

ODP97 - Barium Sulfate Coating

Barium Sulfate (BaSO_4) is a white powder used in optical applications due to its relatively flat spectral reflectance response within the UV-A to NIR wavelength range. In solution Barium Sulfate exhibits a diffuse reflectance characteristic and is resistant to high intensity optical radiation. The powder can be compressed into tablet form for use as reflectance and can also be supplied in solution for spray coating large surfaces.

Gigahertz-Optik developed and manufactures its own barium sulfate solution for coating its world class line of integrating spheres and accessory products. Carefully selected materials and preparation processes are used to produce the coating.

Gigahertz-Optik also offers the coating as a standard sales product under the product name ODP97.

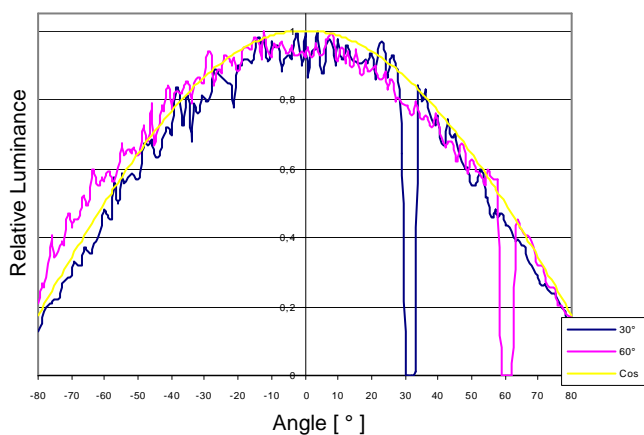
ODP97 is a spray ready barium sulfate & water mixture for use as a coating for diffuse reflectance plates and integrating spheres. ODP97 is supplied in a 1 liter bottle.



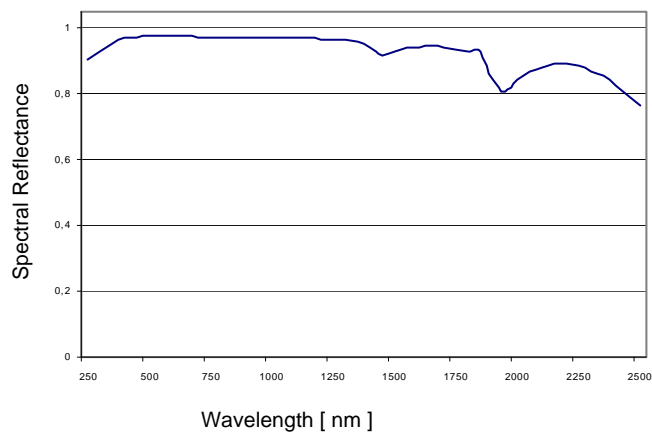
ODP97 Coating Properties

ODP97 Properties

- Highly reflective diffuse coating for optical radiation within the 300 to 2400nm wavelength range
- Typical 97% reflectance within the visible spectrum from 380 - 780nm
- Supplied in air spray ready water and BaSO₄ mixture with binder
- Can be applied directly to coarse aluminium surface
- Non-toxic, non-flammable and free of solvents
- Cured coating is sensitive to damage from impact and abrasion and also soluble in water
- Careful and hands covered handling of coated parts is necessary!
- ODP97 is supplied in 1liter bottles which should be stored in a cool, dry and dark place
- The durability is approximate 1 year. This applies also to open bottles if well locked kept
- 1liter of ODP97 covers a surface area of about 1m². These values refer to a large, flat and seamless area



Typical Diffuse Reflectance Characteristic



Typical Spectral Reflectance

ODP97 Processing

- The complete contents of bottle should be transferred into a glass or high grade steel bowl. If the coating is lumpy it must be strained through a high-grade steel filter. Stir the coating very well with a mixer machine. To reduce viscosity the coating should be heated up to approx. 40 to 45°C. Viscosity can be decreased by mixing 150ml distilled particle free water into 1 litre of ODP97.
- Air spray gun application is recommended to achieve a coating with homogeneous surface & thickness
- Test coat samples before spaying the final product surface
- Recommendations for selection of the spray gun:
 - Flow cup execution
 - 2.5mm paint nozzle
 - Operating pressure approx. 2.5 bar
 - Optimum air and paint mixture to be determined by coating test samples
 - Oil and particle free air flow
- Coating set-up in 8 to 10 layers:
 - Start with very thin first layer to reduce the risk of coating running
 - Second layer should be applied once the aqueous surface gloss disappears but before surface dries
 - After two to three layers higher volume layer can be applied because of the a firm undercoat
 - Long time spans between doing each layer coating should be avoided because once fully dried further layers coatings may deform or crack the fully dried coating
 - Toward to the end of the coating procedure (approximate layer 6 to10) apply a thinner volume of coating to obtain a particularly homogeneous and smooth surface
- Fully dried final coating thickness should be approx. 0.5 mm

ODP97 Safety Regulation**• Components:**

- BaSO₄
- Water
- Binder

• First Aid Measures:

- In case of eye contact immediately flush eyes with plenty of water
- In case of skin contact immediately wash skin with plenty of water
- In case of inhalation remove to fresh air

• Fire Fighting Measures:

- Non flammable

• Personal Protection:

- Eye protection (lab type goggles) recommended
- Dust respirator recommended

• Physical and Chemical Properties:

- Shape: Dispersion paint
- Colour: White
- Physical State and appearance: Liquid

• Toxicological Information:

- Toxicity: Non- toxic

• Regulatory information:

- No safety information labelling of the product required for this product.

ODP97 Coating Services

Gigahertz-Optik provides custom coating services for its ODP97 barium sulfate coating.

Please contact the factory to discuss your custom coating requirements.



Purchasing Information

ODP97 Coating

Model	Item No.:	Description
ODP97	100850	1l bottle barium sulfate coating in ready to use mixture

Gigahertz-Optik

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Made in Germany

