

## Pro-Lite Water-Based Barium Sulphate Coating

Pro-Lite's barium sulphate ( $\text{BaSO}_4$ ) coating is a scientific-grade paint that exhibits near-perfect diffuse reflectance at levels up to 98% in the 250-2500nm (UV-VIS-NIR) wavelength range. The water-based formulation is highly affordable and avoids the hazardous cargo restrictions and costs associated with ethanol-based formulations. Barium sulphate is used to coat integrating spheres, lamp housings, backlight reflectors and laser pumping chambers, in fact anywhere where you need efficient, uniform illumination.



Commonly referred to as "integrating sphere paint", our barium sulphate coating can be used on almost any substrate material (glass, plastics, metal, wood) and is best applied by spray painting (airless spray gun). Spray painting allows you to layer the paint gradually - at 12-15 layers, you achieve the optimum thickness and maximum reflectance. Brush painting is possible to touch up small chips on an already painted integrating sphere for example, but brush painting from scratch will not yield good results. At the optimum coating thickness of about 0.5 to 0.6mm, 1 litre of barium sulphate paint will cover an area of approximately  $0.25\text{m}^2$ .

Our affordable water-based formulation provides good optical performance and avoids the added costs associated with alcohol-based paints (hazardous cargo restrictions and costs apply to those) but the water-based formulation does take longer to apply. Reckon on between 5-6 hours total including drying time between layers assuming a warm, dry environment and some forced air drying of the paint. Ethanol-based paints are more expensive to transport (there are also storage restrictions) but the solvent evaporates more quickly which reduces the overall coating time.

The paint is available in 500ml and 1000ml bottles and as pre-packaged value packs. A spray kit is available that comprises a 500ml bottle of paint together with 2 compressed gas sprayers and a glass bottle. The sprayers and glass bottle are available to order separately.

Order Code	Description
<b>OPRC05</b>	Barium sulphate coating, 500ml
<b>OPRC1</b>	Barium sulphate coating, 1000ml
<b>OPRC2</b>	Value pack – 2 x 1 litres
<b>OPRC3</b>	Value pack – 3 x 1 litres
<b>OPRC5</b>	Value pack – 5 x 1 litres
<b>OPRC10</b>	Value pack – 2 x 5 litres
<b>OPRC-Set1</b>	Spray pack, comprising: 1 x 500ml paint (OPRC05); 2 x sprayers (OPSP); 1 x glass bottle (OPGL)
<b>OPSP1</b>	Individual sprayer (non-reusable)
<b>OPSP5</b>	5 x sprayers (non-reusable)
<b>OPOGL</b>	Glass bottle for sprayer (reusable)

#### Specifications

<b>Wavelength Range</b>	250-2500nm (useful range is 300-1200nm)
<b>Reflectance</b>	96-98% at optimum thickness of 0.5-0.6mm
<b>Rate of Coverage</b>	1 litre covers approximately 0.25m <sup>2</sup>
<b>Temperature Range</b>	Up to 60°C
<b>Substrates</b>	Compatible with metal, plastics, glass and wood
<b>Sprayer</b>	Spray pressure: constant 4.4 bar
	Capacity of glass bottle: 170ml
	Propulsion gas cartridge: 97g (propane, isobutene , dimethyl ether)
	Disposal: in normal refuse
	Caution: the gas is flammable
	The sprayer is not reusable