

Merck KGaA, Darmstadt, Germany

March 15, 2019

To whom it may concern

Statement regarding Directive 2011/65/EU (EU RoHS 2.0)

Dear Sir or Madam

We herewith confirm according to the product recipe, that the Optipur® products as listed in attachment 1, supplied by Merck KGaA and its affiliated companies, do not contain any of the substances as listed in attachment 2 referring to Annex II of the Directive 2011/65/EU "Restriction of hazardous substances in electrical and electronic equipment" above the maximum concentrations.

Product recipe means the deliberate use in the formulation of a product where its continued presence is required to provide a specific characteristic, appearance or quality. This information is based on the currently available data and made to the best of our knowledge. The information might be subject to change.

Kind regards,

Merck KGaA

i.A.



Reiner Neumann
Product Manager
Performance Materials

i.A.



Dr. Matthias Bischof
Manager Regulatory Affairs
Performance Materials

Attachment 1: RoHS compliant Optipur® products

Attachment 2: Substances restricted in Directive 2011/65/EU



EMD Performance Materials is a business of Merck KGaA, Darmstadt, Germany.

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Merck KGaA, Darmstadt, Germany

Frankfurter Str. 250
64293 Darmstadt
Tel. +49 6151 72 21471
matthias.bischof
@emdgroup.com

Attachment 1: RoHS compliant Optipur® products

<u>Substance</u>	<u>Formula</u>	<u>Purity</u>	<u>Package Sizes</u>	<u>Item No.</u>
Barium(II) fluoride	BaF ₂	99.995%	1 kg, 50 kg	101705
Cerium(III) bromide	CeBr ₃	99.99%	1 kg, 2 kg	189313
Cerium(III) chloride	CeCl ₃	99.99+%	100 g, 1 kg	189315
Cesium bromide	CsBr	99.999%		189316
Cesium chloride	CsCl	99.999%		189317
Cesium iodide	CsI	99.999%	20 kg	189318
Cesium iodide	CsI	99.999%	100 g, 1 kg	189319
Cesium iodide:thallium(I) iodide	CsI:TII (0.8%)	99.99+%		
Cesium yttrium chloride	Cs ₂ YCl ₅	99.99+%	1 kg	189769
Cesium yttrium chloride	CsYCl ₄	99.99+%	1 kg	189770
Copper(I) iodide	CuI	99.99%	100 g, 1 kg	189771
Europium(II) iodide	EuI ₂	99.99%	100 g	189324
Europium(III) fluoride	EuF ₃	99.99+%		189323
Hafnium(IV) bromide	HfBr ₄	99.99%		189328
Hafnium(IV) chloride	HfCl ₄	99.9%	100 g, 500g	189218
Indium(I) iodide	InI	99.999%	10 g, 100 g	189702
Lanthanum(III) bromide	LaBr ₃	99.99+%	1 kg	189703
Lanthanum(III) chloride	LaCl ₃	99.99+%	100 g, 1 kg	189704
Lithium fluoride	LiF	99.95%	2.5 kg	105689
⁶Lithium bromide	⁶ LiBr	99.99%	100 g, 1 kg	189302
⁶Lithium chloride	⁶ LiCl	99.99+%	100 g, 1 kg	189303
⁶Lithium fluoride	⁶ LiF	99.99%	100 g, 1 kg	189304
⁶Lithium iodide	⁶ LiI	99.99+%	1 kg	189305
⁷Lithium chloride	⁷ LiCl	99.99%		189306
Magnesium(II) fluoride (pieces)	MgF ₂	99.9%	25 kg, 50 kg	105821
Potassium bromide	KBr	99.95%	100 g	189777
Potassium dihydrogen phosphate	KH ₂ PO ₄	99.9%	25 kg	104872
Sodium iodide	NaI	99.995%	5 kg, 50 kg	139559
Sodium iodide	NaI	99.999%	5 kg	189332
Sodium iodide	NaI	99.999%		189334
Sodium iodide astrograde	NaI	99.999%	2 kg	189333
Strontium bromide	SrBr ₂	99.999%		189785
Strontium iodide	SrI ₂	99.99+%	100 g	189348
Strontium iodide:europium(II) iodide	SrI ₂ :EuI ₂ (1%)	99.99+%		189788
Strontium iodide:europium(II) iodide	SrI ₂ :EuI ₂ (3%)	99.99+%		189350
Thallium bromide	TlBr	99.999%	100 g, 1 kg	189356



Thallium chloride	TlCl	99.999%	100 g, 1kg	189603
Thallium(I) bromide	TlBr	99.999%	100 g, 1 kg	189357
Thallium(I) chloride	TlCl	99.999%		189604
Thallium(I) iodide powder	TlI	99.999%	100 g, 1 kg	189358
Thallium(I) iodide beads	TlI	99.999%	100 g, 1 kg	189359
Yttrium(III) chloride	YCl ₃	99.99%	100 g	189365
Zinc chloride	ZnCl ₂	99.99%		189367



Attachment 2: Restricted substances listed in Annex II of the Directive 2011/65/EU and maximum concentration values tolerated by weight in homogeneous materials.

Cadmium and its compounds	100 ppm
Lead and its compounds	1000 ppm
Mercury and its compounds	1000 ppm
Hexavalent chromium and its compounds	1000 ppm
Polybrominated biphenyls (PBBs)	1000 ppm
Polybrominated diphenyl ethers (PBDEs)	1000 ppm
Bis(2-ethylhexyl) phthalate (DEHP)	1000 ppm
Butyl benzyl phthalate (BBP)	1000 ppm
Dibutyl phthalate (DBP)	1000 ppm
Diisobutyl phthalate (DIBP)	1000 ppm

