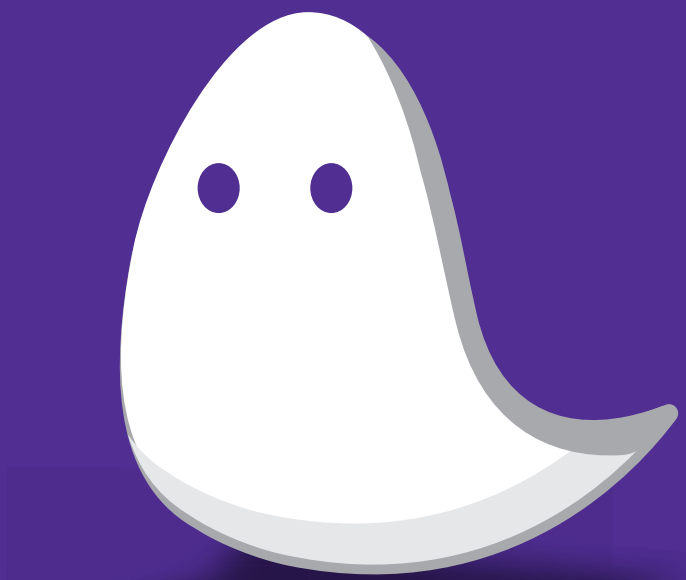
optipur®

EMD Performance Materials

CAN THE INVISIBLE BE VISIBLE?

Simplifying identification with **Optipur®** – Grow your single crystals for scintillators and optical applications with our high-performance materials



SEE AND ...

The invisible can indeed become visible. As your solution provider, we at EMD Performance Materials had a clear objective: to compile a comprehensive portfolio of Optipur® single crystal growth materials that meets all your requirements. Our vision has become a reality. Besides widely used materials such as sodium iodide and cesium iodide, we now offer an extensive range of inorganic compounds. And not only that: the unseen but exceptionally high standard of these materials becomes visible in the quality of your crystals.

Optipur® materials are inorganic compounds, primarily metal halides, and available as anhydrous powders, beads or pieces for immediate usability and easy handling. They are of the highest purity, and specifically suited for single crystals used in demanding optical applications or scintillators, for example medical imaging and radiation detection.

Advantages at a glance

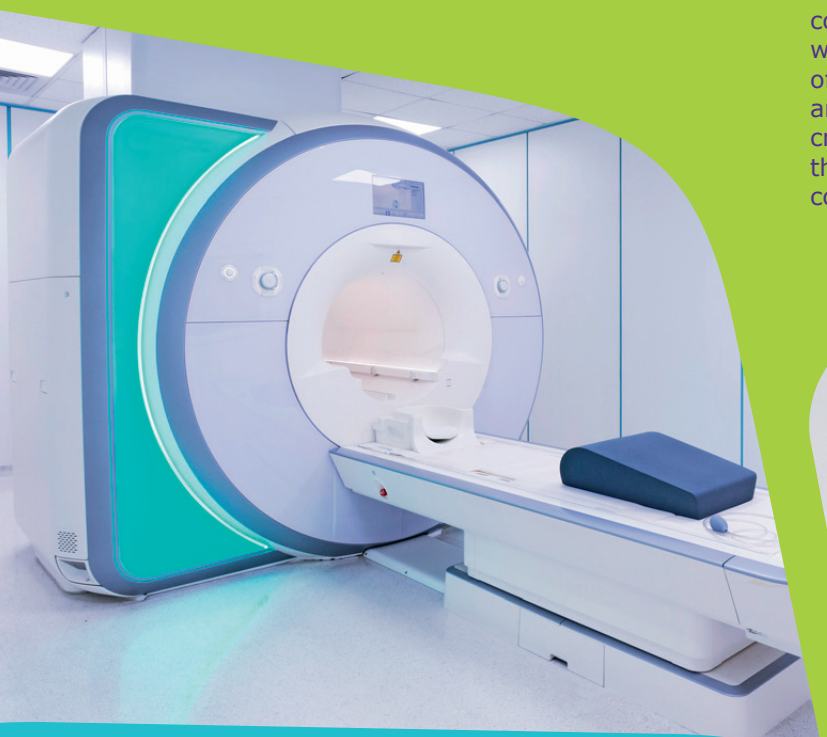
- Highest purity
- Reliable supply chain
- Global customer proximity
- Batch-to-batch reproducibility
- Large quantities made to spec
- ISO-certified production
- Seamless documentation
- Special packaging for hygroscopic materials

Besides our anhydrous powders, we are one of the few companies in the world capable of offering anhydrous beads. These materials have a proven 30-year track record for application in many products that rely on high-end material functionality. Our Optipur® beads stand up to strict processing requirements.

Special features of beads

- Free-flowing; reduced clogging probability
- Non-dusting
- <100 ppm trace moisture
- Low oxide contaminations
- Reduced oxygen and other adsorptions due to smallest possible surface area
- Easy to handle
- No preprocessing necessary
- Packaged in ampoules for safe use in large volumes and easy dosing

For today's most advanced detectors, which often contain composite and/or multipurpose scintillators, we offer fluorides as dopants, all ^{6}Li-halides and a set of pre-mixed or pre-doped beads. These beads provide an ideal starting point for state-of-the-art mixed crystals by combining all the advantages of beads with the convenience of a smaller number of starting components and thus an increase in process reliability.



Typical applications

Medical imaging, radiation detection, UV/IR optics, semiconductor fabrication, advanced optoelectronics, security screening and nuclear energy applications

OUR OPTIPUR® PRODUCTS

KEY MATERIALS

ANHYDROUS POWDERS

Metal	Substance	Formula	Purity	Package sizes	Item no.
Cs	Cesium iodide	CsI	99.999%	20 kg	1.89318
Na	Sodium iodide	NaI	99.995%	5 kg, 50 kg	1.39559
Tl	Thallium(I) iodide	TlI	99.999%	100 g, 1 kg	1.89358

METAL HALIDE PORTFOLIO

ANHYDROUS POWDERS

Metal	Substance	Formula	Purity	Package sizes	Item no.
Ba	Barium(II) fluoride	BaF_2	99.995%	1 kg, 50 kg	1.01705
Hf	Hafnium(IV) bromide	$HfBr_4$	99.99%		1.89328
Hf	Hafnium(IV) chloride	$HfCl_4$	99.9%	100 g, 500 g	1.89218
K	Potassium bromide	KBr	99.95%	100 g	1.89777
K	Potassium dihydrogen phosphate	KH_2PO_4	99.9%	25 kg	1.04872
Li	Lithium fluoride	LiF	99.95%	2.5 kg	1.05689
Mg	Magnesium(II) fluoride (pieces)	MgF_2	99.9%	25 kg, 50 kg	1.05821
Na	Sodium iodide	NaI	99.999%	5 kg	1.89332
Na	Sodium iodide astrograde	NaI	99.999%	2 kg	1.89333
Pb	Lead(II) fluoride	PbF_2	99.9%	10 kg	1.07386
Tl	Thallium bromide	TlBr	99.999%	100 g, 1 kg	1.89356
Tl	Thallium chloride	TlCl	99.999%	100 g, 1 kg	1.89603

Package sizes listed in the tables are either standard or frequently requested. Inquire about available packaging for products without a package size listing.

Contact us regarding custom compositions, blends, doped materials, custom packaging and particular specifications.

Please inquire about availability and lead times before placing an order since most of our products are made on demand.

ANHYDROUS BEADS

Metal	Substance	Formula	Purity	Package sizes	Item no.
Ce	Cerium(III) bromide	$CeBr_3$	99.99%	1 kg, 2 kg	1.89313
Ce	Cerium(III) chloride	$CeCl_3$	99.99%	100 g, 1 kg	1.89315
Cs	Cesium bromide	CsBr	99.999%		1.89316
Cs	Cesium chloride	CsCl	99.99+%		1.89317
Cs	Cesium iodide	CsI	99.999%	100 g, 1 kg	1.89319
Cu	Copper(I) iodide	CuI	99.99%	100 g, 1 kg	1.89771
Eu	Europium(II) iodide	EuI_2	99.99%	100 g	1.89324
In	Indium(I) iodide	InI	99.999%	10 g, 100 g	1.89702
La	Lanthanum(III) bromide	$LaBr_3$	99.99+%	1 kg	1.89703
La	Lanthanum(III) chloride	$LaCl_3$	99.99+%	100 g, 1 kg	1.89704
Li	^{6}Lithium bromide	^{6}LiBr	99.99%	100 g, 1 kg	1.89302
Li	^{6}Lithium chloride	^{6}LiCl	99.99%	100 g, 1 kg	1.89303
Li	^{6}Lithium iodide	^{6}LiI	99.99+%	1 kg	1.89305
Li	^{7}Lithium chloride	^{7}LiCl	99.99%		1.89306
Na	Sodium iodide	NaI	99.999%		1.89334
Pb	Lead(II) bromide	$PbBr_2$	99.999%		1.89420
Sr	Strontium bromide	$SrBr_2$	99.999%		1.89785
Sr	Strontium iodide	SrI_2	99.99+%	100 g	1.89348
Tl	Thallium(I) bromide	TlBr	99.999%	100 g, 1 kg	1.89357
Tl	Thallium(I) chloride	TlCl	99.999%		1.89604
Tl	Thallium(I) iodide	TlI	99.999%	100 g, 1 kg	1.89359
Y	Yttrium(III) chloride	YCl_3	99.99%	100 g	1.89365
Zn	Zinc chloride	$ZnCl_2$	99.99%		1.89367

SPECIALTIES

Metal	Substance	Formula	Purity	Package sizes	Item no.
Cs:Tl	Cesium iodide:thallium(I) iodide	CsI:TlI (0.8%)	99.99+%		
CsY	Cesium yttrium chloride	Cs_2YCl_5	99.99+%	1 kg	1.89769
CsY	Cesium yttrium chloride	$CsYCl_4$	99.99+%	1 kg	1.89770
Eu	Europium(III) fluoride	EuF_3	99.99+%		1.89323
Li	^{6}Lithium fluoride	^{6}LiF	99.99%	100 g, 1 kg	1.89304
Sr:Eu	Strontium iodide:europium(II) iodide	SrI_2:EuI_2 (1%)	99.99+%		1.89788
Sr:Eu	Strontium iodide:Europium(II) iodide	SrI_2:EuI_2 (3%)	99.99+%		1.89350

BE SEEN

As a producer of high-end single crystals, you require not just first-class materials but also premium-quality service. We deliver. We understand the importance and challenges of your business, and therefore offer customized support. As a DIN/ISO-certified material supplier, we have quality control expertise and provide a seamless documentation flow and standardized CoAs. Allow us to become your one-stop supplier of Optipur® single crystal growth materials; the calibre of our products and services will be seen in your end results.

Services you cannot overlook

- High detection yields and high energy resolution require high purity. We deliver 4 to 5N materials.
- We strictly control the purity of each batch and pay careful attention to impurities that could negatively influence transmission, light scattering, or scintillation efficiency.
- Optipur® materials can be used for RoHS-compliant devices, and are made with certified nonconflict minerals. (Please refer to our website for information regarding RoHS compliance.)
- We maintain external validation of our quality control processes and outcomes.
- We know how to handle, dry and package hygroscopic materials. The materials are thus ready to use, and you will find no water-related lattice distortions in the final crystal.
- Our iodides have a long, positive track record in large area crystal growth and/or thin film deposition. With our high batch-to-batch consistency and strict specification adherence, we essentially guarantee processability.
- We are equipped to supply hundreds of kilos, or even tons, according to spec.
- Our portfolio contains everything you need for the latest developments in inorganic radiation detectors, such as: evaporable CsI, CLYC-precursors, NaI-Astro (for dark matter research), low-background BaF_2, and ^{6}Li-halides.
- We have material expertise and therefore can work with you to improve processes if necessary.
- We also offer technical support concerning the use of our materials and their suitability for your precise requirements.

THE INVISIBLE QUALITY OF OUR MATERIALS BECOMES VISIBLE IN YOUR CRYSTALS!

there is More to explore

"More to explore" is our brand promise. That's because we offer far more than just solutions for optical coatings. We are the creative possibility developer. With inventiveness, expertise and specialty chemicals, we develop valuable functional future-oriented solutions to empower your surfaces and simplify the identification of your products.

Explore more on our website:
moretoexplore.info

Empowering Surfaces

We offer materials
for superior optical and
functional coatings

Simplifying Identification

We provide materials
for durable and secure recognition
and detection

02/2019

Performance Materials
Surface Solutions

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