DeSolite®
Optical Fiber Coatings

Product Data

DeSolite® DS-2015

Product Description

Optical fiber secondary coating

Product Benefits

- The NEW industry standard
- Fast cure
- Suitable for wet-on-wet or wet-on-dry processes
- Compatible with all DeSolite® primary coatings and Cablelite® inks.

Characteristics

Liquid Coating	**Typical Properties**
Viscosity,	
-- at 25°C, mPa·s	5900
-- at 35°C, mPa·s	2040
Density, 23°C, $kg \cdot m^{-3}$	1130
Liquid Refractive Index, 23°C	1.517
Surface tension, 23°C, $dynes \cdot cm^{-1}$	22

Cured Coating* (Tested at <1% R.H.)	**Typical Properties**
Glass Transition Range (DMA**), °C at $E'_{1000\ MPa}$	40
Glass Transition Range (DMA**), °C at $E'_{100\ MPa}$	80

Cured Coating* (Tested at 23°C, 50% R.H.) Tensile properties obtained on 4-mil mylar:	**Typical Properties**
Secant modulus, 2.5% strain, MPa	950
Elongation, %	15
Tensile strength, MPa	35

Cured Coating* (continued) (Tested at 23°C, 50% R.H.)	**Typical Properties**
Degree of Cure (UV dose at 95% of Ultimate Secant Modulus, $J \cdot cm^{-2}$)	0.3
Dynamic water sensitivity (150 µm films)	
-- peak absorption, %	2.3
-- extractables, %	1.0
Refractive index	1.537
Hydrogen generation (24 hrs, 80°C in air, 75 µm films, $\mu l \cdot g^{-1}$)	0.2
Coefficient of expansion (TMA), 500 µm films	
-- in the glassy region ($x10^{-6}$), $°C^{-1}$	38
-- in the rubbery region ($x10^{-6}$), $°C^{-1}$	196
Aging after 8 weeks Thermal weight change, %,	
-- at 85°C	3
-- at 85/85°C	2

*75 µm films cured on 4 mil Mylar in nitrogen at 1.0 $J \cdot cm^{-2}$ using one D lamp, unless stated otherwise. UV dose determined with an IL-390 radiometer manufactured by International Light, Inc.

**Dynamic Mechanical Analysis (see DMA graph)

Updated: 3/09

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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 manu-factured 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 recom-mended 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® DS-2015 has a recommended shelf life of 18 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

$N = g \cdot f \times 9.807 \times 10^{-3}$ $kg \cdot mm^{-2} = MPa \times 0.102$

$psi = MPa \times 145$ $mPa \cdot s = cps$

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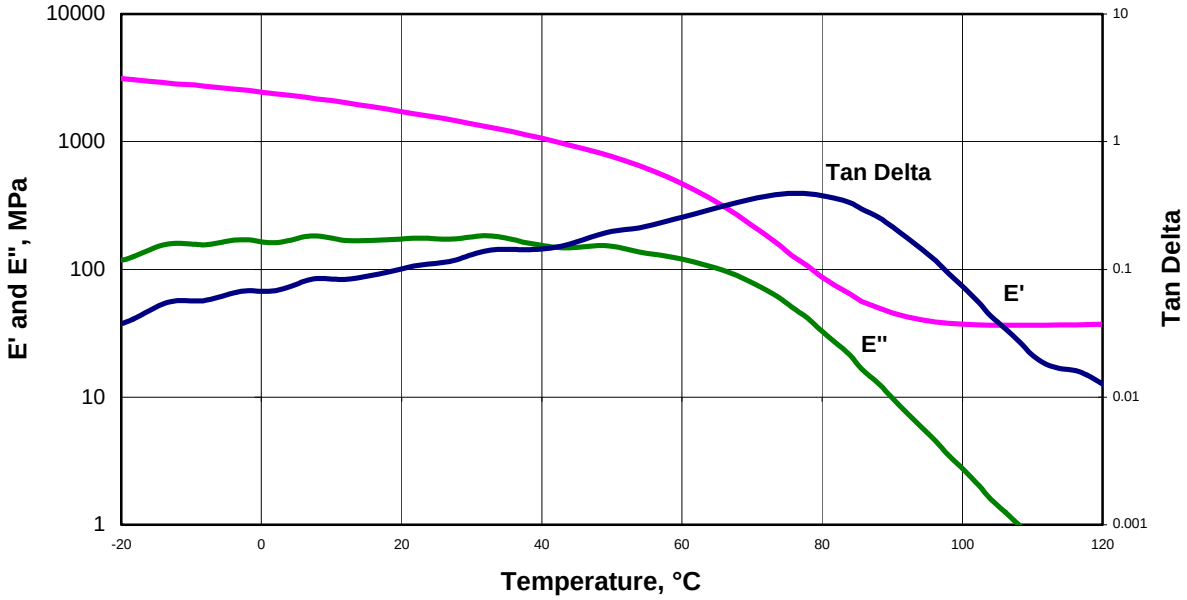
Dynamic Mechanical Analysis (DMA)



Viscosity vs. Temperature