

Product Data

DeSolite[®] DP-1013

Product Description

DeSolite[®] DP-1013 is a DeSolite[®] Supercoatings optical fiber primary coating developed for low microbending performance.

Physical Characteristics

Liquid Coating	Typical Properties
Viscosity, 25°C, mPa·s	4,500
Density, 23°C, kg·m ⁻³	1,040
Liquid refractive index, 20°C	1.478
Surface tension, 23°C, dynes·cm ⁻¹	33

Mechanical Property Development (liquid to solid)	Typical Properties
Degree of Cure, RTDMA [*] Gel Time, s	0.3

Cured Coating** (Tested at <1% R.H.)	Typical Properties
Glass Transition Range (DMA***), °C at E' 1000 MPa	-57
Glass Transition Range (DMA***), °C at E' 100 MPa	-48

Cured Coating** (Tested at 23°C, 50% R.H.)	Typical Properties
Elongation, %	120
Tensile strength, MPa	0.5
Segment modulus, MPa	1.0

Product Benefits

- Superior microbend performance
- Fast curing
- Low modulus for lower attenuation
- Low water sensitivity
- Optimized adhesion for ribbon and loose-tube fiber applications

Cured Coating** (continued) (Tested at 23°C, 50% R.H.)	Typical Properties
Hydrogen generation (24 hrs, 80°C in air, 75 µm films, µl·g ⁻¹)	0.1
Coefficient of expansion (DMA)*** -- in the glassy region (x10 ⁻⁶), °C ⁻¹ -- in the rubbery region (x10 ⁻⁶), °C ⁻¹	217 900
Dynamic water sensitivity (150 µm films) -- peak absorption, % -- extractables, %	1.3 0.9
Refractive index	1.484
Adhesion to glass, 50% RH conditioning, g/in	40
Adhesion to glass, 95% RH conditioning, g/in	38

*Real Time Dynamic Mechanical Analysis

**75 µm films cured in nitrogen at 1.0 J·cm⁻² using one D lamp, unless stated otherwise. UV dose determined with an IL-390 radiometer manufactured by International Light, Inc.

***Dynamic Mechanical Analysis

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Test Methods

DSM Desotech's booklet titled, "Test Methods for DeSolite[®] UV Curable Fiber Optic Materials" should be referenced for abstracts of test methods used to establish the data presented herein. Detailed test methods may be obtained through your Desotech sales representative.

Filtration

DeSolite[®] Optical Fiber Coatings are manufactured using fine filtration techniques designed to minimize particulate matter and to ensure high strength and uniform product performance.

Storage Conditions

Protect DeSolite[®] coatings from all sources of ultraviolet light, including sunlight and fluorescent light, to prevent premature curing. It is recommended that DeSolite[®] coatings be stored in a dry place in unopened, undamaged, original containers at temperatures between 15°C and 30°C. Storage or shipment in cold conditions may result in a phase separation which is reversible and is corrected by heating for 24 hours at 50°C. If possible, the container should be gently rolled to assure uniform dissolution during this heating process.

Shelf Life

DeSolite[®] DP-1013 has a recommended shelf life of 12 months from the date of manufacture, provided that the above stated storage conditions are properly maintained.

Safety Information

This product is formulated with multifunctional acrylates which may cause skin and eye irritation and/or skin sensitization. DSM Desotech makes available a booklet titled, "Safe Handling of UV-Curable Materials" which describes the proper use of its UV-curable products. This booklet may also be found online at www.dsmdesotech.com. Material safety data sheets for each product are also available from your DSM Desotech sales representative. All safety and handling recommendations should be followed carefully.

Conversions

$$\begin{array}{ll} N = g \cdot f \times 9.807 \times 10^{-3} & \text{kg} \cdot \text{mm}^{-2} = \text{MPa} \times 0.102 \\ \text{psi} = \text{MPa} \times 145 & \text{mPa} \cdot \text{s} = \text{cps} \end{array}$$

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