



TEST REPORT

Technical Report: (5222)356-0116

December 30, 2022

Date Received: December 22, 2022

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Room 1701, 17/F, Billion Plaza, 8 Cheung Yue Street,
Cheung Sha Wan, Kowloon, Hong Kong

Sample Description: Sample(s) received is/are stated to be:
Coated paper

Color:	/	Style No(s):	AGS-MV
Order No.:	/	PO No.:	NAMIQ0125
Age Grade:	/	Product End Use:	/
Vendor:	/	Retest No.:	(5222)335-0006
Manufacturer:	New Island Printing Group Co., Ltd.	Supplier Reference:	/
Buyer:	/	Country of Origin:	PRC
Test Period:	December 22, 2022 - December 30, 2022	Country of Destination:	/
Fiber Content:	/		
Care Instruction:	/		

DK

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SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
Migration of Certain Elements - European Parliament and Council Directive 2009/48/EC, Annex II, Part III, Point 13 with its Latest Amendment	PASS	
Heavy Metals Content in Packaging and Packaging Materials - European Parliament and Council Directive 94/62/EC with its Latest Amendment	PASS	
Heavy Metals Content in Packaging or Packaging Materials - United States Toxics in Packaging Clearinghouse (TPCH), Model Toxics in Packaging Legislation with Revisions up to July 2012	PASS	
Soluble Heavy Metals Content in Surface Coating - ASTM International Standard ASTM F963-17, Section 4.3.5.1(2)	PASS	
Soluble Heavy Metals Content in Substrate - ASTM International Standard ASTM F963-17, Section 4.3.5.2(2)(b)	PASS	
Total Lead Content in Surface Coating - ASTM International Standard ASTM F963-17, Section 4.3.5.1(1)	PASS	
Total Lead Content in Substrates- ASTM International Standard ASTM F963-17, Section 4.3.5.2(2)(a)	PASS	
Total Lead Content in Surface Coating - United States Consumer Product Safety Improvement Act (CPSIA) of 2008, Section 101(a)(2)	PASS	
Total Lead Content in Substrate - United States Consumer Product Safety Improvement Act (CPSIA) Section 101(a)(2)	PASS	
Total Lead Content	DATA	
Total Cadmium Content	DATA	
Phthalates Content in Children's Toys and Child Care Articles - United States Code of Federal Regulations (CFR), Title 16, Part 1307	PASS	
Phthalates Content	DATA	
Phthalates Content - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments	PASS	
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments	PASS	
Candidate List of Substances of Very High Concern for authorization published by European Chemicals Agency (ECHA) Regarding Regulation (EC) No. 1907/2006 concerning REACH	PASS	
SVHC based on Proposal for Identification of Substances of Very High Concern published for Commenting on Sep. 02, 2022	PASS	

REMARK

If there are questions or concerns on this report, please contact:

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BUREAU VERITAS HONG KONG LTD.

MS. ZOE FUNG
SENIOR MANAGER, RS DEPARTMENT

Photo of the Submitted Sample



SAMPLE DESCRIPTION ASSIGNED BY LABORATORY:

ITEM	ITEM DESCRIPTION
1	Black/ silvery coating
2	White/ silvery coating
3	White paper card with transparent laminate
4	White paper card with transparent laminate with black/ white/ silvery coating

TEST RESULT

Migration of Certain Elements - European Parliament and Council Directive 2009/48/EC, Annex II, Part III, Point 13 with its Latest Amendment

Test Method : European Standard EN 71-3: 2019 + A1: 2021, Section 8

See Soluble Element (Parameter) and its corresponding Maximum Allowable Limit (Req.) in Result Table	Type I	Dry, brittle, powder-like or pliable toy material			
	Type II	Liquid or sticky toy material			
	Type III	Scraped-off toy material			
-	Unit	Req.	Result		
Test Item(s)	-	-	1 [^]	2 [^]	3 [^]
Type	-	III	III	III	III
Parameter	-	-	-	-	-
Mass of Trace Amount	g	-	-	-	-
Aluminium (Al)	mg/kg	28130	205	188	380
Antimony (Sb)	mg/kg	560	ND	ND	ND
Arsenic (As)	mg/kg	47	ND	ND	ND
Barium (Ba)	mg/kg	18750	20.5	ND	ND
Boron (B)	mg/kg	15000	ND	ND	ND
Cadmium (Cd)	mg/kg	17	ND	ND	ND
Chromium III (Cr III)	mg/kg	460	ND	ND	ND
Chromium VI (Cr VI)	mg/kg	0.053	ND	ND	ND
Cobalt (Co)	mg/kg	130	ND	ND	ND
Copper (Cu)	mg/kg	7700	ND	ND	ND
Lead (Pb)	mg/kg	23	ND	ND	ND
Manganese (Mn)	mg/kg	15000	ND	ND	7.33
Mercury (Hg)	mg/kg	94	ND	ND	ND
Nickel (Ni)	mg/kg	930	ND	ND	ND
Selenium (Se)	mg/kg	460	ND	ND	ND
Strontium (Sr)	mg/kg	56000	ND	ND	66.9
Tin (Sn)	mg/kg	180000	ND	ND	ND
Organic tin	mg/kg	12	ND	ND	ND
Zinc (Zn)	mg/kg	46000	9.48	7.21	2.09
Conclusion	-	-	PASS	PASS	PASS

Note / Key :

ND = Not detected

">" = Greater than

g = gram(s)

mg/kg = milligram(s) per kilogram

Detection Limit (mg/kg) :

For Type I and Type II - Al : 2 ; Sb : 2 ; As : 0.15 ; Ba : 2 ; B : 2 ; Cd : 0.15 ; Cr III : 0.15 ; Cr VI : 0.005 ;

Co : 2 ; Cu : 2 ; Pb : 0.5 ; Mn : 2 ; Hg : 0.15 ; Ni : 2 ; Se : 2 ; Sr : 2 ; Sn : 2 ; Organic tin : 0.04 ; Zn : 2

For Type III - Al : 2 ; Sb : 2 ; As : 2 ; Ba : 2 ; B : 2 ; Cd : 2 ; Cr III : 0.15 ; Cr VI : 0.005 ; Co : 2 ; Cu : 2 ; Pb : 2 ;

Mn : 2 ; Hg : 2 ; Ni : 2 ; Se : 2 ; Sr : 2 ; Sn : 2 ; Organic tin : 2 ; Zn : 2

Remark :

- Results of Cr III and Cr VI were reported as sum of soluble chromium content unless further verified.
- Result(s) of organic tin was (were) calculated by assuming the soluble tin content was wholly contributed from tributyltin (TBT) cation unless further specified.
- The Ph measured shall be reported after migration if it was outside the range of 1.1 to 1.3.
- European Standard EN 71 Part 3: 2019 is currently harmonized under European Parliament and Council Directive 2009/48/EC and will be superseded when European Standard EN 71 Part 3: 2019 + A1: 2021 is harmonized.
- # denotes as result(s) was (were) verified by :
For organic tin content – Test method with reference to European Standard EN 71-3: 2019 + A1: 2021 and reported as tributyltin (TBT) cation.
For Cr VI content – In house ion chromatography analysis.

TEST RESULT

Heavy Metals Content in Packaging and Packaging Materials - European Parliament and Council Directive 94/62/EC with its Latest Amendment

Heavy Metal(s)	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr VI)
Maximum Allowable Limit	100 mg/kg (Sum of Pb, Cd, Hg and Cr VI)			
-	Unit	Result		
Test Item(s)	-	4^	-	-
Parameter	-	-	-	-
Cadmium (Cd)	mg/kg	ND	-	-
Lead (Pb)	mg/kg	ND	-	-
Mercury (Hg)	mg/kg	ND	-	-
Chromium VI (Cr VI)	mg/kg	ND	-	-
Sum	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key:

ND = Not detected ">" = Greater than

mg/kg = milligram(s) per kilogram

Detection Limit (mg/kg): Each 5; Sum 20

Remark:

- Unless further specified, the reported results were performed by total metals content analysis through complete decomposition.



TEST RESULT

Heavy Metals Content in Packaging or Packaging Materials - United States Toxics in Packaging Clearinghouse (TPCH), Model Toxics in Packaging Legislation with Revisions up to July 2012

Heavy Metal(s)	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr VI)
Maximum Allowable Limit	100 mg/kg (Sum of Pb, Cd, Hg and Cr VI)			
-	Unit	Result		
Test Item(s)	-	4^	-	-
Parameter	-	-	-	-
Cadmium (Cd)	mg/kg	ND	-	-
Lead (Pb)	mg/kg	ND	-	-
Mercury (Hg)	mg/kg	ND	-	-
Chromium VI (Cr VI)	mg/kg	ND	-	-
Sum	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key:

ND = Not detected “>” = Greater than
 mg/kg = milligram(s) per kilogram U. S. EPA = United States Environmental Protection Agency
 Detection Limit (mg/kg): Each 5; Sum 20

Remark:

- This legislation was originally drafted by the Source Reduction Council of the Coalition of Northeastern Governors (CONEG).
- According to Model Toxics in Packaging Legislation with Revisions up to July 2012, Section 5(c), exemption were granted to recycled materials containing up to 200 milligrams per kilogram for the sum of lead, cadmium, mercury and hexavalent chromium.
- Unless further specified, the reported results were performed by total metals content analysis through complete decomposition.



TEST RESULT

Soluble Heavy Metals Content in Surface Coating - ASTM International Standard ASTM F963-17, Section 4.3.5.1(2)

Test Method : ASTM International Standard ASTM F963-17, Sections 8.3.2 to 8.3.4.

Soluble Element(s)	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Maximum Allowable Limit (mg/kg)	25	1000	75	60	60	90	60	500
Analytical Correction (%)	60	30	30	30	50	30	60	60

-	Unit	Result	
Test Item(s)	-	1^	2^
Parameter	-	-	-
Mass of Trace Amount	g	-	-
Soluble Arsenic (As)	mg/kg	ND	ND
Soluble Barium (Ba)	mg/kg	ND	ND
Soluble Cadmium (Cd)	mg/kg	ND	ND
Soluble Chromium (Cr)	mg/kg	ND	ND
Soluble Mercury (Hg)	mg/kg	ND	ND
Soluble Lead (Pb)	mg/kg	ND	ND
Soluble Antimony (Sb)	mg/kg	ND	ND
Soluble Selenium (Se)	mg/kg	ND	ND
Conclusion	-	PASS	PASS

Note / Key :

- ND = Not detected
- % = percent
- ppm = milligram(s) per kilogram = mg/kg = part(s) per million
- Reporting Limit (mg/kg) : As : 2.5; Ba : 100; Cd : 7.5; Each (Cr, Hg, & Sb) : 6.0; Pb : 9.0; Se : 50
- ">" = Greater than
- g = gram(s)
- NR = Not requested

Remark :

- ^c denotes as reported result(s) was (were) adjusted by analytical correction shown in limit table.

TEST RESULT

Soluble Heavy Metals Content in Substrate - ASTM International Standard ASTM F963-17, Section 4.3.5.2(2)(b)

Test Method : ASTM International Standard ASTM F963-17, Section 8.3.5 (Excluding 8.3.5.5(3)).

Soluble Element(s)	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Maximum Allowable Limit (mg/kg)	25	1000	75	60	60	90	60	500
Analytical Correction (%)	60	30	30	30	50	30	60	60

-	Unit	Result		
Test Item(s)	-	3 [^]	-	-
Parameter	-	-	-	-
Mass of Trace Amount	g	-	-	-
Soluble Arsenic (As)	mg/kg	ND	-	-
Soluble Barium (Ba)	mg/kg	ND	-	-
Soluble Cadmium (Cd)	mg/kg	ND	-	-
Soluble Chromium (Cr)	mg/kg	ND	-	-
Soluble Mercury (Hg)	mg/kg	ND	-	-
Soluble Lead (Pb)	mg/kg	ND	-	-
Soluble Antimony (Sb)	mg/kg	ND	-	-
Soluble Selenium (Se)	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key :

ND = Not detected

“>” = Greater than

NR = Not requested

% = percent

g = gram(s)

ppm = milligram(s) per kilogram = mg/kg = part(s) per million

Reporting Limit (mg/kg): As : 2.5; Ba : 100; Cd : 7.5; Each (Cr, Hg, & Sb) : 6.0; Pb : 9.0; Se : 50

Remark :

- ^c denotes as reported result(s) was (were) adjusted by analytical correction shown in limit table.



TEST RESULT

Total Lead Content in Surface Coating - ASTM International Standard ASTM F963-17, Section 4.3.5.1(1)

Test Method : ASTM International Standard ASTM F963-17, Section 8.3.1 and Annex A7.

Maximum Allowable Limit:		90 mg/kg		
-	Unit	Result		
Test Item(s)	-	1+2^	-	-
Parameter	-	-	-	-
Total Lead (Pb)	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key :

ND = Not detected

% = percent

Detection Limit (mg/kg): 20

“>” = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

NR = Not requested

Remark :

- Test Item(s) with total heavy metals content in surface coating exceeding 80 % of this maximum allowable limit based on the lowest weight component or this maximum allowable limit should be considered as data and further tested by soluble heavy metals analysis of ASTM International Standard ASTM F963-17, Sections 8.3.2 to 8.3.4 as specified in Section 8.3.1.3.
- Test Item(s) with total lead content in surface coating exceeding this maximum allowable limit should be retained as fail and not required to be further tested by soluble heavy metals analysis of ASTM International Standard ASTM F963-17, Sections 8.3.2 to 8.3.4 as specified in Section 8.3.1.3.

Total Lead Content in Substrates - ASTM International Standard ASTM F963-17, Section 4.3.5.2(2)(a)

Test Method : ASTM International Standard ASTM F963-17, Section 8.3.1 and Annex A7.

Maximum Allowable Limit:		100 mg/kg		
-	Unit	Result		
Test Item(s)	-	3^	-	-
Parameter	-	-	-	-
Total Lead (Pb)	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key :

ND = Not detected

% = percent

Detection Limit (mg/kg):

For Nonmetallic material(s): 10

For Metallic material(s): 10

“>” = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

NR = Not requested

Remark :

- Test Item(s) with total heavy metals content (Except for total lead content) in substrate exceeding 80 % of this maximum allowable limit based on the lowest weight component or this maximum allowable limit should be considered as data and further tested by soluble heavy metals analysis of ASTM International Standard ASTM F963-17, Section 8.3.5 (Excluding 8.3.5.5(3)) as specified in Section 8.3.1.3.
- Test Item(s) with total lead content in substrate exceeding this maximum allowable limit should be retained as fail and not required to be further tested by soluble heavy metals analysis of ASTM International Standard ASTM F963-17, Section 8.3.5 (Excluding 8.3.5.5(3)) as specified in Section 8.3.1.3.



TEST RESULT

Total Lead Content in Surface Coating - United States Consumer Product Safety Improvement Act (CPSIA) of 2008, Section 101(a)(2)

Test Method : U. S. CPSC-CH-E1003-09.1 (February 25, 2011).

Maximum Allowable Limit:		90 mg/kg		
-	Unit	Result		
Test Item(s)	-	1+2 [^]	-	-
Parameter	-	-	-	-
Total Lead (Pb)	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key:

ND = Not detected “>” = Greater than
 mg/kg = milligram(s) per kilogram U. S. = United States
 Detection Limit (mg/kg): 10

Total Lead Content in Substrate - United States Consumer Product Safety Improvement Act (CPSIA) Section 101(a)(2)

Test Method : U. S. CPSC Test Method CPSC-CH-E1001-08.3 (November 15, 2012) or U. S. CPSC Test Method CPSC-CH-E1002-08.3 (November 15, 2012).

Maximum Allowable Limit :		100 mg/kg		
-	Unit	Result		
Test Item(s)	-	3 [^]	-	-
Parameter	-	-	-	-
Total Lead (Pb)	mg/kg	ND	-	-
Conclusion	-	PASS	-	-

Note / Key :

ND = Not detected “>” = Greater than
 mg/kg = milligram(s) per kilogram
 Detection Limit (mg/kg) : 10

Remark :

- According to Children’s Products Containing Lead; Exemptions for Certain Electronic Devices; Final Rule, exemption were granted to steel alloy containing up to 0.35 % lead by weight, aluminum containing up to 0.4 % lead by weight and copper-based alloy containing up to 4 % lead by weight.
- According to Petition Requesting Exception from Lead Content Limits; Notice Granting Exception, exemption was granted to certain aluminum alloy on certain ride-on children`s products containing up to 0.03 % lead weight.



TEST RESULT

Total Lead Content

Test Method : Sample was digested with acid and then analyzed by Inductively Coupled Argon Plasma Spectrometer / Inductively Coupled Plasma Mass Spectrometer

Maximum Allowable Limit:		/		
-	Unit	Result		
Test Item(s)	-	1+2^	3^	-
Parameter	-	-	-	-
Total Lead (Pb)	mg/kg	ND	ND	-
Conclusion	-	DATA	DATA	-

Note / Key:

ND = Not detected “>” = Greater than
 mg/kg = milligram(s) per kilogram

Detection Limit (mg/kg): 10

Total Cadmium Content

Test Method : Sample was digested with acid and then analyzed by Inductively Coupled Argon Plasma Spectrometer / Inductively Coupled Plasma Mass Spectrometer

Maximum Allowable Limit:		/		
-	Unit	Result		
Test Item(s)	-	1+2^	3^	-
Parameter	-	-	-	-
Total Cadmium (Cd)	mg/kg	ND	ND	-
Conclusion	-	DATA	DATA	-

Note / Key:

ND = Not detected “>” = Greater than
 mg/kg = milligram(s) per kilogram No. = Number(s)

Detection Limit (mg/kg): 10



TEST RESULT

Phthalates Content in Children`s Toys and Child Care Articles - United States Code of Federal Regulations (CFR), Title 16, Part 1307

Test Method : With reference to U. S. CPSC Test Method CPSC-CH-C1001-09.4 (January 17, 2018).

Maximum Allowable Limit:	1000 mg/kg (Each of the listed phthalates)			
Test Item(s)	Result			Conclusion
	Detected Analyte(s)	Conc.	Unit	
1+2^	ND	ND	mg/kg	PASS
3^	ND	ND	mg/kg	PASS

Note / Key :

ND = Not detected “>” = Greater than Conc. = Concentration
mg/kg = milligram(s) per kilogram = ppm = part(s) per million
10 000 mg/kg = 1 % % = percent
U. S. CPSC = United States Consumer Product Safety Commission
Detection Limit: Each 50 mg/kg

Remark:

- The list of phthalates is summarized in table of Appendix.
- Accessible plastic materials (Including natural and synthetic rubber), plasticizer print, scrapable surface coatings, decals, unscrapable polymeric coated materials, adhesives and sealants, polyvinyl acetate (PVAc) adhesive formulations used in hardwood plywood, toy nail polish, reusable packaging, electrical plug and cables of children`s toys and childcare articles are applicable to be tested with the exclusion for adhesive for stickers and the materials listed below:
 - (i) Polypropylene (PP);
 - (ii) Polyethylene (PE),
 - (iii) Acrylonitrile butadiene styrene (ABS);
 - (iv) General purpose polystyrene (GPPS);
 - (v) Medium-impact polystyrene (MIPS);
 - (vi) High-impact polystyrene (HIPS);
 - (vii) Super high-impact polystyrene (SHIPS); and
 - (viii) Their additives as listed in United States Code of Federal Regulations (CFR), Title 16, Part 1308.
- If no or unacceptable documentation, like Bill of Materials (BOM) or material identification, is provided by client, phthalate test(s) is (are) required to conduct on all plastic materials.
- If no or unacceptable adhesive formulation of hardwood plywood is provided by client, phthalate test(s) is (are) required to conduct on all hardwood plywood.
- Vendor is responsible for the compliance of other accessible materials, including additives in the exempt plastic materials, which are not tested.



TEST RESULT

Phthalates Content

Test Method : Solvent extraction with Gas Chromatograph Mass Spectrometer (GC-MS) or Liquid Chromatograph Mass Spectrometer (LC-MS) analysis.

Client's Limit:	/			
Test Item(s)	Result			Conclusion
	Detected Analyte(s)	Conc.	Unit	
1+2^	ND	ND	mg/kg	DATA
3^	ND	ND	mg/kg	DATA

Note / Key:

ND = Not detected

">" = More than

Conc. = Concentration

mg/kg = milligram per kilogram

Detection Limit (mg/kg): Each 50

Remark:

- The list of phthalates is summarized in table of Appendix.

Phthalates Content - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments

Test Method : With reference to International Standard IEC 62321-8: 2017.

Maximum Allowable Limit:	Each of the listed phthalates : 0.1 % ^[a]			
Test Item(s)	Result			Conclusion
	Detected Analyte(s)	Conc.	Unit	
1+2^	ND	ND	%	PASS
3^	ND	ND	%	PASS

Note / Key :

ND = Not detected

">" = Greater than

Conc. = Concentration

% = percent

1 % = 10 000 mg/kg

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (%) - Each of the listed phthalates : 0.005

Remark :

- The list of phthalates is summarized in table of Appendix.
- The testing approach is listed in table of Appendix.
- ^[a] denotes as this maximum allowable limit applies to:
 - Medical devices (Including in vitro medical devices) and monitoring and control instruments (Including industrial monitoring and control instruments) placed on the market on or after July 22, 2021.
 - Other products (Except toys) placed on the market on or after July 22, 2019.

TEST RESULT

European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments

Test Method : See Appendix.

See Analytes (Parameter) and their corresponding Maximum Allowable Limit (Req.) in Result Table	Type I	Metallic material			
	Type II	Glass or ceramic material			
	Type III	Other non-metallic material except Type II			
-	Unit	Req.	Result		
Test Item(s)	-	-	1+2^	3^	-
Type	-	III	III	III	-
Parameter	-	-	-	-	-
Lead (Pb)	mg/kg	1000	7.28	ND	-
Cadmium (Cd)	mg/kg	100	ND	ND	-
Mercury (Hg)	mg/kg	1000	ND	ND	-
Chromium VI (Cr VI)	mg/kg	1000	ND	ND	-
PBBs	mg/kg	1000	ND	ND	-
MonoBB	mg/kg	-	ND	ND	-
DiBB	mg/kg	-	ND	ND	-
TriBB	mg/kg	-	ND	ND	-
TetraBB	mg/kg	-	ND	ND	-
PentaBB	mg/kg	-	ND	ND	-
HexaBB	mg/kg	-	ND	ND	-
HeptaBB	mg/kg	-	ND	ND	-
OctaBB	mg/kg	-	ND	ND	-
NonaBB	mg/kg	-	ND	ND	-
DecaBB	mg/kg	-	ND	ND	-
PBDEs	mg/kg	1000	ND	ND	-
MonoBDE	mg/kg	-	ND	ND	-
DiBDE	mg/kg	-	ND	ND	-
TriBDE	mg/kg	-	ND	ND	-
TetraBDE	mg/kg	-	ND	ND	-
PentaBDE	mg/kg	-	ND	ND	-
HexaBDE	mg/kg	-	ND	ND	-
HeptaBDE	mg/kg	-	ND	ND	-
OctaBDE	mg/kg	-	ND	ND	-
NonaBDE	mg/kg	-	ND	ND	-
DecaBDE	mg/kg	-	ND	ND	-
Conclusion	-	-	PASS	PASS	-

Note / Key :

ND = Not detected	">" = Greater than	Req. = Requirement
NR = Not requested	mg/kg = milligram(s) per kilogram = ppm = part(s) per million	
% = percent	10 000 mg/kg = 1 %	
Detection Limit (mg/kg) :		
For Type I - Each (Pb, Cd & Hg) : 2.0		
For Type II - Each (Pb, Cd, Hg & Cr VI) : 2.0		
For Type III - Metal, Polymers & Electronics - Each (Pb, Cd, Hg & Cr VI) : 2.0; Each (PBBs & PBDEs) : 50;		
Others - Each (Pb, Cd & Hg) : 2.0; Cr VI : 3.0; Each (PBBs & PBDEs) : 50		

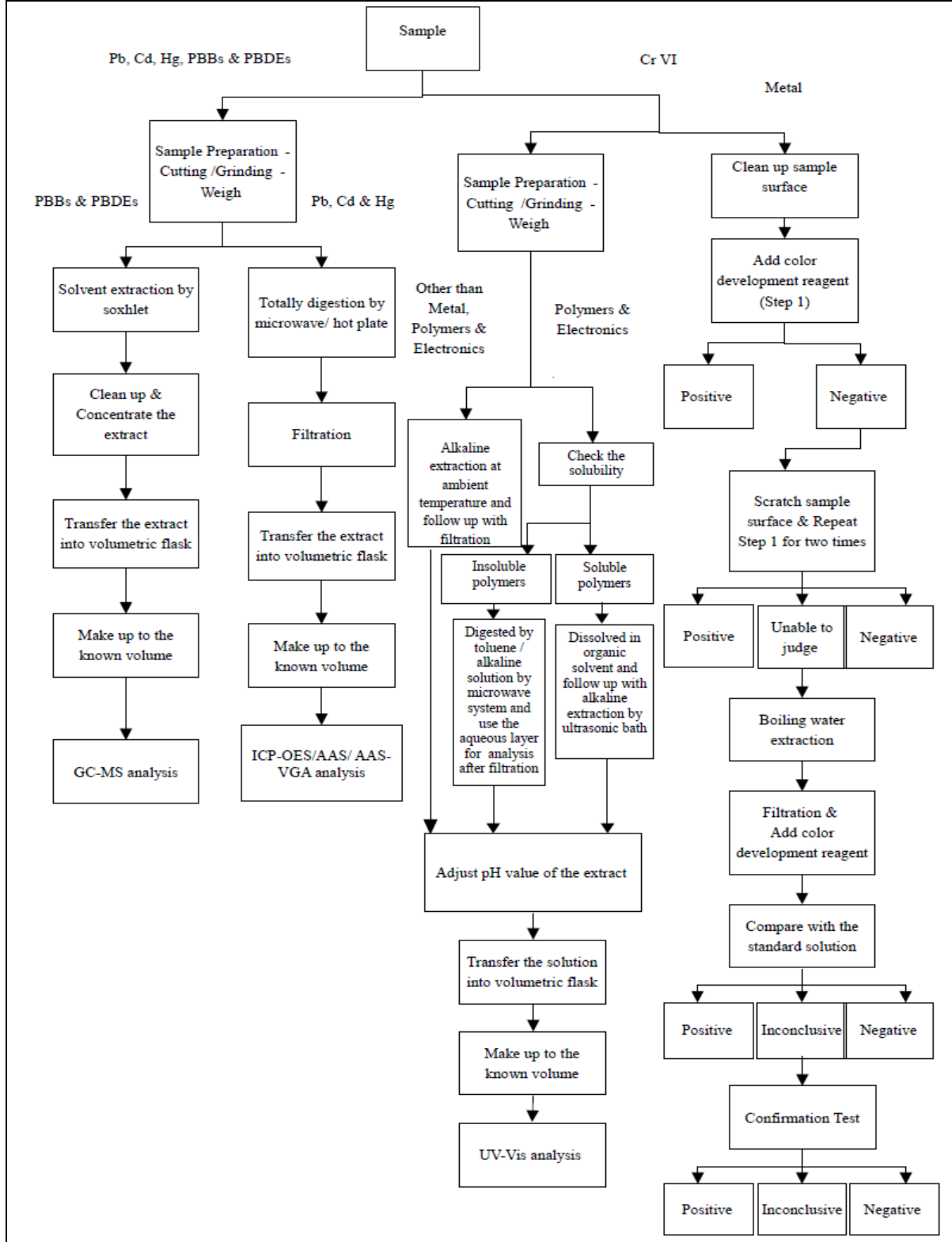
Remark :

- The testing approach is listed in table of Appendix.
- According to European Parliament and Council Directive 2011/65/EU, Article 5 "Adaptation of the Annexes to scientific and technical progress", exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.

APPENDIX

List of Analytes and their Corresponding Test Methods [European Parliament and Council Directive 2011/65/EU] :		
No.	Name of Analytes	Test Method(s)
1	Lead (Pb)	With reference to International Standard IEC 62321-5: 2013.
2	Cadmium (Cd)	
3	Mercury (Hg)	With reference to International Standard IEC 62321-4: 2017.
4	Chromium VI (Cr VI)	<u>Metal</u> : With reference to International Standard IEC 62321-7-1: 2015. <u>Polymers and Electronics</u> : With reference to European Standard EN 62321-7-2: 2017 <u>Leather</u> : International Standard ISO 17075: 2007 <u>Other than Metal, Leather, Polymers and Electronics</u> : With reference to International Standard ISO 17075: 2007
5	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	With reference to International Standard IEC 62321-6: 2015.
6	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	

Test Flowchart of Heavy Metals and Flame Retardants Content [European Parliament and Council Directive 2011/65/EU] :



TEST RESULT

Candidate List of Substances of Very High Concern for authorization published by European Chemicals Agency (ECHA) Regarding Regulation (EC) No. 1907/2006 concerning REACH

No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				4		
1	Triethyl arsenate*	15606-95-8	427-700-2	ND	0.01	Carcinogenic
2	Anthracene	120-12-7	204-371-1	ND	0.005	PBT
3	4,4'-Diaminodiphenyl methane (MDA)	101-77-9	202-974-4	ND	0.005	Carcinogenic
4	Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to human health
5	Cobalt dichloride*	7646-79-9	231-589-4	ND	0.01	Carcinogenic
6	Diarsenic pentaoxide*	1303-28-2	215-116-9	ND	0.01	Carcinogenic
7	Diarsenic trioxide*	1327-53-3	215-481-4	ND	0.01	Carcinogenic
8	Sodium dichromate*	7789-12-0 ⁽¹⁾ , 10588-01-9 ⁽²⁾	234-190-3	ND	0.01	Carcinogenic; Mutagenic; Toxic for reproduction
9	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	ND	0.005	vPvB
10	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	204-211-0	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to environment and human health
11	Hexabromo cyclododecane (HBCDD) and all major diastereoisomers identified: α - HBCDD β - HBCDD γ - HBCDD	3194-55-6 ⁽³⁾ , 25637-99-4 ⁽⁴⁾ 134237-50-6 134237-51-7 134237-52-8	247-148-4, 221-695-9	ND	0.005	PBT
12	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (SCCP)	85535-84-8	287-476-5	ND	0.01	PBT, vPvB
13	Bis(tributyltin)oxide (TBTO)**	56-35-9	200-268-0	ND	0.005	PBT
14	Lead hydrogen arsenate*	7784-40-9	232-064-2	ND	0.01	Carcinogenic; Toxic for reproduction
15	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to human health
16	2,4-Dinitrotoluene	121-14-2	204-450-0	ND	0.005	Carcinogenic
17	Anthracene oil	90640-80-5	292-602-7	ND	0.01	Carcinogenic, PBT, vPvB

18	Anthracene oil, anthracene paste, distn. Lights	91995-17-4	295-278-5	ND	0.01	Carcinogenic; Mutagenic, PBT, vPvB
19	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9	ND	0.01	Carcinogenic; Mutagenic, PBT, vPvB
20	Anthracene oil, anthracene-low	90640-82-7	292-604-8	ND	0.01	Carcinogenic; Mutagenic, PBT, vPvB
21	Anthracene oil, anthracene paste	90640-81-6	292-603-2	ND	0.01	Carcinogenic; Mutagenic, PBT, vPvB
22	Diisobutyl phthalate	84-69-5	201-553-2	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to human health
23	Aluminosilicate, Refractory Ceramic Fibres ^{*a}	Index no. 650-017-00-8		ND	0.01	Carcinogenic
24	Zirconia Aluminosilicate, Refractory Ceramic Fibres ^{*b}	Index no. 650-017-00-8		ND	0.01	Carcinogenic
25	Lead chromate*	7758-97-6	231-846-0	ND	0.01	Carcinogenic; Toxic for reproduction
26	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	ND	0.01	Carcinogenic; Toxic for reproduction
27	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	ND	0.01	Carcinogenic; Toxic for reproduction
28	Tris(2-chloroethyl) phosphate	115-96-8	204-118-5	ND	0.005	Toxic for reproduction
29	Coal tar pitch, high temperature	65996-93-2	266-028-2	ND	0.01	Carcinogenic, PBT, vPvB
30	Acrylamide	79-06-1	201-173-7	ND	0.005	Carcinogenic; Mutagenic
31	Trichloroethylene	79-01-6	201-167-4	ND	0.005	Carcinogenic
32	Boric acid*	10043-35-3, 11113-50-1	233-139-2 / 234-343-4	ND	0.01	Toxic for reproduction
33	Disodium tetraborate, anhydrous*	1330-43-4 ⁽⁵⁾ , 12179-04-3 ⁽⁶⁾ , 1303-96-4 ⁽⁷⁾	215-540-4	ND	0.01	Toxic for reproduction
34	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	ND	0.01	Toxic for reproduction
35	Sodium chromate*	7775-11-3	231-889-5	ND	0.01	Carcinogenic; Mutagenic; Toxic for reproduction
36	Potassium chromate*	7789-00-6	232-140-5	ND	0.01	Carcinogenic; Mutagenic
37	Ammonium dichromate*	7789-09-5	232-143-1	ND	0.01	Carcinogenic; Mutagenic; Toxic for reproduction
38	Potassium dichromate*	7778-50-9	231-906-6	ND	0.01	Carcinogenic; Mutagenic; Toxic for reproduction
39	Cobalt(II) sulphate*	10124-43-3	233-334-2	ND	0.01	Carcinogenic;



						Toxic for reproduction
40	Cobalt(II) dinitrate*	10141-05-6	233-402-1	ND	0.01	Carcinogenic; Toxic for reproduction
41	Cobalt(II) carbonate*	513-79-1	208-169-4	ND	0.01	Carcinogenic; Toxic for reproduction
42	Cobalt(II) diacetate*	71-48-7	200-755-8	ND	0.01	Carcinogenic; Toxic for reproduction
43	2-Methoxyethanol	109-86-4	203-713-7	ND	0.005	Toxic for reproduction
44	2-Ethoxyethanol	110-80-5	203-804-1	ND	0.005	Toxic for reproduction
45	Chromium trioxide*	1333-82-0	215-607-8	ND	0.01	Carcinogenic; Mutagenic
46	Acid generated from chromium trioxide and their oligomers:					Carcinogenic
	Chromic acid*	7738-94-5	231-801-5	ND	0.01	
	Dichromic acid*	13530-68-2	236-881-5			
	Oligomers of chromic acid and dichromic acid*	-	-			
47	2-Ethoxyethyl acetate	111-15-9	203-839-2	ND	0.005	Toxic for reproduction
48	Strontium Chromate*	7789-06-2	232-142-6	ND	0.01	Carcinogenic
49	1,2-benzenedicarboxylic acid, di-C7-11 branched alkyl ester and linear alkyl ester	68515-42-4	271-084-6	ND	0.005	Toxic for reproduction
50	Hydrazine	302-01-2 7803-57-8	206-114-9	ND	0.005	Carcinogenic
51	1-Methyl-2-pyrrolidone	872-50-4	212-828-1	ND	0.005	Toxic for reproduction
52	1,2,3-trichloropropane	96-18-4	202-486-1	ND	0.005	Toxic for reproduction
53	1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl ester, C7-rich (DIHP)	71888-89-6	276-158-1	ND	0.005	Toxic for reproduction
54	Dichromium tris(chromate)*	24613-89-6	246-356-2	ND	0.01	Carcinogenic
55	Potassium hydroxyoctaoxidizincated i-chromate*	11103-86-9	234-329-8	ND	0.01	Carcinogenic
56	Pentazinc chromate octahydroxide*	49663-84-5	256-418-0	ND	0.01	Carcinogenic
57	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1	ND	0.005	Carcinogenic
58	Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	ND	0.005	Toxic for reproduction
59	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	ND	0.005	Carcinogenic
60	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	205-426-2	ND	0.005	Equivalent level of concern
61	1,2-Dichloroethane	107-06-2	203-458-1	ND	0.005	Carcinogenic
62	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	ND	0.005	Toxic for reproduction

63	Arsenic acid*	7778-39-4	231-901-9	ND	0.01	Carcinogenic
64	Calcium arsenate*	7778-44-1	231-904-5	ND	0.01	Carcinogenic
65	Trilead diarsenate*	3687-31-8	222-979-5	ND	0.01	Carcinogenic; Toxic for reproduction
66	N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4	ND	0.005	Toxic for reproduction
67	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9	ND	0.005	Carcinogenic
68	Phenolphthalein	77-09-8	201-004-7	ND	0.005	Carcinogenic
69	Lead azide, Lead diazide*	13424-46-9	236-542-1	ND	0.01	Toxic for reproduction
70	Lead styphnate*	15245-44-0	239-290-0	ND	0.01	Toxic for reproduction
71	Lead dipicrate*	6477-64-1	229-335-2	ND	0.01	Toxic for reproduction
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	203-977-3	ND	0.005	Toxic for reproduction
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9	ND	0.005	Toxic for reproduction
74	Diboron trioxide*	1303-86-2	215-125-8	ND	0.01	Toxic for reproduction
75	Formamide	75-12-7	200-842-0	ND	0.01	Toxic for reproduction
76	Lead(II) bis(methanesulfonate)*	17570-76-2	401-750-5	ND	0.01	Toxic for reproduction
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione) §	2451-62-9	219-514-3	ND	0.005	Mutagenic
78	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione) §	59653-74-6	423-400-0	ND	0.005	Mutagenic
79	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	202-027-5	ND	0.005	Carcinogenic
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	202-959-2	ND	0.005	Carcinogenic
81	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	208-953-6	ND	0.005	Carcinogenic
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride	2580-56-5	219-943-6	ND	0.005	Carcinogenic

	(C.I. Basic Blue 26)					
83	α,α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	229-851-8	ND	0.01	Carcinogenic
84	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	209-218-2	ND	0.005	Carcinogenic
85	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	214-604-9	ND	0.005	Persistent, bioaccumulative and toxic; very persistent and very bioaccumulative
86	N,N-dimethylformamide; dimethyl formamide	68-12-2	200-679-5	ND	0.005	Toxic for reproduction
87	Methoxy acetic acid	625-45-6	210-894-6	ND	0.005	Toxic for reproduction ; equivalent level of concern
88	Dibutyltin dichloride (DBT) ^{db}	683-18-1	211-670-0	ND	0.01	Toxic for reproduction
89	1,2-Diethoxyethane	629-14-1	211-076-1	ND	0.005	Toxic for reproduction
90	Hexahydro-2-benzofuran-1,3-dione (HHPA), cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7, 13149-00-3, 14166-21-3	201-604-9, 236-086-3, 238-009-9	ND	0.01	Equivalent level of concern
91	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	247-094-1, 243-072-0, 256-356-4, 260-566-1	ND	0.01	Equivalent level of concern
92	4-Nonylphenol, branched and linear - substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof	-	-	ND	0.005	Equivalent level of concern
93	Heptacosafuorotetradecanoic acid	376-06-7	206-803-4	ND	0.005	Very persistent and very bioaccumulative
94	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear +	84777-06-0	284-032-2	ND	0.005	Toxic for reproduction
95	Henicosafuoroundecanoic acid	2058-94-8	218-165-4	ND	0.005	Very persistent and very bioaccumulative

96	N-pentyl-isopentylphthalate (iPnPP) +	776297-69-9	-	ND	0.005	Toxic for reproduction
97	Pentacosfluorotridecanoic acid	72629-94-8	276-745-2	ND	0.005	Very persistent and very bioaccumulative
98	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - covering well-defined substances and UVCB substances, polymers and homologues	-	-	ND	0.005	Equivalent level of concern
99	Tricosfluorododecanoic acid	307-55-1	206-203-2	ND	0.005	Very persistent and very bioaccumulative
100	Lead bis(tetrafluoroborate)*	13814-96-5	237-486-0	ND	0.01	Toxic for reproduction
101	Lead tetroxide (orange lead)*	1314-41-6	215-235-6	ND	0.01	Toxic for reproduction
102	Diethyl sulphate	64-67-5	200-589-6	ND	0.005	Carcinogenic; Mutagenic
103	Dinoseb	88-85-7	201-861-7	ND	0.005	Toxic for reproduction
104	Lead Titanium Zirconium Oxide*	12626-81-2	235-727-4	ND	0.01	Toxic for reproduction
105	Acetic acid, lead salt, basic*	51404-69-4	257-175-3	ND	0.01	Toxic for reproduction
106	Furan	110-00-9	203-727-3	ND	0.01	Carcinogenic
107	N-methylacetamide	79-16-3	201-182-6	ND	0.005	Toxic for reproduction
108	o-Toluidine; 2-Aminotoluene	95-53-4	202-429-0	ND	0.005	Carcinogenic
109	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	421-150-7	ND	0.01	Toxic for reproduction
110	4,4'-oxydianiline and its salts	101-80-4	202-977-0	ND	0.005	Carcinogenic; Mutagenic
111	[Phthalato(2-)]dioxotrilead (Dibasic lead phthalate)*	69011-06-9	273-688-5	ND	0.01	Toxic for reproduction
112	Lead titanium trioxide*	12060-00-3	235-038-9	ND	0.01	Toxic for reproduction
113	Lead oxide sulphate*	12036-76-9	234-853-7	ND	0.01	Toxic for reproduction
114	Lead dinitrate*	10099-74-8	233-245-9	ND	0.01	Toxic for reproduction
115	4-Aminoazobenzene; 4-Phenylazoaniline	60-09-3	200-453-6	ND	0.005	Carcinogenic
116	Lead cyanamidate*	20837-86-9	244-073-9	ND	0.01	Toxic for reproduction
117	Tetralead trioxide sulphate*	12202-17-4	235-380-9	ND	0.01	Toxic for reproduction
118	4-methyl-m-phenylenediamine (2,4-toluene-diamine)	95-80-7	202-453-1	ND	0.005	Carcinogenic
119	Pyrochlore, antimony lead yellow*	8012-00-8	232-382-1	ND	0.01	Toxic for reproduction
120	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	215-290-6	ND	0.01	Toxic for reproduction
121	Dimethyl sulphate	77-78-1	201-058-1	ND	0.005	Carcinogenic
122	Dioxobis(stearato)trilead*	12578-12-0	235-702-8	ND	0.01	Toxic for reproduction
123	Silicic acid, barium salt, lead-doped*	68784-75-8	272-271-5	ND	0.01	Toxic for reproduction
124	Biphenyl-4-ylamine	92-67-1	202-177-1	ND	0.005	Carcinogenic
125	Lead oxide (lead monoxide)*	1317-36-8	215-267-0	ND	0.01	Toxic for reproduction
126	Pentalead tetraoxide	12065-90-6	235-067-7	ND	0.01	Toxic for reproduction

	sulphate*					
127	Propylene oxide; 1,2-epoxypropane; methyloxirane	75-56-9	200-879-2	ND	0.01	Carcinogenic; Mutagenic
128	Silicic acid, lead salt*	11120-22-2	234-363-3	ND	0.01	Toxic for reproduction
129	Trilead dioxide phosphonate*	12141-20-7	235-252-2	ND	0.01	Toxic for reproduction
130	o-aminoazotoluene	97-56-3	202-591-2	ND	0.005	Carcinogenic
131	1-bromopropane	106-94-5	203-445-0	ND	0.01	Toxic for reproduction
132	6-methoxy-m-toluidine (p- cresidine)	120-71-8	204-419-1	ND	0.005	Carcinogenic
133	4,4'-methylenedi-o- toluidine	838-88-0	212-658-8	ND	0.005	Carcinogenic
134	Tetraethyllead*	78-00-2	201-075-4	ND	0.01	Toxic for reproduction
135	Sulfurous acid, lead salt, dibasic*	62229-08-7	263-467-1	ND	0.01	Toxic for reproduction
136	Fatty acids, C16-18, lead salts*	91031-62-8	292-966-7	ND	0.01	Toxic for reproduction
137	Diisopentylphthalate +	605-50-5	210-088-4	ND	0.005	Toxic for reproduction
138	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8	ND	0.01	Equivalent level of concern
139	Cadmium*	7440-43-9	231-152-8	ND	0.01	Carcinogenic; Equivalent level of concern
140	Cadmium oxide*	1306-19-0	215-146-2	ND	0.01	Carcinogenic; Equivalent level of concern
141	Dipentyl phthalate (DPP) +	131-18-0	205-017-9	ND	0.005	Toxic for reproduction
142	4-Nonylphenol, branched and linear, ethoxylated <i>[substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well- defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]</i>	-	-	ND	0.005	Equivalent level of concern
143	Ammonium pentadecafluorooctanoate (APFO) †	3825-26-1	223-320-4	ND	0.005	Toxic for reproduction; PBT
144	Pentadecafluorooctanoic acid (PFOA) †	335-67-1	206-397-9	ND	0.005	Toxic for reproduction; PBT
145	Cadmium sulphide*	1306-23-6	215-147-8	ND	0.01	Carcinogenic; Equivalent level of concern
146	Dihexyl phthalate	84-75-3	201-559-5	ND	0.005	Toxic for reproduction
147	Disodium 3,3'-[[1,1'- biphenyl]-4,4'- diylbis(azo)]bis(4- aminonaphthalene-1- sulphonate) (C.I. Direct Red 28)	573-58-0	209-358-4	ND	0.005	Carcinogenic

148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	217-710-3	ND	0.005	Carcinogenic
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	202-506-9	ND	0.005	Toxic for reproduction
150	Lead di(acetate)*	301-04-2	206-104-4	ND	0.01	Toxic for reproduction
151	Trixylyl phosphate	25155-23-1	246-677-8	ND	0.005	Toxic for reproduction
152	Cadmium chloride*	10108-64-2	233-296-7	ND	0.01	Carcinogenic; Mutagenic; Toxic for Reproduction; Equivalent level of concern having probable serious effects to human health
153	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear ⁺⁺	68515-50-4	271-093-5	ND	0.005	Toxic for reproduction
154	Sodium peroxometaborate*	7632-04-4	231-556-4	ND	0.01	Toxic for reproduction
155	Sodium perborate; perboric acid, sodium salt*	-	239-172-9; 234-390-0	ND	0.01	Toxic for reproduction
156	Cadmium fluoride *	7790-79-6	232-222-0	ND	0.01	Carcinogenic; Mutagenic; Toxic for Reproduction; Equivalent level of concern having probable serious effects to human health
157	Cadmium sulphate *	10124-36-4; 31119-53-6	233-331-6	ND	0.01	Carcinogenic; Mutagenic; Toxic for Reproduction; Equivalent level of concern having probable serious effects to human health
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	223-346-6	ND	0.005	PBT; vPvB
159	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	247-384-8	ND	0.005	PBT; vPvB

160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) ^{db}	15571-58-1	239-622-4	ND	0.01	Toxic for Reproduction
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE) ^{db}	-	-	ND	0.01	Toxic for Reproduction
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5; 68648-93-1	271-094-0; 272-013-1	ND	0.01	Toxic for reproduction
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	-	ND	0.01	vPvB
164	1,3-propanesultone	1120-71-4	214-317-9	ND	0.005	Carcinogenic
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	223-383-8	ND	0.005	vPvB
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	253-037-1	ND	0.005	vPvB
167	Nitrobenzene	98-95-3	202-716-0	ND	0.005	Toxic for reproduction
168	Perfluorononan-1-oic acid and its sodium and ammonium salts	375-95-1; 21049-39-8; 4149-60-4	206-801-3	ND	0.005	Toxic for reproduction; PBT
169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	200-028-5	ND	0.005	Carcinogenic; Mutagenic; Toxic for Reproduction; PBT; vPvB



170	4,4'-isopropylidenediphenol (bisphenol A; BPA)	80-05-7	201-245-8	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to human health & environment
171	4-Heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof] (4-Hpbl)	-	-	ND	0.005	Equivalent level of concern having probable serious effects to the environment
172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3830-45-3, 335-76-2, 3108-42-7	-, 206-400-3, 221-470-5	ND	0.005	Toxic for reproduction; PBT
173	p-(1,1-dimethylpropyl)phenol (PTAP)	80-46-6	201-280-9	ND	0.005	Equivalent level of concern having probable serious effects to the environment
174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	-	-	ND	0.005	vPvB
175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo [12.2.1.16,9.02,13.05,10] octadeca-7,15-diene ("Dechlorane Plus"™) [covering any of its individual anti- and syn-isomers or any combination thereof]	-	-	ND	0.005	vPvB
176	Benz[a]anthracene	56-55-3	200-280-6	ND	0.005	Carcinogenic; PBT; vPvB
177	Cadmium nitrate	10325-94-7	233-710-6	ND	0.005	Carcinogenic; Mutagenic; Equivalent level of concern having probable serious effects to human health
178	Cadmium carbonate	513-78-0	208-168-9	ND	0.005	Carcinogenic; Mutagenic; Equivalent level of concern having probable serious effects to human health
179	Cadmium hydroxide	21041-95-2	244-168-5	ND	0.005	Carcinogenic; Mutagenic; Equivalent level of concern having



						probable serious effects to human health
180	Chrysene	218-01-9	205-923-4	ND	0.005	Carcinogenic; PBT; vPvB
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear]	-	-	ND	0.005	Equivalent level of concern having probable serious effects to the environment
182	Octamethylcyclotetrasiloxane (D4)	556-67-2	209-136-7	ND	0.005	PBT; vPvB
183	Decamethylcyclopentasiloxane (D5)	541-02-6	208-764-9	ND	0.005	PBT; vPvB
184	Dodecamethylcyclohexasiloxane (D6)	540-97-6	208-762-8	ND	0.005	PBT; vPvB
185	Lead	7439-92-1	231-100-4	ND	0.005	Toxic for reproduction
186	Disodium octaborate	12008-41-2	234-541-0	ND	0.005	Toxic for reproduction
187	Benzo[ghi]perylene	191-24-2	205-883-8	ND	0.005	PBT; vPvB
188	Terphenyl hydrogenated	61788-32-7	262-967-7	ND	0.005	vPvB
189	Ethylenediamine (EDA)	107-15-3	203-468-6	ND	0.005	Equivalent level of concern having probable serious effects to human health
190	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (TMA)	552-30-7	209-008-0	ND	0.005	Equivalent level of concern having probable serious effects to human health
191	Dicyclohexyl phthalate (DCHP)	84-61-7	201-545-9	ND	0.005	Toxic for reproduction; Equivalent level of concern having probable serious effects to human health
192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	401-720-1	ND	0.005	Toxic for reproduction
193	Benzo[k]fluoranthene	207-08-9	205-916-6	ND	0.005	Carcinogenic; PBT; vPvB
194	Fluoranthene	206-44-0	205-912-4	ND	0.005	PBT; vPvB
195	Phenanthrene	85-01-8	201-581-5	ND	0.005	vPvB

196	Pyrene	129-00-0	204-927-3	ND	0.005	PBT; vPvB
197	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor; 3-BC)	15087-24-8	239-139-9	ND	0.005	Equivalent level of concern having probable serious effects to the environment
198	2-methoxyethyl acetate	110-49-6	203-772-9	ND	0.005	Toxic for reproduction
199	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with \geq 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	-	ND	0.005	Equivalent level of concern having probable serious effects to the environment
200	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	-	ND	0.005	Equivalent level of concern having probable serious effects on the environment & human health
201	4-tert-butylphenol (PTBP)	98-54-4	202-679-0	ND	0.005	Equivalent level of concern having probable serious effects to the environment
202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	119313-12-1	404-360-3	ND	0.005	Toxic for reproduction
203	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	400-600-6	ND	0.005	Toxic for reproduction
204	Diisohexyl phthalate	71850-09-4	276-090-2	ND	0.005	Toxic for reproduction
205	Perfluorobutane sulfonic acid (PFBS) and its salts	-	-	ND	0.005	Equivalent level of concern having probable serious effects on the environment and human health
206	1-vinylimidazole	1072-63-5	214-012-0	ND	0.005	Toxic for reproduction
207	2-methylimidazole	693-98-1	211-765-7	ND	0.005	Toxic for reproduction
208	Butyl 4-hydroxybenzoate (Butylparaben)	94-26-8	202-318-7	ND	0.005	Equivalent level of concern having probable serious effects on the human health
209	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	245-152-0	ND	0.01	Toxic for reproduction
210	bis(2-(2-methoxyethoxy)ethyl) ether	143-24-8	205-594-7	ND	0.01	Toxic for reproduction
211	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-	-	ND	0.01	Toxic for reproduction

212	1,4-dioxane	123-91-1	204-661-8	ND	0.01	Carcinogenic; Equivalent level of concern having probable serious effects on the environment & human health
213	2,2-bis(bromomethyl)propane 1,3-diol (BMP) 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA) 2,3-dibromo-1-propanol (2,3-DBPA)	3296-90-0, 36483-57-5, 1522-92-5, 96-13-9	221-967-7, 253-057-0, 202-480-9	ND	0.01	Carcinogenic
214	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	-	-	ND	0.01	Toxic for reproduction
215	4,4'-(1-methylpropylidene)bisphe nol; (bisphenol B)	77-40-7	201-025-1	ND	0.01	Equivalent level of concern having probable serious effects on the environment & human health
216	Glutaral	111-30-8	203-856-5	ND	0.01	Equivalent level of concern having probable serious effects on human health
217	Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17]	-	-	ND	0.01	PBT; vPvB
218	Orthoboric acid, sodium salt	13840-56-7	237-560-2	ND	0.01	Toxic for reproduction
219	Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP)	-	-	ND	0.01	Toxic for reproduction; Equivalent level of concern having probable serious effects on the environment & human health
220	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)	119-47-1	204-327-1	ND	0.01	Toxic for reproduction
221	tris(2-methoxyethoxy) vinylsilane	1067-53-4	213-934-0	ND	0.01	Toxic for reproduction
222	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-	-	-	ND	0.01	Equivalent level of concern having probable serious effects on human health



	MBC)					
223	S-(tricyclo[5.2.1.0 ^{2,6}] deca-3-en-8(or 9)-yl) O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	255881-94-8	401-850-9	ND	0.01	PBT
224	N-(hydroxymethyl) acrylamide	924-42-5	213-103-2	ND	0.01	Carcinogenic; Mutagenic

- (1) CAS no. 7789-12-0 refers to sodium dichromate dihydrate
(2) CAS no. 10588-01-9 refers to anhydrous sodium dichromate
(3) CAS no. 3194-55-6 refers to a specific HBCDD - 1,2,5,6,9,10-hexabromocyclododecane
(4) CAS no. 25637-99-4 refers to unspecific HBCDD isomer composition
(5) CAS no. 1330-43-4 refers to disodium tetraborate, anhydrous
(6) CAS no. 12179-04-3 refers to sodium tetraborate, pentahydrate
(7) CAS no. 1303-96-4 refers to sodium tetraborate, decahydrate

Method: Analysis is based on GC, LC, IC, ICP, with various detection techniques and UV.

Remark:

1. PBT = Persistent, bio accumulative and toxic as defined in Regulation (EC) No 1907/2006
2. vPvB = Very persistent and very bio accumulative as defined in Regulation (EC) No 1907/2006
3. ND = Not Detected
4. *Result is based on the heavy metal or inorganic element concentration. Due to the limit of the analytical technology available, any further investigation is not feasible. The client is strongly advised to review the chemical formulation to ascertain.
5. **Result is identified by tributyltin (TBT). Due to the limit of the analytical technology available, any further investigation is not feasible. The client is strongly advised to review the chemical formulation to ascertain.
6. [§]TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione) and β -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione) are reported as a mixture.
7. ^aRefer to Aluminosilicate, Refractory Ceramic Fibres fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm) c) alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight.
8. ^bRefer to Zirconia Aluminosilicate, Refractory Ceramic Fibres fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (μm). c) alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight.
9. ⁺[1,2-Benzenedicarboxylic acid, dipentylester, branched and linear] is a mixture of phthalates contains DPP, DIPP and N-pentyl-isopentylphthalate.
10. [≠]PFOA and APFO are reported together. The result is based on PFOA concentration. Due to the limit of the analytical technology available, any further investigation is not feasible. The client is strongly advised to review the chemical formulation to ascertain.
11. ⁺⁺[1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear] is a mixture of phthalates contains dihexyl phthalate.
12. [♠]Result is based on the tin metal concentration, and further confirmation for checking DBT, DOTE & MOTE concentration.
13. The result(s) is(are) combined with (5222)335-0006 dated December 12, 2022.

SVHC based on Proposal for Identification of Substances of Very High Concern published for Commenting on Sep 02, 2022

No.	Substance name	CAS No.	EC No.	Result, %	Detection Limit, %	Basis for identification as a SVHC
				4^		
1	1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]	37853-59-1	253-692-3	ND	0.01	vPvB
2	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	79-94-7	201-236-9	ND	0.01	Carcinogenic
3	4,4'-sulphonyldiphenol	80-09-1	201-250-5	ND	0.01	Toxic for reproduction; Equivalent level of concern having probable serious effects on the environment & human health
4	Barium diboron tetraoxide	13701-59-2	237-222-4	ND	0.01	Toxic for reproduction
5	Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof	-	-	ND	0.01	vPvB
6	Isobutyl 4-hydroxybenzoate	4247-02-3	224-208-8	ND	0.01	Equivalent level of concern having probable serious effects on human health
7	Melamine	108-78-1	203-615-4	ND	0.01	Equivalent level of concern having probable serious effects on the environment & human health
8	Perfluoroheptanoic acid and its salts	-	-	ND	0.01	Toxic for reproduction; PBT; vPvB; Equivalent level of concern having probable serious effects on the environment & human health
9	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine	-	473-390-7	ND	0.01	vPvB

Method: Analysis is based on GC, LC, IC, ICP, with various detection techniques and UV.

Remark:

1. ND = Not Detected
2. If the article contains a material type whose weight is <0.1% of the total article weight, this material type is ignored for testing.

**Note:**

1. The limit of 0.1% (w/w) applies to an article. The results were calculated assuming as the submitted sample was an article. However, the results may not be applicable if the intended use of the sample is a substance or mixture. According to REACH, definition of an article, substance and mixture are:
 - i. Article - An object during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition
 - ii. Substance - A chemical element and its compound in the natural state or obtained by any manufacturing process
 - iii. Mixture (Previously known as "Preparation") - A mixture or solution composed of two or more substances
2. In accordance of Article 7 of Regulation (EC) No. 1907/2006 (REACH regulation) – Registration and notification of substances in articles, any producer or importer of articles shall notify ECHA, if a substance meets in criteria in Article 57 and is identified in accordance with Article 59(1), if both (1) the substance is present in those articles in quantities totalling over 1 tonne per producer or importer per year & (2) the substance is present in those articles above a concentration of 0.1% weight by weight (w/w) are met. The information to be notified shall include (a) identity and contact details of the producer or importer, (b) the registration numbers, (c) the identity of the substance and (d) the classification of the substance, (e) a brief description of the use of the substance and (f) the tonnage range of the substance.
3. In accordance of Article 33 of Regulation (EC) No. 1907/2006 (REACH regulation) – Duty to communicate information on substances in articles, any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance. On request by a consumer the relevant information shall be provided by any supplier of an article free of charge, within 45 days of receipt of the request.

The above result(s) marked with ^ is(are) transferred from (5222)335-0006 dated December 12, 2022.

END

APPENDIX

List of Phthalates [European Parliament and Council Directive 2011/65/EU] :					
No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Butyl benzyl phthalate (BBP)	85-68-7	3	Di-2-ethylhexyl phthalate (Bis (2-ethylhexyl) phthalate) (DEHP)	117-81-7
2	Di-n-butyl phthalate (Dibutyl phthalate) (DBP)	84-74-2	4	Di-iso-butyl phthalate (Diisobutyl phthalate) (DIBP)	84-69-5
CAS-No. = Chemical Abstracts Service registry number					

List of Phthalates [U. S. 16 CFR 1307]:					
No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Butyl benzyl phthalate (BBP)	85-68-7	5	Di-iso-butyl phthalate (DIBP)	84-69-5
2	Dibutyl phthalate (DBP)	84-74-2	6	Di-n-pentyl phthalate (DnPP or DPENP)	131-18-0
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	7	Di-n-hexyl phthalate (DnHP or DHEXP)	84-75-3
4	Di-iso-nonyl phthalate (DINP)	28553-12-0	8	Di-cyclohexyl phthalate (DCHP)	84-61-7
CAS-No. = Chemical Abstracts Service registry number					

List of Phthalates:					
No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Butyl benzyl phthalate (BBP)	85-68-7	5	Di-iso-butyl phthalate (DIBP)	84-69-5
2	Dibutyl phthalate (DBP)	84-74-2	6	Di-n-pentyl phthalate (DnPP or DPENP)	131-18-0
3	Di-2-ethylhexyl phthalate (DEHP)	117-81-7	7	Di-n-hexyl phthalate (DnHP or DHEXP)	84-75-3
4	Di-iso-nonyl phthalate (DINP)	28553-12-0	8	Di-cyclohexyl phthalate (DCHP)	84-61-7
CAS-No. = Chemical Abstracts Service registry number					