

**Product Information**

**Brown A Patinal®**

**GENERAL INFORMATION**

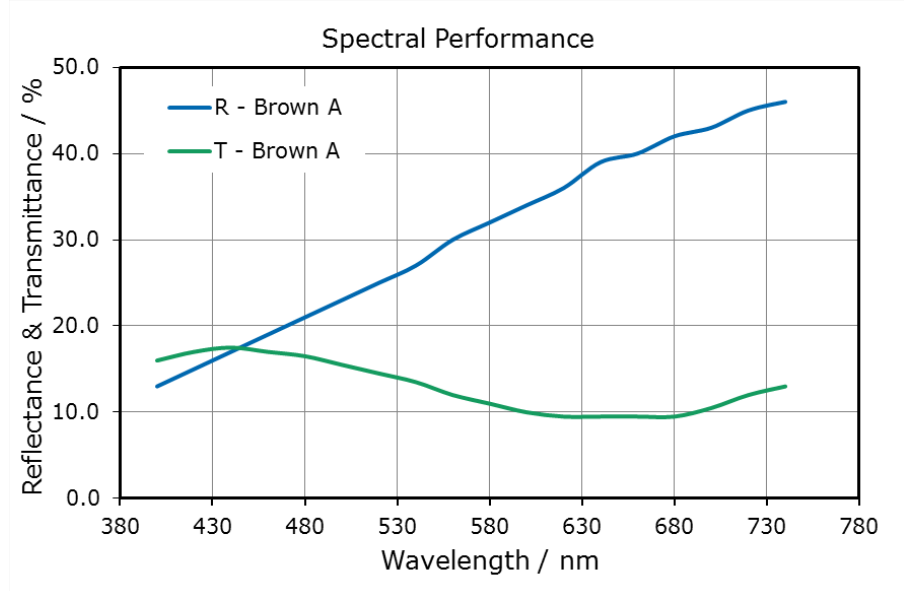
Brown A Patinal® is available as a powder suitable for the deposition of brown layers on glass and plastic substrates by vacuum evaporation.

**AREAS OF APPLICATION**

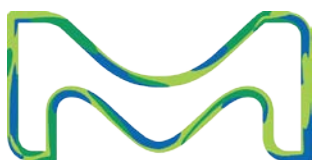
- Light absorbing filters
- Sun glasses
- Scales or decorative coatings

**THIN FILM PROPERTIES**

Refractive index n and extinction coefficient k are correlated to the coating thickness and conditions.



The graph shows the spectral photometric performance of a 150 nm thick coating layer made from Brown A powder Patinal® on BK7.



## NOTES FOR EVAPORATION

Evaporator source	Resistance heated evaporator
Boat	Mo-boat
Evaporation temperature	1400 - 1500 °C
Deposition rate	0.6 – 1.0 nm/s
Oxygen partial pressure	$\leq 5 \cdot 10^{-5}$ mbar
OCR-settings	Density 2.20 g/cm <sup>3</sup> , z-ratio 1.0

The substance can be evaporated out of a boat made from molybdenum, tantalum or tungsten. The evaporation should be carried out at a pressure of less than  $10^{-5}$  mbar. Substance Brown A Patinal® should be heated below a closed shutter to 1400 - 1500 °C within 30 - 60 seconds. Then the shutter is opened and the glasses are coated until the desired absorption is reached. Without a shutter or evaporated at a too high temperature the layers show a greyish appearance. The remaining residue in the boat has to be rejected.

By following the above instructions hard, durable and chemically very resistant layers are obtainable. However, they are not free of reflection. In order to get reflection-free layers, simultaneous evaporation of MgF<sub>2</sub> or SiO<sub>2</sub> is necessary.



## PRODUCTS

Brown A Patinal® is available as powder.

Product Code	Description	Purity*	Dimensions
1.01267	Brown A Powder Patinal®	n.a.	Powder, less than 0.3 mm

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

### Appearance

1.01267	Grey powder
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## SPECIFICATION

### RoHS information

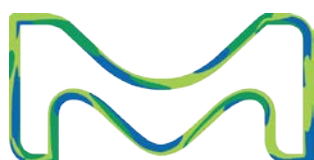
The RoHS compliance information is part of the Certificate of Analysis (CoA) for each batch of Patinal® material.

### Application test

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

### Sizes

1.01267	< 0.315 mm ≥ 90 %
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## 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](http://www.patinal.com), from your EMD representative or distributor, or by calling your global Merck KGaA, Darmstadt, Germany, contact.

## Disclaimer

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