

MY-1451

Optical Adhesive and Coating Material

Updated: September 2010



MY-1451 is one of a series of low refractive index UV curable adhesives and encapsulants. Its main feature is the low refractive index of 1.45. It is a tough and flexible polymer.

Properties

| | |
|---------------------------------------|---------------|
| n^D liquid | 1.4330 |
| n ^D cured (@589 nm) | 1.4507 |
| Refractive index cured @ 900-1000nm | 1.446 |
| Density, g/cm ³ | 1.105 |
| Viscosity, cps | 250 |
| Hardness, Shore A | 92 |
| Hardness, Shore D | 50 |
| Adhesion, 90° Peel force, glass, g/cm | 600 |
| Tensile strength, MPa | 10.5 |
| Elongation @ break, % | 70 |
| Elastic modulus, MPa | 155 |

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

Storage

1. Avoid unnecessary exposure to ambient light.
2. The product should be stored at ambient conditions of 15-30°C. Do not refrigerate. Upon storage and especially if subjected to low temperature, some ingredients may crystallize out. 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. If necessary, repeat this procedure until it clarifies.
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 12 months if stored properly.

Application

The adhesive is supplied in dark glass bottles in order to enable observation of its clarity and to enable re-clarification by heating as specified above. If possible it is recommended to re-pack it in a light-protected syringe. Use a plastic syringe which is permeable and allows oxygen to get in. Do not use syringes with a rubber plunger which also contain silicone lubricant. Please consult us for a source.

Like most UV cured acrylic resins, the polymerization of MY-145 leaves a tacky surface. It has no effect on the adhesion. To achieve good aesthetic non tacky surface, it is recommended to irradiate under nitrogen. No inerting is necessary when curing between two layers.

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.



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