

Test Report

No.: SHAPH24013272201

Date: Jul 25, 2024

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Client Name: JIANGSU XINSHUN MICROELECTRONICS CO.,LTD

Client Address: NO.78 CHANGSHAN RD.,JIANGYIN CITY,JIANGSU PRO.,CHINA

Sample Name: VDMOS

The above sample(s) and information were provided by the client.

SGS Job No.: SHIN2406004632PL01

Sample Receiving Date: Jun 18, 2024

Testing Period: Jun 18, 2024 ~ Jun 26, 2024

Test Requested: Select test(s) as requested by the client.

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

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

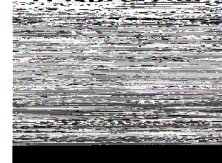
| Test Requirement | Conclusion |
|---|-------------|
| EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) | Pass |
| Element(s) | See Results |
| Halogen | See Results |
| Red Phosphorus | See Results |
| European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 Annex I - Perfluorooctanoic acid (PFOA) and its salts, PFOA-Related Substances, Perfluorooctane sulfonic acid (PFOS) and its derivatives | Pass |
| Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under US EPA Toxic Substances Control Act (TSCA) Section 6(h) | Pass |
| AfPS GS 2019:01 PAK-Polycyclic Aromatic Hydrocarbons (PAHs) | Pass |

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Mei Shen
Approved Signatory

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Test Result(s):

Test Part Description

| SN ID | Sample No. | SGS Sample ID | Description |
|-------|------------|-------------------------|---------------------|
| SN1 | 001 | SHA24-0132722-0001.C001 | Color silicon wafer |

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

| Test Item(s) | Limit | Unit(s) | MDL | 001 |
|------------------------------------|-------|---------|-----|-----|
| Lead (Pb) | 1000 | mg/kg | 2 | ND |
| Mercury (Hg) | 1000 | mg/kg | 2 | ND |
| Cadmium (Cd) | 100 | mg/kg | 2 | ND |
| Hexavalent Chromium (Cr(VI)) | 1000 | mg/kg | 8 | ND |
| Polybromobiphenyl (PBB) | 1000 | mg/kg | - | ND |
| Monobrominated biphenyl (MonoBB) | - | mg/kg | 5 | ND |
| Dibrominated biphenyl (DiBB) | - | mg/kg | 5 | ND |
| Tribrominated biphenyl (TriBB) | - | mg/kg | 5 | ND |
| Tetrabrominated biphenyl (TetraBB) | - | mg/kg | 5 | ND |
| Pentabrominated biphenyl (PentaBB) | - | mg/kg | 5 | ND |

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| Test Item(s) | Limit | Unit(s) | MDL | 001 |
|---|-------|---------|-----|-----|
| Octabrominated diphenyl ether (OctaBDE) | - | mg/kg | 5 | ND |
| Nonabrominated diphenyl ether (NonaBDE) | - | mg/kg | 5 | ND |
| Decabrominated diphenyl ether (DecaBDE) | - | mg/kg | 5 | ND |
| Bis(2-ethylhexyl) phthalate (DEHP) | 1000 | mg/kg | 50 | ND |
| Butyl benzyl phthalate (BBP) | 1000 | mg/kg | | |

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Test Method: Modified CEN/TS 15968:2010, analysis was performed by LC-MS or LC-MS/MS and GC-MS.

| Test Item(s) | CAS No. | Limit | Unit(s) | MDL | 001 |
|---|------------|-------|---------|-------|-----|
| PFOS, its salts and related compounds | | | | | |
| Perfluorooctane sulfonic acid (PFOS), its salts^ | 1763-23-1 | - | mg/kg | 0.010 | ND |
| N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA) | 4151-50-2 | - | mg/kg | 0.010 | ND |
| N-methylperfluoro-1-octanesulfonamide (N-MeFOSA) | 31506-32-8 | - | mg/kg | 0.010 | ND |
| 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (N-EtFOSE) | 1691-99-2 | - | mg/kg | 0.010 | ND |
| 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (N-MeFOSE) | 24448-09-7 | - | mg/kg | 0.010 | ND |
| Perfluorooctane sulfonamide (PFOSA), its salts^ | 754-91-6 | - | mg/kg | 0.010 | ND |
| Sum of Perfluorooctane sulfonic acid (PFOS) and its derivatives | - | 10 | mg/kg | - | ND |
| PFOA, its salts | | | | | |
| Perfluorooctanoic acid (PFOA), its salts^ | 335-67-1 | 0.025 | mg/kg | 0.010 | ND |
| PFOA-related compounds | | | | | |
| 1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS), its salts^ | 39108-34-4 | - | mg/kg | 0.010 | ND |
| Methyl perfluorooctanoate (Me-PFOA) | 376-27-2 | - | mg/kg | 0.100 | ND |
| Ethyl perfluorooctanoate (Et-PFOA) | 3108-24-5 | - | mg/kg | 0.100 | ND |
| 1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) | 27905-45-9 | - | mg/kg | 0.100 | ND |
| 1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) | 1996-88-9 | - | mg/kg | 0.100 | ND |
| Perfluoro-1-iodooctane (PFOI).04 reW* nB | | | | | |

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| Test Item(s) | CAS No. | Limit | Unit(s) | MDL | 001 |
|-------------------|---------|-------|---------|-----|-------------|
| Conclusion | | | | | Pass |

Notes:

1. ^=Substances refer to its salts/derivative listed in below table.

| Substance Name | CAS No. |
|--|-------------|
| PFOS, its salts & derivatives | |
| Perfluorooctane sulfonic acid (PFOS) | 1763-23-1 |
| Potassium Perfluorooctanesulfonate (PFOS-K) | 2795-39-3 |
| Perfluorooctanesulfonic acid, lithium salt (PFOS-Li) | 29457-72-5 |
| Sodium perfluorooctanesulfonate (PFOS-Na) | 4021-47-0 |
| Ammonium perfluorooctanesulfonate (PFOS-NH ₄) | 29081-56-9 |
| Perfluorooctane sulfonate diethanolamine salt (PFOS-NH ₂ (C ₂ H ₄ OH) ₂) | 70225-14-8 |
| Perfluorooctanesulfonic acid,tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄) | 56773-42-3 |
| N-decyl-N,N-dimethyldecyl-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-N(C ₁₀ H ₂₁) ₂ (CH ₃) ₂) | 251099-16-8 |
| TetrabutylAmmonium perfluorooctanesulfonate (PFOS-N(C ₄ H ₉) ₄) | 111873-33-7 |
| Perfluorooctane Sulfonyl fluoride (PFOS-F) | 307-35-7 |
| Magnesium bis(heptadecafluorooctanesulphonate) (PFOS-Mg) | 91036-71-4 |
| Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate | 71463-74-6 |
| PFOSA, its salts | |
| Perfluorooctane Sulfonamide (PFOSA) | 754-91-6 |
| Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li) | 76752-79-9 |
| Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na) | 76752-78-8 |
| Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K) | 76752-70-0 |
| Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH ₄) | 76752-72-2 |
| PFOA, its salts & derivatives | |
| Perfluorooctanoic acid (PFOA) | 335-67-1 |
| Sodium perfluorooctanoate (PFOA-Na) | 335-95-5 |

Potassium perfluorooctanoate (PFOA-K) 43pU44950285A3o8S3)ai8E0i13&E

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| H₂PFDA/8:2 FTCA, its salts | |
|---|-------------|
| 2H,2H-Perfluorodecane Acid (H ₂ PFDA/8:2 FTCA) | 27854-31-5 |
| Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (8:2 FTCA-P(C ₄ H ₉) ₄) | 882489-14-7 |
| 8:2diPAP, its salts | |
| Bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl)hydrogen phosphate (8:2diPAP) | 678-41-1 |
| Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na) | 114519-85-6 |
| H₄PFUnDA/ 8:3 FTCA, its salts | |
| 2H,2H,3H,3H-Perfluoroundecanoic acid (H ₄ PFUnDA/ 8:3 FTCA) | 34598-33-9 |
| Potassium 2H,2H,3H,3H-Perfluoroundecanoate (H ₄ PFUnDA-K) | 83310-58-1 |

Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under US EPA Toxic Substances Control Act (TSCA) Section 6(h)

Test Method: With reference to US EPA 3550C:2007, analysis was performed by GC-MS.

| Test Item(s) | CAS No. | Limit | Unit(s) |
|--------------|---------|-------|---------|
|--------------|---------|-------|---------|



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| Test Item(s) | CAS No. | |
|--------------|---------|--|
|--------------|---------|--|



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| | | | | | |
|---|---------|---------|----------|----------|----------|
| Benzo(e)pyrene (BeP) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Benzo(a)anthracene (BaA) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Benzo(b)fluoranthene (BbF) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Benzo(j)fluoranthene (BjF) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Benzo(k)fluoranthene (BkF)mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Chrysene (CHR) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Dibenzo(a,h)anthracene (DBA) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Benzo(g,h,i)perylene (BPE) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Indeno(1,2,3-cd)pyrene (IPY) mg/kg | < 0.2 | < 0.2 | < 0.5 | < 0.5 | < 1 |
| Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg | < 1 Sum | < 5 Sum | < 10 Sum | < 20 Sum | < 50 Sum |
| Naphthalene (NAP) mg/kg | < 1 | < 2 | < 10 | < 20 | < 50 |
| Sum of 15 PAHs | <1 | < 5 | < 10 | < 20 | < 50 |

Notes:

^a A "Child" is legally defined as a person before reaching the age of 14 years.

^b Use by children includes both active and passive contact by children.

^c Definition "short-term repetitive contact" taken from REACH Annex XVII entry 50 amendment (Regulation (EC) No.1272/2013)

^d According to the definition of the German Product Safety Act (ProdSG) (chapter 1 Article 2 No. 28) "foreseeable use" shall mean the use of a product in a manner that the person placing it on the market, has not intended, but which could be reasonably foreseeable.

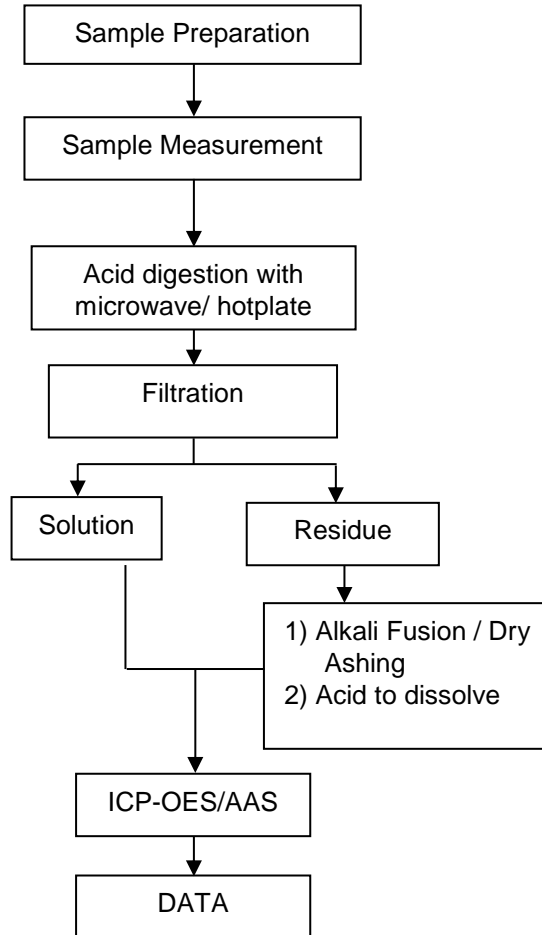
Remark:

The German committee on Product Safety (AfPS) published a new PAHs document (AfPS GS 2019:01 PAK) on April 10, 2020, which will be binding for the issue of GS mark certificate from July 1, 2020.

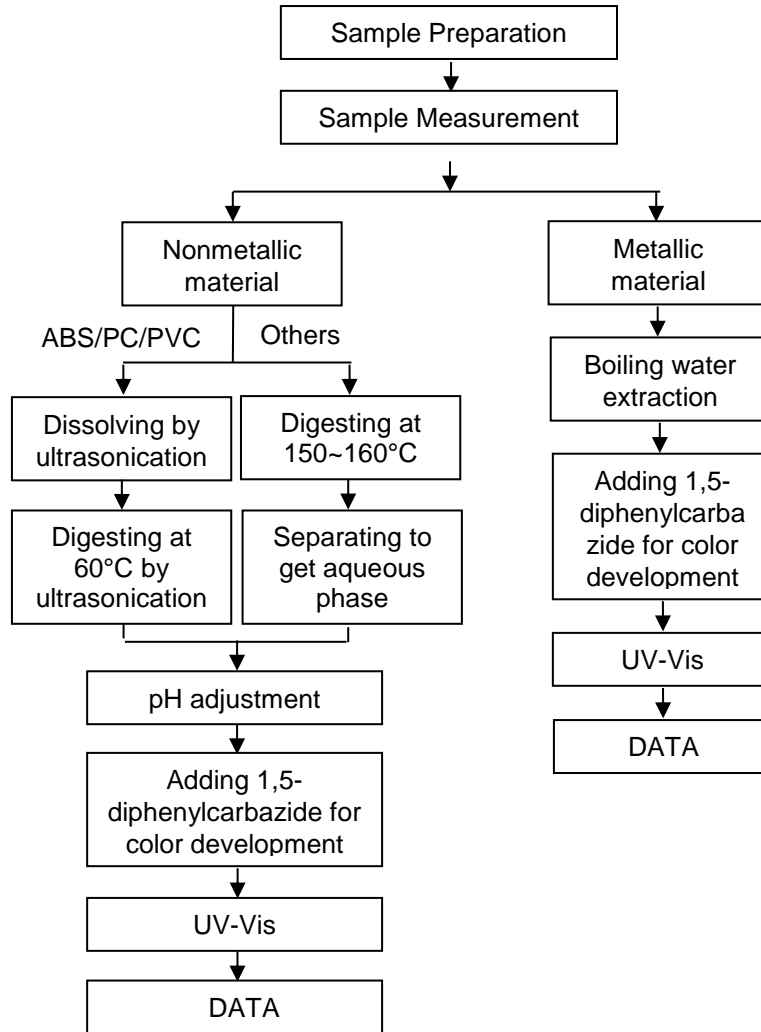
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.

Elements Testing Flow Chart

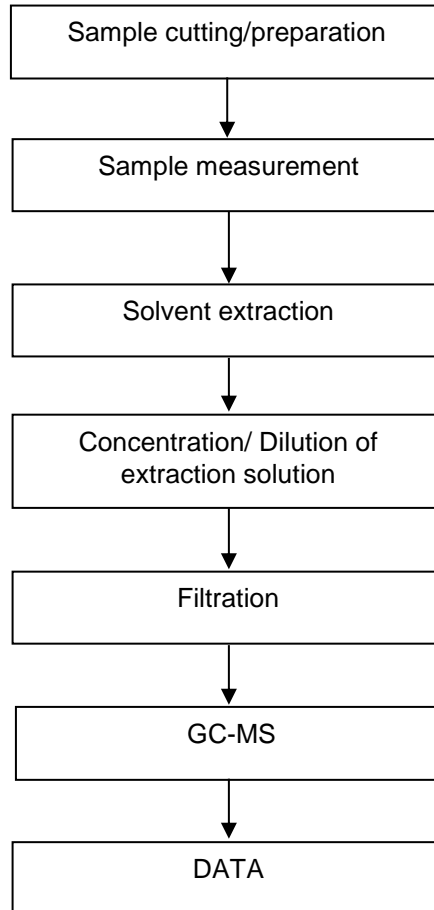
These samples were dissolved totally by pre-conditioning method according to below flow chart.



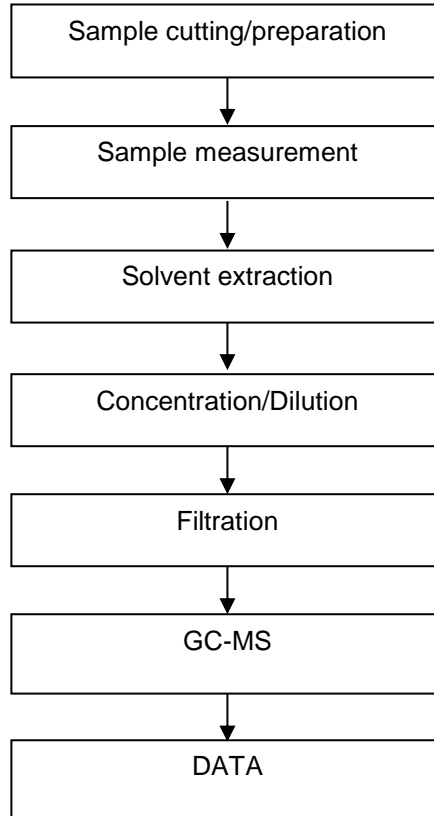
Hexavalent Chromium (Cr(VI)) Testing Flow Chart



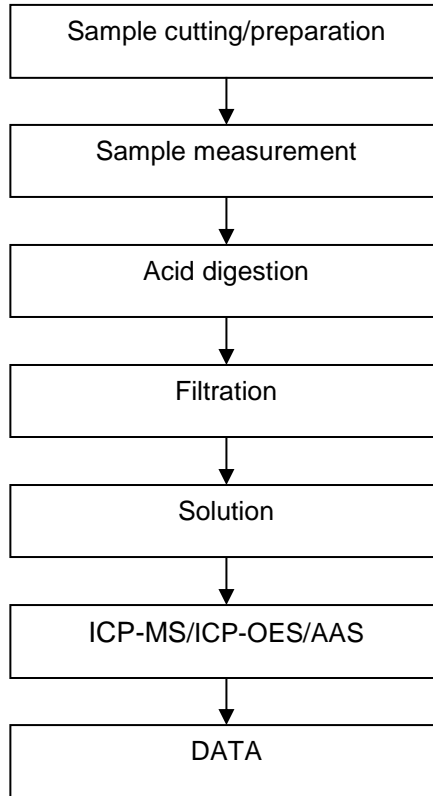
PBB/PBDE Testing Flow Chart



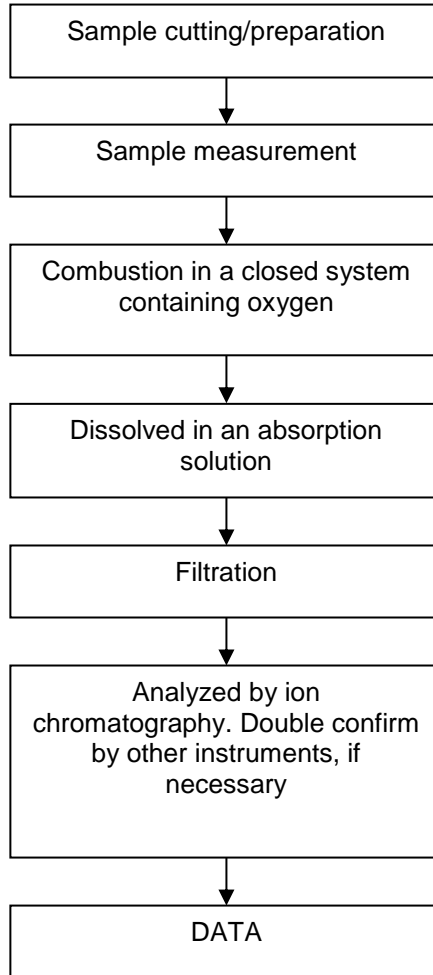
Phthalates Testing Flow Chart



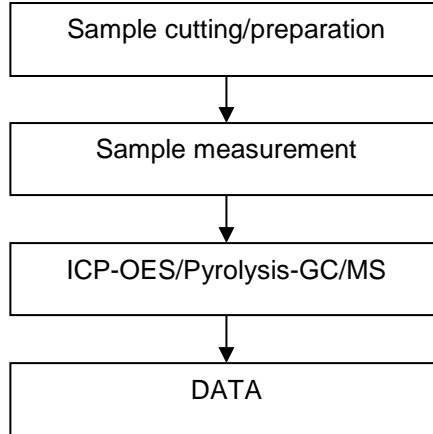
Elements Testing Flow Chart



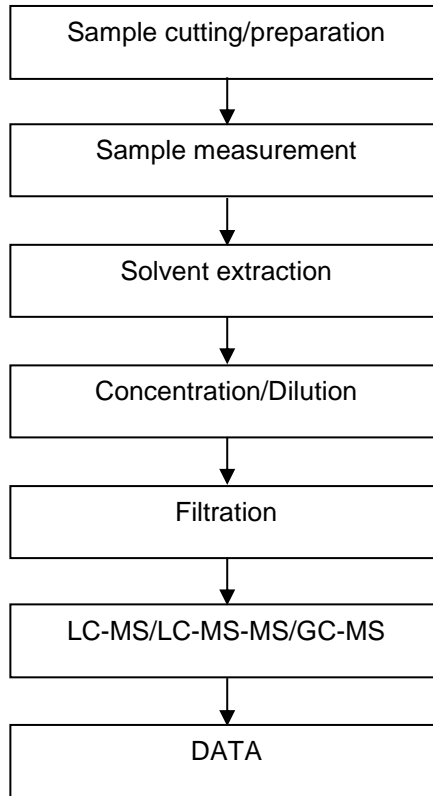
Halogen Testing Flow Chart



Red Phosphorus Testing Flow Chart

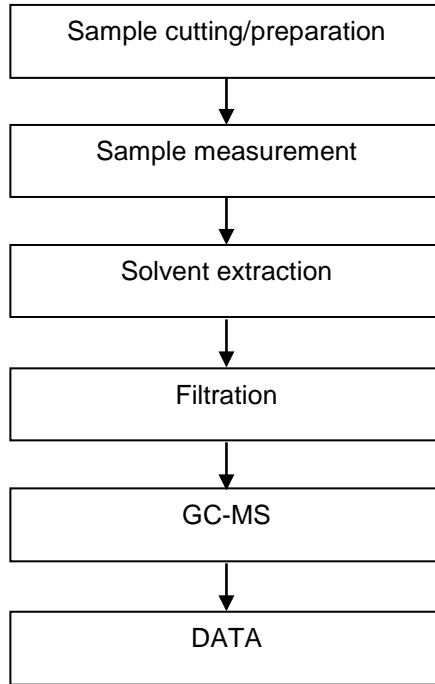


PFASs/ PFOS/PFOA Testing Flow Chart

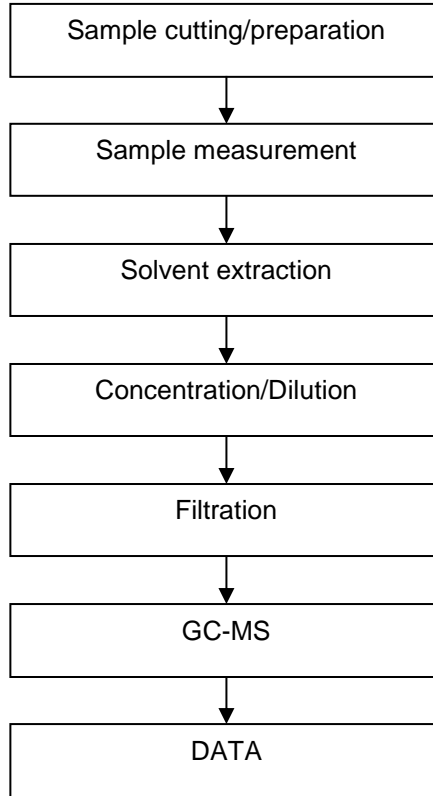


ATTACHMENTS

Persistent, Bioaccumulative, and Toxic (PBT) Chemicals Testing Flow Chart



PAHs Testing Flow Chart



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Sample Photo:



SGS authenticate the photo on original report only
*** End of Report ***

