

Product Information

Lead(II) Fluoride Patinal®

GENERAL INFORMATION

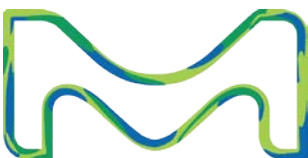
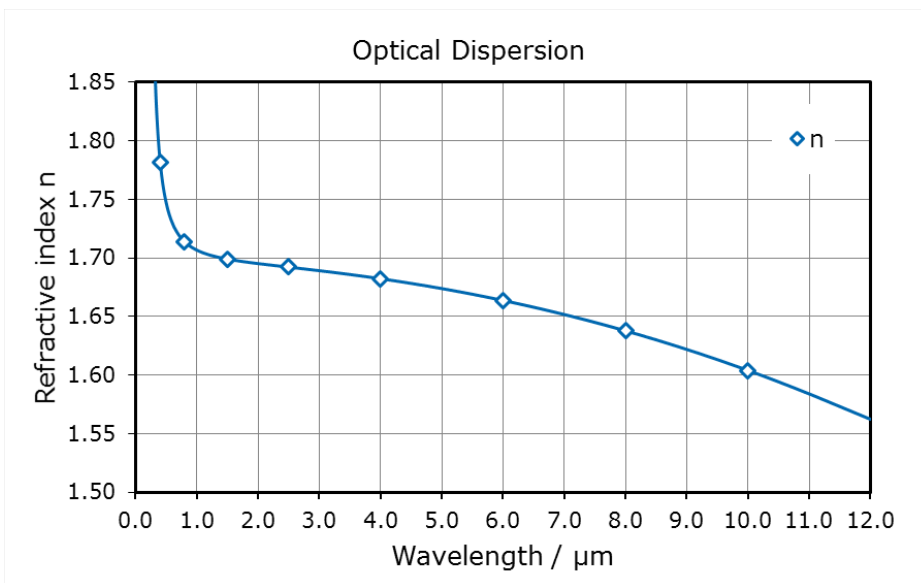
Although less common for optical coatings, PbF_2 can be used for many different interference coatings over a very broad spectral range. Among the fluorides commonly used for optical interference coatings, PbF_2 exhibits the highest refractive index.

AREAS OF APPLICATION

- Interference filters in UV, VIS, IR, multi bandpass filters
- Adhesion layer for chalcogenide glasses

THIN FILM PROPERTIES

Range of Transparency	250 nm – 16 μm
Refractive index	
• at 500 nm	1.75
• at 10 μm	1.60
Thin film stress	Tensile



wavl / μm	0.3	0.5	1.0	3.0	5.0	8.0	10.0	12.0
n	1.89	1.75	1.71	1.69	1.67	1.64	1.60	1.56
k	0.05					0.01	0.02	0.03

NOTES FOR EVAPORATION

Evaporator source	Resistance heated evaporator
Boat	Platinum boats or aluminium oxide crucibles
Evaporation temperature	~ 600 °C
Deposition rate	0.5 – 1 nm/s
Substrate temperature	100 – 300 °C
QCR-settings	Density 8.24 g/cm ³ , z-ratio 0.661

Lead(II) Fluoride Patinal® is evaporated from platinum boats or heated aluminium oxide crucibles. Boats made of molybdenum, tantalum or tungsten cannot be used because of reactions between the melt and boat material, leading to absorption in the optical coatings.



PRODUCTS

Product Code	Description	Purity*	Dimensions
1.07388	Lead Fluoride Granules Patinal®	≥ 99.99 % (4N)	Granules, about 1 – 4 mm

* The purity values are based on the specified trace metals.

Appearance

1.07388	Transparent granules
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SPECIFICATION

Cobalt (Co)	≤ 0.001 %
Copper (Cu)	≤ 0.001 %
Chromium (Cr)	≤ 0.001 %
Iron (Fe)	≤ 0.002 %
Manganese (Mn)	≤ 0.001 %

Sizes

1.07388	Granules 1 - 4 mm ≥ 80 %
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Application test

Each batch has to pass a specific application test assessing its evaporation behaviour.

RoHS information

The RoHS compliance information is part of the Certificate of Analysis (CoA) for each batch of Patinal® material.



Quality assurance

Research, production and sales of our Patinal® evaporation materials take place under a certified DIN EN ISO 9001:2000 quality management system and DIN EN ISO 14001 environmental management system. The quality of the materials is assured by our manufacturing processes, in-process controls and quality tests. Each batch is released only after passing our chemical analysis and application tests designed to confirm the suitability of the material for the evaporation process.

Handling precautions

Product safety information required for safe use is not included in this document. Before handling, read product and safety sheets and container labels for safe use, physical and health hazard information. The material safety data sheet is available online at www.patinal.com, from your EMD representative or distributor, or by calling your global Merck KGaA, Darmstadt, Germany, contact.

Disclaimer

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