



Provisional
July 29, 2012

Optical Adhesive and Coating Material: **OF-139N**

OF-139N is one of a series of low refractive index UV curable coating materials designed for the cladding of optical fibers. Its main feature is the low refractive index of 1.386 at 900-1000 nm and the good adhesion to glass.

Properties

n^D liquid	1.380
n^D cured @589nm	1.391
RI cured @950 nm	1.386
Density, g/cm³	1.50
Viscosity, cp	3500
Shore A	
Shore D	60D
Adhesion to glass, 90° peel, g/cm	88
Tensile, MPa	11.5
Elongation to break, %	40
Elastic Modulus, MPa	350

The product is supplied pre-filtered to below 0.5 micron particles. It is a pale yellowish clear fluid. It forms a tough and elastic polymer upon irradiation.

Storage

1. Avoid unnecessary exposure to ambient light.
2. The product should be stored at ambient conditions of 20-30°C. Do not refrigerate. Upon storage and especially if subjected to low temperature, some ingredients may precipitate. It may appear as crystals or haze. If that happens, the product has to be reheated to 60-70°C for half an hour and then shaken well for a few minutes.
3. Long periods of storage combined with excessive heat may cause irreversible gelation.
4. Do not store under nitrogen. Oxygen is an essential inhibitor against premature gelation.
5. The adhesive is supplied in partially filled glass bottles. This allows for enough air (oxygen) to be present. Repackaging in plastic (polyethylene or polypropylene) bottles or syringes is possible because these plastics are permeable to oxygen.

The product is specified to be useful for at least 12 months but longer use can be experienced with proper handling.

Application

Like most UV cured acrylic resins, the polymerization of **OF-139N** leaves a tacky surface. To achieve a good aesthetic non tacky surface, it is recommended to irradiate under nitrogen. No inerting is necessary when curing between two layers or in a mold.

Curing can be achieved by any source of UV at 300-400nm. Typically, a dose of 1000-2000 mJ/cm² is necessary.

Safety: Although safer than most UV adhesives, this adhesive is a chemical and must be handled by professional workers and after review of the MSDS.