



IM1.6 Coating Technical Data Sheet



Introduction

Under contract to NASA, NanoLab developed a number of paints and coatings for very high absorbance optical applications. NanoLab offers four products to meet the needs of optical engineers: adVANTA, Singularity, Singularity LT, and IM1.6. NanoLab offers both coating services and the paint itself for those interested in applying the coating in their own facilities.

IM1.6, Overview

IM1.6 is a solvent based paint filled with carbon nanotube and polymers, that creates a tough, durable coating that is highly black and is index matched to glass and other materials with an index near 1.6.

IM1-6, Formulation

The paint is formulated with a fast evaporating solvent blend. Confirm substrate compatibility before use.

IM1.6, Application

The paint is formulated for spin coating, spray coating, which requires application in a spray booth or fume hood, or with protective solvent vapor/particulate masks suited to the task. Spin coating or air brush spraying are the recommended application techniques, but parts can also be dipped or gently swabbed. Substrates and spray guns should be resistant to chemical attack.

We find that a Iwata Eclipse HPCS airbrush is well suited for small scale coating jobs. Coverage at ~ 90 microliter/cm² results in an opaque (OD>5) coating that performs well in the visible. Thinner coats may also perform well in the visible.

Properties

Viscosity: 5-10cps

Wet Odor: ether-like

Immersion tests: No reaction to immersion 2hrs in 25C water.

Total Hemispherical Reflectance (THR)

Samples were loaded into a Shimadzu UV-Vis-NIR spectrometer equipped with 60mm integrating sphere, and measured referenced to Spectralon white sample. Reflectance 350-850nm: <5%.

Packaging and Coating Services

IM1.6 is sold as in a quantity of 200ml. NanoLab provides coating services for baffles, telescope components, and other optical parts. Parts are handled in a class 100 clean space to prevent particulate contamination during the coating process. All work is done domestically, by US citizens in an ITAR compliant facility.

