

Test Report

No. : CE/2016/33558

Date : 2016/03/17

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HENKEL CORPORATION
14000 JAMBOREE ROAD, IRVINE, CALIFORNIA, 92606 U.S.A.



The following samples was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By : HENKEL CORPORATION
Sample Description : ADHESIVE
Style/Item No. : QMI519
Sample Receiving Date : 2016/03/11
Testing Period : 2016/03/11 TO 2016/03/17

=====
Test Requested :

- (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample.
- (2) Please refer to next pages for the other item(s).

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



Troy Chang Manager - Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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Test Result(s)

PART NAME No.1 : SILVER COLORED PASTE

| Test Item(s) | Unit | Method | MDL | Result |
|----------------------------|-------|---|-----|--------|
| | | | | No.1 |
| Cadmium (Cd) | mg/kg | With reference to IEC 62321-5: 2013 and performed by ICP-AES. | 2 | n.d. |
| Lead (Pb) | mg/kg | With reference to IEC 62321-5: 2013 and performed by ICP-AES. | 2 | n.d. |
| Mercury (Hg) | mg/kg | With reference to IEC 62321-4: 2013 and performed by ICP-AES. | 2 | n.d. |
| Hexavalent Chromium Cr(VI) | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. |
| Sum of PBBs | mg/kg | | - | n.d. |
| Monobromobiphenyl | mg/kg | | 5 | n.d. |
| Dibromobiphenyl | mg/kg | | 5 | n.d. |
| Tribromobiphenyl | mg/kg | | 5 | n.d. |
| Tetrabromobiphenyl | mg/kg | | 5 | n.d. |
| Pentabromobiphenyl | mg/kg | | 5 | n.d. |
| Hexabromobiphenyl | mg/kg | | 5 | n.d. |
| Heptabromobiphenyl | mg/kg | | 5 | n.d. |
| Octabromobiphenyl | mg/kg | | 5 | n.d. |
| Nonabromobiphenyl | mg/kg | | 5 | n.d. |
| Decabromobiphenyl | mg/kg | With reference to IEC 62321-6: 2015 and performed by GC/MS. | 5 | n.d. |
| Sum of PBDEs | mg/kg | | - | n.d. |
| Monobromodiphenyl ether | mg/kg | | 5 | n.d. |
| Dibromodiphenyl ether | mg/kg | | 5 | n.d. |
| Tribromodiphenyl ether | mg/kg | | 5 | n.d. |
| Tetrabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Pentabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Hexabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Heptabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Octabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Nonabromodiphenyl ether | mg/kg | | 5 | n.d. |
| Decabromodiphenyl ether | mg/kg | | 5 | n.d. |

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| Test Item(s) | Unit | Method | MDL | Result |
|--|-------|--|-----|--------|
| | | | | No.1 |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)) | mg/kg | With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS. | 5 | n.d. |
| DBP (Dibutyl phthalate) (CAS No.: 84-74-2) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5) | mg/kg | With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n.d. |
| Beryllium (Be) | mg/kg | With reference to US EPA Method 3050B. Analysis was performed by ICP-AES. | 2 | n.d. |

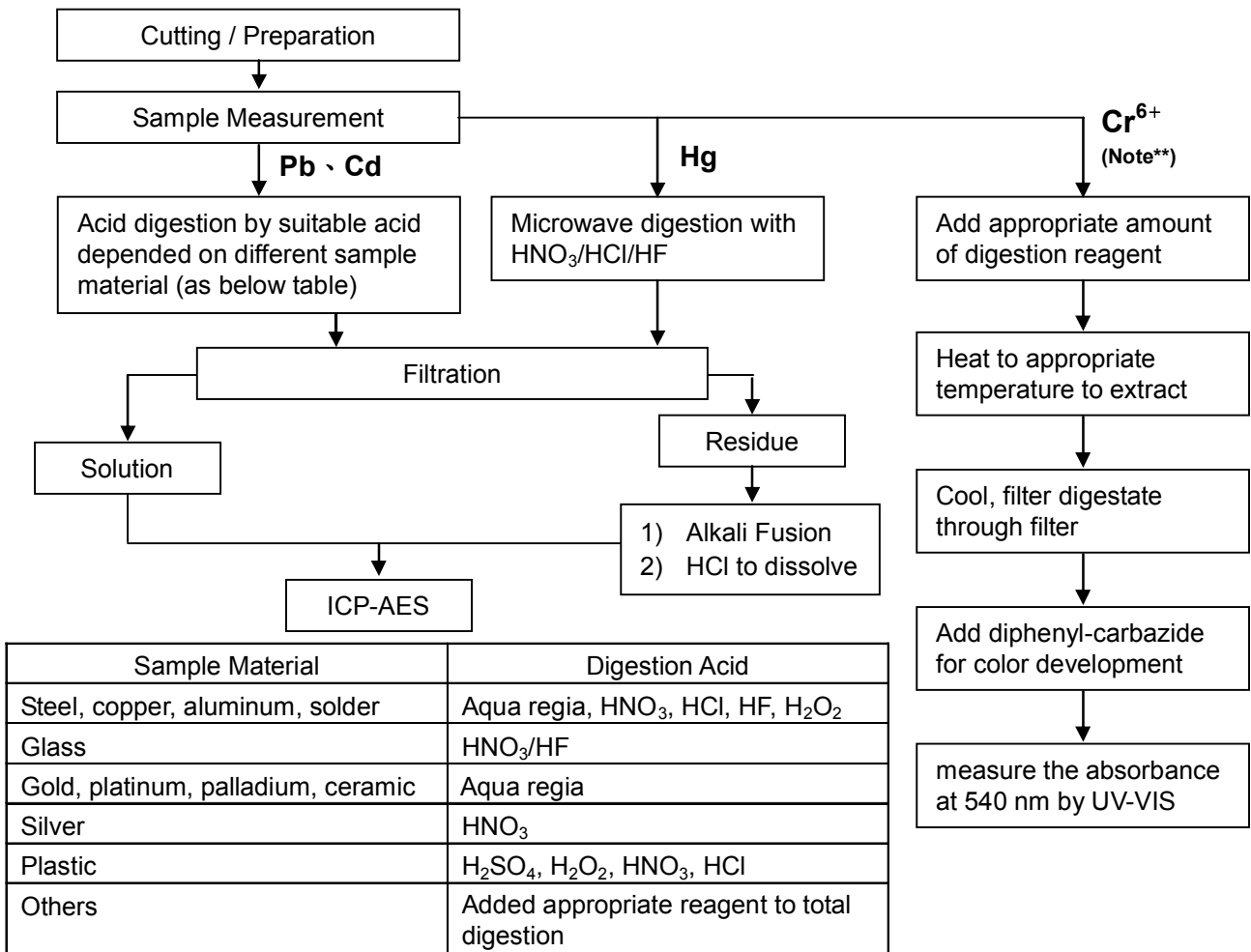
Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



Note (For IEC 62321)**

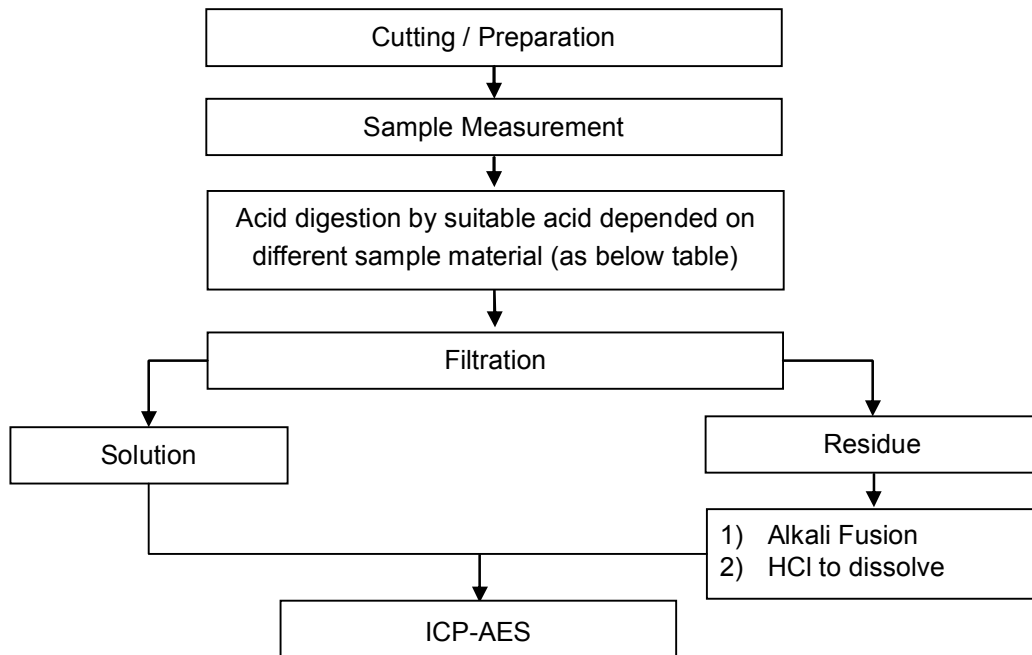
- (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 °C.
- (2) For metallic material, add pure water and heat to boiling.



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

- Technician: Climbgreat Yang
- Supervisor: Troy Chang

Flow Chart of digestion for the elements analysis performed by ICP-AES



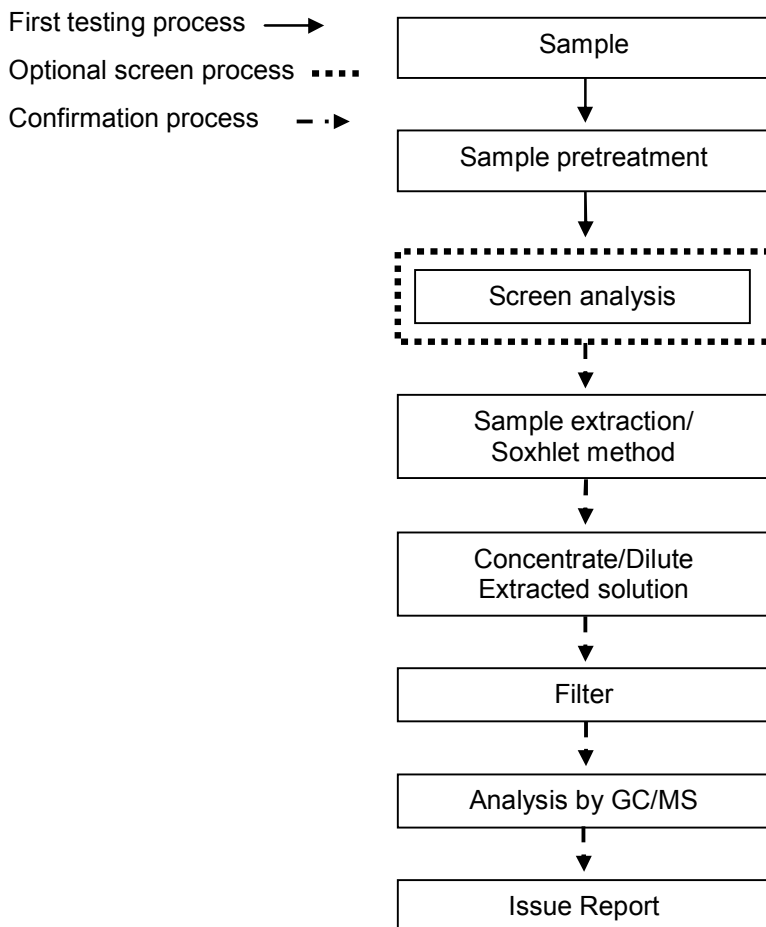
| | |
|------------------------------------|---|
| Steel, copper, aluminum, solder | Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂ |
| Glass | HNO ₃ /HF |
| Gold, platinum, palladium, ceramic | Aqua regia |
| Silver | HNO ₃ |
| Plastic | H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl |
| Others | Added appropriate reagent to total digestion |

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PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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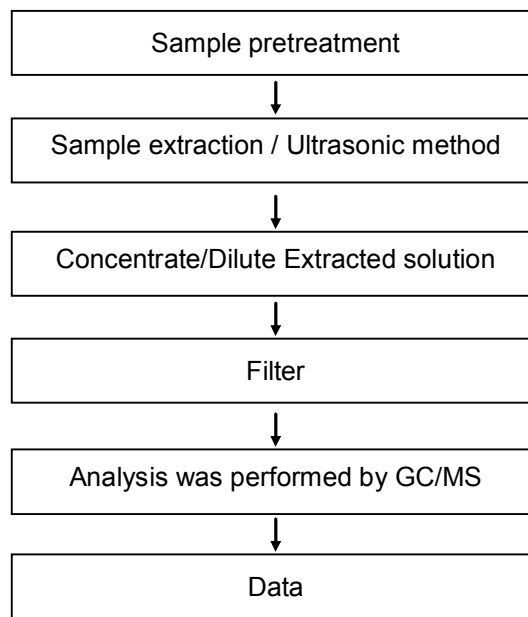
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HBCDD analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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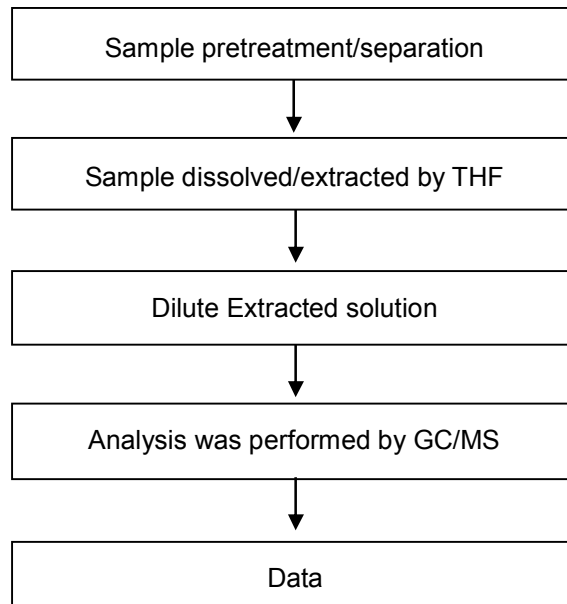
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Analytical flow chart of phthalate content

- Name of the person who made measurement: Andy Shu
- Name of the person in charge of measurement: Troy Chang

【Test method: IEC 62321-8】



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* The tested sample / part is marked by an arrow if it's shown on the photo. *

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** End of Report **

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