



## OF-134

### Optical Cladding Materials

March 2011

**OF-134** is a low refractive index coating material which is intended for the cladding of optical fibers. The material is designed to be compatible with Optical fiber Drawing Towers.

#### Properties

|  |        |
|--|--------|
| <b>n<sup>D</sup> liquid</b>              | 1.339  |
| <b>n<sup>D</sup> cured</b>               | 1.344  |
| <b>RI at 900-1000 nm</b>                 | 1.340  |
| <b>Density, g/cm<sup>3</sup></b>         | 1.66   |
| <b>Viscosity, cp</b>                     | 3800   |
| <b>Shore A</b>                           | 70-75A |
| <b>Tensile Strength, MPa</b>             | 1.1    |
| <b>Elongation, %</b>                     | 38     |
| <b>Elastic modulus, MPa</b>              | 3.8    |
| <b>Adhesion to glass, 90° Peel, g/cm</b> | 33     |
| <b>Methanol release potential (g/Kg)</b> | 13.5   |
| <b>Transparency</b>                      | clear  |

The product is supplied pre-filtered to below 1 micron particles.

#### Storage

1. Avoid unnecessary exposure to ambient light and moisture.
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 crystallize out.
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 glass bottles. Keep container closed to avoid moisture penetration.

The product is specified to be useful for 6 months.

#### Application

**OF-134** is a dual cure composition that is based on a fast UV curing followed by a slow moisture curing. The moisture in the surrounding atmosphere is sufficient to start the process. The final stage of the moisture curing is a condensation reaction which is enhanced by heat and coupled with a release of a small level of methanol. The UV curing is done under nitrogen. Typically, a dose of 1000-2000 mJ/cm<sup>2</sup> is necessary. When properly cured under nitrogen, it should have no oily surface or a tacky surface. Since it is a soft polymer, it requires a second coating of a hard UV coating. The material is compatible with common secondary hard coats. Final adhesion will be achieved not earlier than 24 hours after curing and possibly only after rewinding and ventilation of the fibers. For best adhesion and best performance, it is recommended to allow the fiber to dwell for 30-60 minutes at 80-90°C. This post heat process has to be done a day or more after the coating operation and can be delayed until shortly before the actual use.