

Report No.: 248111142a

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Client: **US MASTERBATCH JOINT STOCK COMPANY**
Vao, Yen Binh Commue, Thach That District, Hanoi City, Vietnam**Test Item(s):** Plastic granule**Identification/
Model No(s):** PS FILLER MASTERBATCH; MODEL: PLASTIC GRANULE; MATERIAL: PS
FILLER MASTERBATCH; COLOR: WHITE**Sample receiving date:** 2022-03-02**Test period:** 2022-03-03 to 2022-03-05**Test Specification:****Test result:**

Legal requirement:

Restriction of the Use of Certain Hazardous Substances in Electrical and
Electronic Equipment, 2011/65/EU and its amendments

- | | |
|---|------|
| 1. Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB)
and Polybrominated diphenyl ethers (PBDE) | PASS |
| 2. Phthalates (DEHP, DBP, BBP, DiBP) | PASS |

Other information:*This test report replaces the one No. 248111142 due to typo mistake.***For and on behalf of**
TÜV Rheinland Vietnam Co., Ltd.
**Ms. Dao Thuy Khanh Linh/**
Project Manager

2022-03-05

Date

Name/Position

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Test result is drawn according to the kind and extent of tests performed.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

Material List:

Material No.	Material	Color	Location
M001	Plastic	White	Plastic granule
M002	Plastic	White	Plastic granule

1. Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)

Test method: - Total Cadmium, Lead, Mercury:
Totally digested then determination by ICP-OES, follow IEC 62321-4:2013 and IEC 62321-5:2013

- Chromium (VI):
Non-metal: Alkaline digestion, determination by UV-Vis spectrophotometry
Metal: spot test and followed by boiling water test, follow IEC 62321-7-1:2015

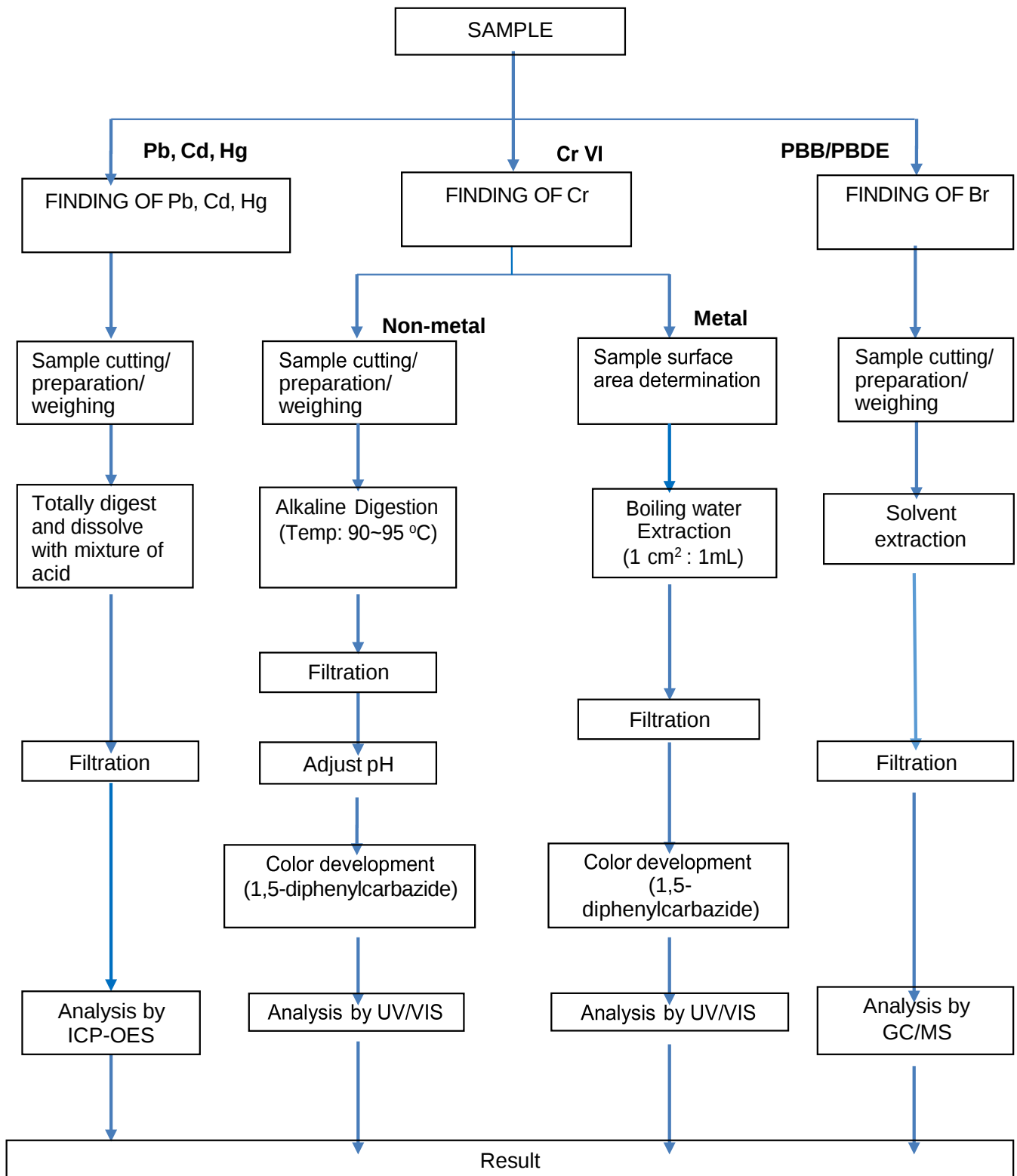
- PBBs, PBDEs:
Extraction with organic solvent, determination by GC-MS, follow IEC 62321-6:2015

Test result:

Material No.				M001+M002
Test parameter	Unit	RL	Requirement	Result
Cadmium (Cd)	mg/kg	2	< 100	n.d.
Lead (Pb)	mg/kg	2	< 1000	n.d.
Mercury (Hg)	mg/kg	2	< 1000	n.d.
Chromium VI (Cr VI) for metal protective coating	µg/cm ²	0.02	< 0.1	N.A.
Chromium VI (Cr VI)	mg/kg	3	< 1000	n.d.
Total Polybrominated biphenyls (PBBs) (*)	mg/kg	5	< 1000	n.d.
Total Polybrominated biphenyl ethers (PBDEs) (*)	mg/kg	5	< 1000	n.d.
Conclusion				Pass

Abbreviation: mg/kg = milligram per kilogram
RL = Reporting Limit
n.d.= Not Detected (<RL)
µg/cm² = microgram per square centimeter
N.A.: Not Applicable

Remark: According to IEC 62321-7-1:2015, result of Cr VI for metal sample is shown as Pass/Fail/Inconclusive.
Pass = Absence of Cr VI coating, Cr VI concentration is below the 0,10 µg/cm²
Fail = Presence of Cr VI coating, Cr VI concentration is above 0.13 µg/cm²
Inconclusive = Cr VI concentration is between 0.10–0.13 µg/cm². Further test with extra samples is recommended

Flow chart for RoHs

(*)

List of PBBs	List of PBDEs
Bromobiphenyl (MonoBB)	Bromodiphenyl ether (MonoBDE)
Dibromobiphenyl (DiBB)	Dibromodiphenyl ether (DiBDE)
Tribromobiphenyl (TriBB)	Tribromodiphenyl ether (TriBDE)
Tetrabromobiphenyl (TetraBB)	Tetrabromodiphenyl ether (TetraBDE)
Pentabromobiphenyl (PentaBB)	Pentabromodiphenyl ether (PentaBDE)
Hexabromobiphenyl (HexaBB)	Hexabromodiphenyl ether (HexaBDE)
Hexabromobiphenyl (HeptaBB)	Heptabromodiphenyl ether (HeptaBDE)
Octabromobiphenyl (Tech)(OctaBB)	Octabromodiphenyl ether (OctaBDE)
Nonabromobiphenyl (NonaBB)	Nonabromodiphenyl ether (NonaBDE)
Decabromobiphenyl (DecaBB)	Decabromodiphenyl ether (DecaBDE)

2. Phthalates (DEHP, DBP, BBP, DiBP)

Test method: Extraction with organic solvent, determination by GC-MS
 With reference to IEC 62321-8 (111/321/CD)

Test result:

Material No.				M001+M002
Test parameter	Unit	RL	Requirement	Result
Diethylhexylphthalate (DEHP)	mg/kg	50	< 1000	n.d.
Dibutylphthalate (DBP)	mg/kg	50	< 1000	n.d.
Benzylbutylphthalate (BBP)	mg/kg	50	< 1000	n.d.
Diisobutylphthalate (DiBP)	mg/kg	50	< 1000	n.d.
Conclusion				Pass

Abbreviation: n.d. = not detected (< Reporting Limit)

RL = Reporting Limit

mg/kg = milligram per kilogram

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Sample photo:



Item 1: Lab ID.: A001068833-001



Item 2: Lab ID.: A001068833-002

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