---|
| Perfluorooctanoic acid (PFOA) and its salts+ | -- | 0.025 | mg/kg | 0.010 | ND |
| PFOA-related substances | -- | 1 | mg/kg | - | ND |
| 1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTS) | 39108-34-4 | - | mg/kg | 1 | ND |
| Methyl perfluorooctanoate (Me-PFOA) | 376-27-2 | - | mg/kg | 1 | ND |
| Ethyl perfluorooctanoate (Et-PFOA) | 3108-24-5 | - | mg/kg | 1 | ND |
| 1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH ) | 678-39-7 | - | mg/kg | 1 | ND |

| Test Item(s) | CAS_NO | Limit | Unit | MDL | 015 |
|---|---|---|---|---|---|
| 1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) | 27905-45-9 | - | mg/kg | 1 | ND |
| 1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) | 1996-88-9 | - | mg/kg | 1 | ND |
| Perfluoro-1-iodooctane (PFOI) | 507-63-1 | - | mg/kg | 1 | ND |
| Perfluorooctane sulfonates (PFOS) and its derivatives | -- | 10 | mg/kg | - | ND |
| Perfluorooctane sulfonates (PFOS)^ | 1763-23-1 | - | mg/kg | 1 | ND |
| N-ethylperfluoro-1-octanesulfonamide (EtFOSA) | 4151-50-2 | - | mg/kg | 1 | ND |
| N-methylperfluoro-1-octanesulfonamide (MeFOSA) | 31506-32-8 | - | mg/kg | 1 | ND |
| 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE) | 1691-99-2 | - | mg/kg | 1 | ND |
| 2-(N-methylperfluoro-1-octanesulfonamido) -ethanol (MeFOSE) | 24448-09-7 | - | mg/kg | 1 | ND |
| Perfluorooctane sulfonamide (PFOSA) | 754-91-6 | - | mg/kg | 1 | ND |
| **Conclusion** | | | | | **PASS** |

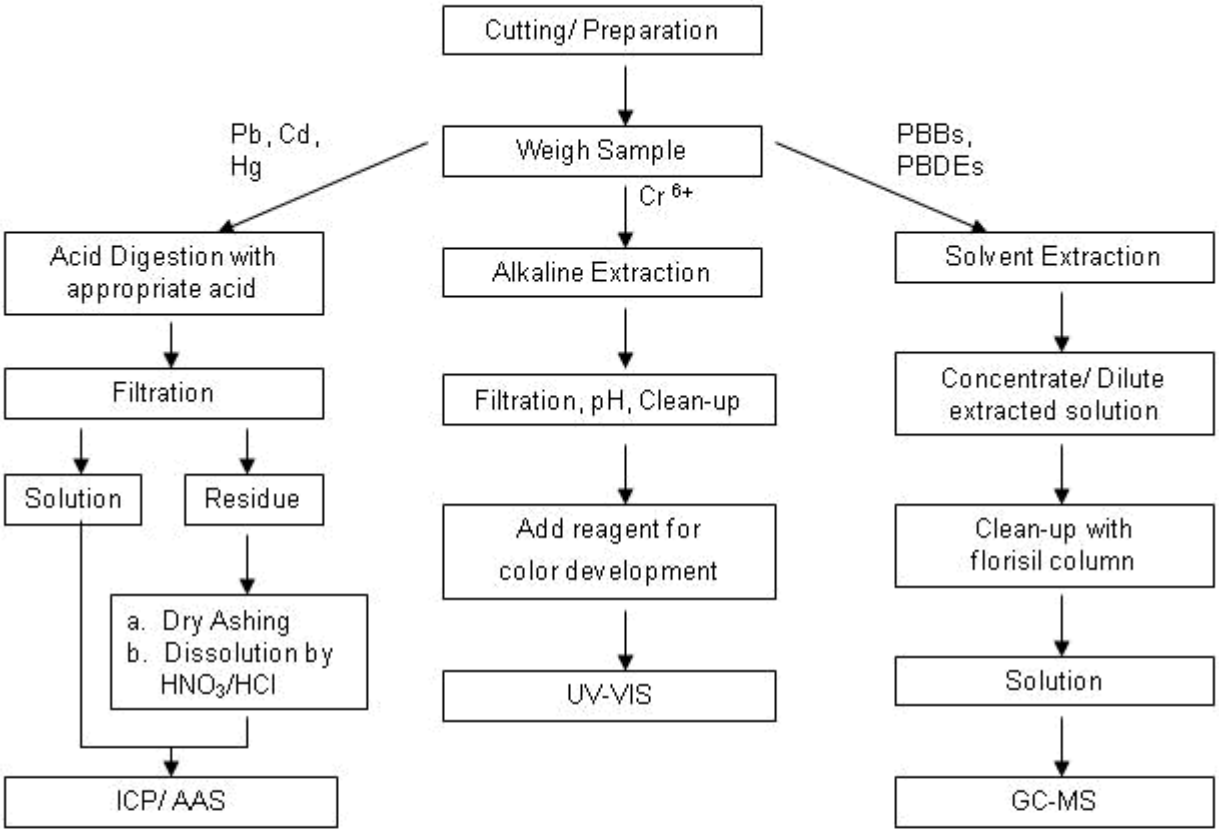
Notes :

(1) + PFOA refer to its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1);
(2) ^ PFOS refer to its derivatives including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH4 (CAS No.: 29081-56-9), PFOS-NH(OH)2 (CAS No.: 70225-14-8), PFOS-N(C2H5)4 (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)

# Appendix 1

| Category | Decision Rule Statement |
|---|---|
| 1 | The decision rule for conformity reporting is based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, w = U95) in ILAC-G8:09/2019 Clause 4.2.3.<br>A. "Pass - the measured value is within (or below / above) the acceptance limit, where the acceptance limit is below / above to the guard band." or "Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%.".<br>B. "Conditional Pass - The measured values were observed in tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded / out of tolerance. When the measured result is close to the tolerance, the specific false accept risk is up to 50%.".<br>C. "Conditional Fail - One or more measured values were observed out of tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in tolerance. When the measured result is close to the tolerance, the specific false reject risk is up to 50%.".<br>D. "Fail - the measured value is out of (or below / above) the tolerance limit added / subtracted to the guard band." or "Fail - One or more measured values were observed out of tolerance at the points tested". The specific false reject risk is up to 2.5%. |
| 2 | The decision rule for conformity reporting is based on BS EN 1811:2011+A1:2015: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin in Section 9.2 interpretation of results. |
| 3 | The decision rule for conformity reporting is based on the general consideration of simple acceptance as stated in ISO/IEC Guide 98-3: "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM 1995)", and more specifically for analytical measurements to the EURACHEM/CITAC Guide 2012 "Quantifying Uncertainty in Analytical Measurement ". |
| 4 | The decision rule for conformity reporting is according to the IEC 62321-7-1 Edition 1.0 2015-09 Section 7: Table 1-(comparison to standard and interpretation of result) |
| 5 | The decision rule for conformity reporting is according to the IEC 62321-3-1 Edition 1.0 2013-06 Annex A.3 interpretation of result. |
| 6 | The decision rule for conformity reporting is according to the GB/T 26125-2011 Annex A to H |
| 7 | The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-17 section 4.3.5) |
| 8 | The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2) |
| Remark | If the decision rule is not feasible to be used and the uncertainty of the result is able to be provided, the uncertainty range of the result will be shown in the report. Otherwise, only result will be shown in the report. |

**Flowchart:**




Note : 1) Boiling water test method was also performed for the analysis of Cr (VI) in metal sample.

2) The polymeric samples were dissolved totally by pre-conditioning method according to above flow chat for Cd, Pb and Hg contents analysis.

Operator : Chiu Kan Yuen/ Tang Koon Pang (Acid digestion)

Chiu Kan Yuen (Dry Ashing)

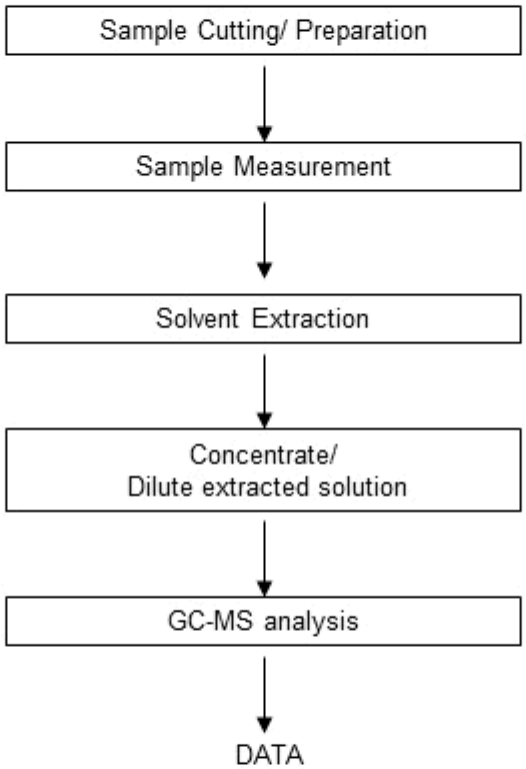
Nick Liu (Hexavalent Chromium)

Kent Wan (PBBs and PBDEs)

Section Chief : Chan Chun Kit, Dickson

**Flowchart for Phthalates measurement**

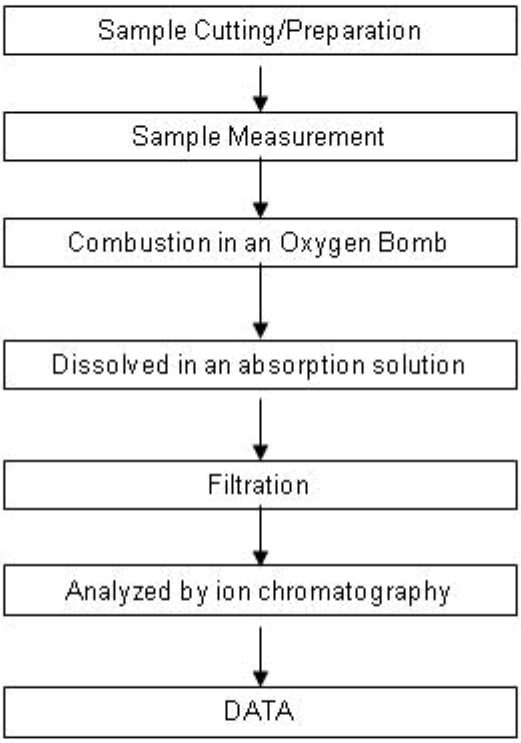
Method: IEC 62321-8:2017




Tested by : Lumpy Lee
Checked by : Edmund Kwan

**Flowchart for Halogen Free Test**

Method: BS EN14582:2016

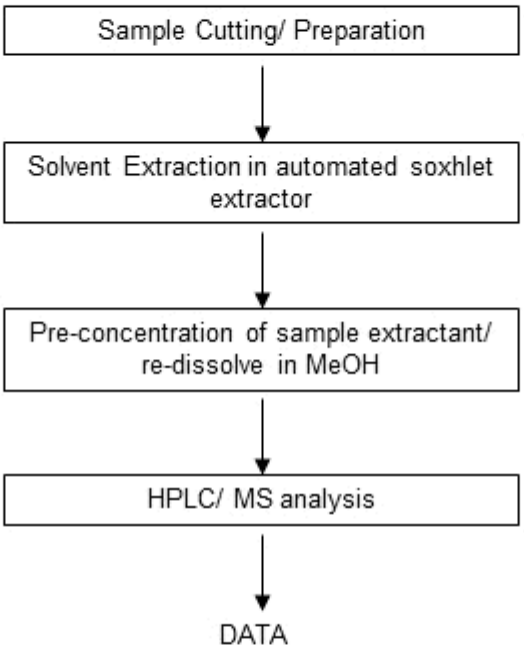



Operator: Tang Ying Sam

Supervisor: Chan Chun Kit (Dickson)

**Flowchart for PFOS/ PFOA measurement**

Method: CEN/TS15968:2010

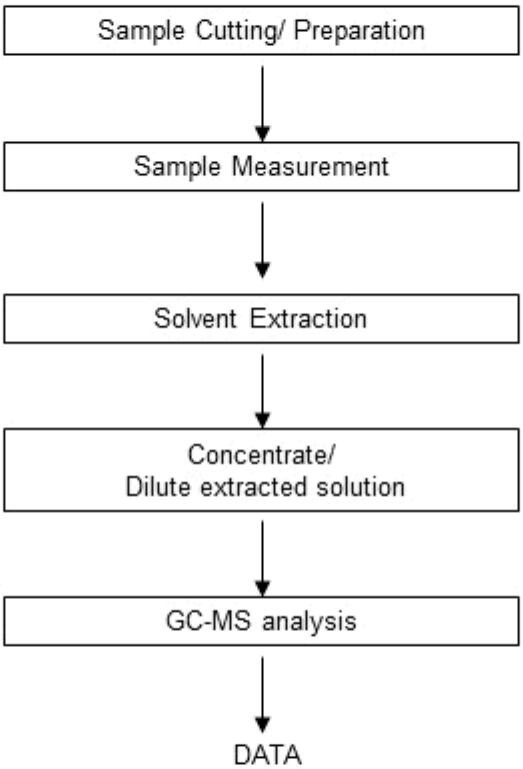



Operator : Candy Luk

Chief Supervisor : Yu Ka Lai

**Flowchart for Phthalates measurement**

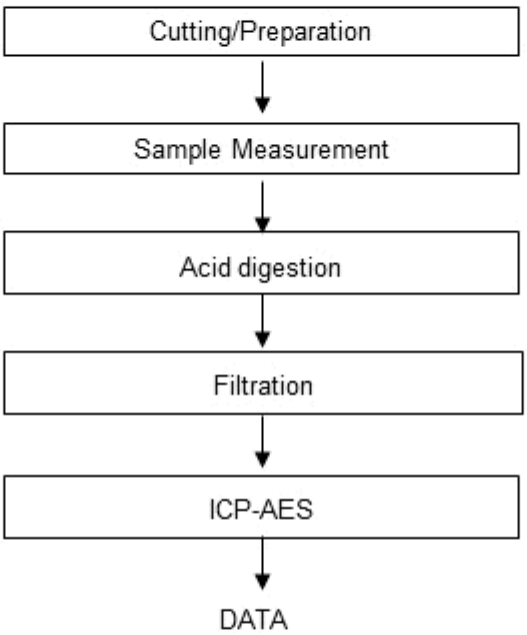
Method: CPSC-CH-C1001-09.3




Tested by : Lumpy Lee
Checked by : Edmund Kwan

## Flowchart of Digestion for Element Measurement

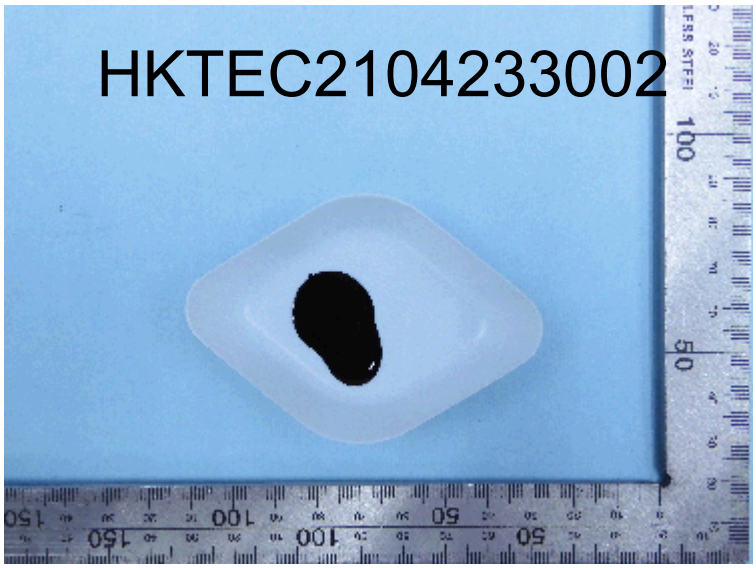
Method: EPA Method 3051A/3052




Operator : Chiu Kan Yuen

Section Chief : Chan Chun Kit (Dickson)

Sample photo:




HKT21-042330.015

SGS authenticate the photo on original report only

*** End of Report ***