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Optical Coating Material: MY-132 MC

MY-132 MC is a low refractive index coating material. Its main feature is the extremely low refractive index of 1.32. The refractive index of 1.32 makes the product valuable for biological and microscopic applications.
MY-132MC is a reactive 100% solids material that cures upon exposure to ambient moisture.
The cured product is an inert polymer with a very low surface energy, similar or lower than Teflon. Much like Teflon, it has a non-stick properties and it repels many fluids. As a result it is very attractive for encapsulation of biological object and tissues. It will not interact with the aqueous media.

Properties Of the cured Film

Refractive index, fluid	1.319
Refractive index, cured	1.319
Density	1.71
Viscosity, cps	200
Appearance	Clear Colorless Soft Solid. Sensitive to abrasion.
Adhesion	Good adhesion to glass and other oxides and some metals such as aluminum and copper

The product is supplied pre-filtered to below 0.5 micron particles.
The product comes as a low viscosity fluid. The viscosity can be further reduced by adding as little as 5 pph methanol.

Storage

1. The product should be stored at ambient conditions of 0-30ºC.
2. The adhesive is supplied in glass bottles. Keep it in the original container or in another glass container with narrow opening.
3. Avoid moisture pick up which will cause gelation.

Stability: The product is specified to be useful for 6 months.

Application

MY-132 MC is intended to be coated on glass by any common coating technique such as dipping, spreading with a doctor knife, spin coating and the like. The only precaution is due to the quick gelation upon exposure to humid air.
Initial curing is achieved within 60 minutes in layers of up to 200 microns. Increase temperature and high humidity will accelerate curing. For deeper sections, curing may be slower. Curing speed also degrades with storage time. Final curing is achieved after a day at ambient conditions and post cure of about one hour at 80-120°C. Post cure is optional. It will improve adhesion and final mechanical properties but it is not a must. The final coating is mechanically weak. It is very sensitive to abrasion and other shear stresses.

Cleaning and solubility

The non cured product can be removed with solvents such as acetone. Acetone and many other medium polarity solvents (esters, ketones) dissolve the material only at high concentration above 15-25% solids. Dilute solution are turbid as a result of non solubility. The only true solvents for diluting the product (solvents that are capable to make clear solutions even at low solid concentration) are Freon 113, HFE-7100 (3M), Vertrel (DuPont) and other CFC and HFC substitutes for Freon.

Safety

The product contains methanol and releases methanol during the curing process. Methanol is toxic. Refer to the MSDS prior to use.

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