CONSUMER PRODUCTS SERVICES DIVISION

HERAEUS LTD.

Technical Report: **(2220)231-0024** Initial Report Date: August 31, 2020
Date Received: August 18, 2020

TSANG KAM LUNG, ANDY
HERAEUS LTD.
30 ON CHUEN STREET, ON LOK TSUEN, FANLING, N.T.,
HONG KONG, CHINA

Sample Description:	POTASSIUM SILVER CYANIDE (PSC)		
Manufacturer:	HERAEUS LTD.	PO No.:	/
Buyer:	/	Model/Style Number	5105182 (1000 G)
Country of Origin:	HONG KONG	Country of Destination:	/
Color:	WHITE	SKU No.:	/
Test Requested:	REFER THE SUMMARY OF TEST RESULTS	Material:	/
Product End Use		Lot No.:	/

SUMMARY OF TEST RESULTS

TEST REQUESTED	**CONCLUSION**	REMARK
Total Antimony Content	-	Refer the Page 4
Total Beryllium Content	-	Refer the Page 4
Halogen (fluorine, chlorine, bromine, iodine) Content	-	Refer the Page 4
Perfluorooctane Sulphonates (PFOS) and Perfluorooctanoic Acid (PFOA) Content	-	Refer the Page 5
Phthalate Test	-	Refer the Page 5
Flame Retardant Content	-	Refer the Page 6
Heavy Metals, Flame Retardants 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 & As Applicant's requirement	PASS	-

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Sample Description Assigned by Laboratory:

Test Item	Sample Description
I001	White powder

Note:
g = gram(s)
mcg = microgram(s)
mg/kg = milligram per kilogram
mg/L = milligram per litre
g/kg = gram(s) per kilogram
MDL = Method Detection Limit
ND = Not Detected (< MDL)
EX = Exempted

% = percentage
1 mg/kg = 0.0001%
"<" = less than
">" = Greater than
Req. = Requirement
"-" = Not Regulated
NA = Not applicable

TEST RESULT

Total Antimony Content

Test methods: The sample is comminuted and digested with acid mixtures, then analyzed by ICP-AES technique

Parameter	Unit	MDL	Result
			I001
Antimony (Sb)	mg/kg	10	ND

Total Beryllium Content

Test methods: The sample is comminuted and digested with acid mixtures, then analyzed by ICP-AES technique

Parameter	Unit	MDL	Result
			I001
Beryllium (Be)	mg/kg	10	ND

Halogen (fluorine, chlorine, bromine, iodine) Content

Test Method: Sample was firstly combusted and absorbed with solvent, then analyzed by ion chromatography (Reference to EN14582:2016).

Parameter	Unit	MDL	Result
			I001
Fluorine	mg/kg	100	ND
Chlorine	mg/kg	50	ND
Bromine	mg/kg	50	ND
Iodine	mg/kg	100	ND

TEST RESULT

Perfluorooctane Sulphonates (PFOS) and Perfluorooctanoic Acid (PFOA) Content

Test Method: Organic solvent extraction and analysis by Liquid Chromatography Tandem Mass Spectrometry (LC-MS-MS).

Parameter	Unit	MDL	Result
			I001
Perfluorooctane Sulphonates (PFOS)	mg/kg	0.01	ND
Perfluorooctanoic Acid (PFOA)	mg/kg	0.01	ND

Phthalate Content

Test Method: Extraction with solvent, analysed by Gas Chromatography Mass Spectrometer.

Parameter	CAS No.	Unit	MDL	Result
				I001
Dibutyl phthalate (DBP)	84-74-2	%	0.005	ND
Butyl benzyl phthalate (BBP)	85-68-7	%	0.005	ND
Di-2-ethylhexyl phthalate (DEHP)	117-81-7	%	0.005	ND
Di-n-octyl phthalate (DNOP)	117-84-0	%	0.005	ND
Di-iso-decyl phthalate (DIDP)	26761-40-0	%	0.005	ND
Di-iso-nonyl phthalate (DINP)	28553-12-0	%	0.005	ND
Diisobuty phthalate (DIBP)	84-69-5	%	0.005	ND

TEST RESULT

Flame Retardant Content

Test Method: All flame retardants are extracted with organic solvents and analyzed by GC-MS, LC-MS, HS-GC-MS & LC-DAD

Client's Limit:	/

Tested Item(s)	**Result**			**Conclusion**
	Detected Analyte(s)	**Conc.**	**Unit**	
I001	ND	ND	mg/kg	**DATA**

Note / Key :

ND = Not detected ">" = More than Conc. = Concentration
mg/kg = milligram per kilogram

The detected flame retardant and its value will be shown in above table, the else flame retardant not shown in the table will be regarded as ND. When all flame retardants for test are not detected, it will be shown ND.

Remark:

The list of flame retardant is summarized in table of Appendix.

APPENDIX

List of Flame Retardant:				
No.	**Name of Analytes**	**Abbr.**	**CAS No.**	**Detection Limit(mg/kg)**
1	Hexabromocyclododecane	HBCDD	3194-55-6	5

TEST RESULT

Heavy Metals, Flame Retardants 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 & As Applicant's requirement

Test Method : See Appendix.

-	Unit	MDL	Maximum Allowable Limit (Req.)	Result
Test Item	-	-	-	I001
Parameter	-	-	-	-
Lead (Pb)	mg/kg	2	1000	3.54
Cadmium (Cd)	mg/kg	2	100	ND
Mercury (Hg)	mg/kg	2	1000	ND
Chromium VI (Cr VI)	mg/kg	8	1000	ND
MonoBB	mg/kg	5		ND
DiBB	mg/kg	5		ND
TriBB	mg/kg	5		ND
TetraBB	mg/kg	5		ND
PentaBB	mg/kg	5		ND
HexaBB	mg/kg	5		ND
HeptaBB	mg/kg	5		ND
OctaBB	mg/kg	5		ND
NonaBB	mg/kg	5		ND
DecaBB	mg/kg	5		ND
Sum of PBBs	mg/kg	-	1000	ND
MonoBDE	mg/kg	5		ND
DiBDE	mg/kg	5		ND
TriBDE	mg/kg	5		ND
TetraBDE	mg/kg	5		ND
PentaBDE	mg/kg	5		ND
HexaBDE	mg/kg	5		ND
HeptaBDE	mg/kg	5		ND
OctaBDE	mg/kg	5		ND
NonaBDE	mg/kg	5		ND
DecaBDE	mg/kg	5		ND
Sum of PBDEs	mg/kg	-	1000	ND
Conclusion	-	-	-	**PASS**

Remark:

- The list of analytes is summarized in table of Appendix.
- Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
- 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 IEC 62321-5: 2013.
2	Cadmium (Cd)	
3	Mercury (Hg)	With reference to IEC 62321-4: 2013+AMD1: 2017 CSV.
4	Chromium VI (Cr VI)	Metal: With reference to IEC 62321-7-1:2015. Polymers & Electronics: With reference to IEC 62321-7-2: 2017.
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 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)	

END

SUBMITTED SAMPLE IMAGE