

# CytoSyl 3750 and 3750Y TECHNICAL DATA SHEET

## OVERVIEW

CytoSyl 3750 is a hydrophobic and oleophobic perfluoropolyether. CytoSyl provides long-lasting, anti-fouling, anti-fingerprint, and anti-smudge properties to properly prepared surfaces. CytoSyl bonds to glass, sapphire, metal, and other oxide rich surfaces. This produces a low surface energy, low refractive index, transparent, oil, water and stain repellent coating that is less than 10 nanometers thick.

## FEATURES

- Oleophobic
- Hydrophobic
- Finger lubricity

## Properties

Names	CytoSyl
Product Codes	3750 and 3750Y
Solids concentration	20% or 0.2%
Appearance	Clear liquid
Chemistry	Silane
Density	1.55 g/ml
Flammable	Non-Flammable
Viscosity (25°C)	>0.41 cP
Solvent	AE3000
Boiling Point (Solvent)	50°C
Odor	Light ether-like odor
Dry Time	5 - 30 seconds
Cure Time	Room temperature for 12 hours or 15 minutes at 150°C
Shelf life	1 year
Storage	Room temperature in lightly closed container
Package options	100 grams in 100 ml bottle; 1500 grams in 1000 ml bottle

## APPLICATION NOTES

### Surface Preparation:

CytoSyl adheres to surfaces, such as glass and siliceous materials. Materials rank ordered in adhesion from excellent to good include Silica, Quartz, Glass, Aluminum, Copper, Tin, TiO<sub>2</sub>, Steel and Nickel. A clean surface that is free of contaminants and coatings is needed for CytoSyl adhesion. Use of plasma or other cleaning methods to hydroxylate the surfaces prior to coating with CytoSyl produces the most durable, water, and oil repellent coating.

### Application:

CytoSyl 3750 may be applied using many methods including dipping, spraying, physical vapor deposition, spritz-and-wipe, etc. For Dipping, CytoSyl may be diluted to 0.1 to 0.2% with a low boiling fluorosolvent. Articles should be in solution for 1 minute. For spraying, we recommend air assisted atomization pressure of 5-10 psi (34-69kPa) and

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fluid pressure of 3-5psi (20-25kPa). For ultrasonic assisted atomization, use 30-45 kHz frequency and liquid air flow rates of 3/5ml per minute and an air shaping pressure of 30-60psi (206-413kPa). CytoSyl may be applied by PVD after depositing onto heated boats or porous pellets. Spritz and spread-on CytoSyl using a rubber squeegee can also be used.

**Curing:**

The solvent evaporates and CytoSyl dries in a few minutes producing a tact free substrate. However, CytoSyl achieves its optimal properties with curing at 100 to 150°C for 15 minutes in a >50% relative humidity environment. Curing at room temperature would require between 1 to 12 hours to achieve proper adhesion. For the best abrasion resistance, we recommend curing at the highest substrate safe temperature possible.

**Post-curing:**

If the coated surface appears oily or hazy, wipe it with a clean microfiber cloth.

<b>COATING PROPERTIES</b>	
Color	Transparent
Toxicity	Non-Toxic
Cure temperature	150 °C
Pencil Hardness	>8H
Solvent Resistance: Water Phosphate Buffer Alcohol Acetone	Excellent Excellent Excellent Excellent
Refractive Index:	1.3
Surface Energy:	12 mN-m-1
Dry Coefficient of Sliding Friction:	0.66
Contact Angle Data for Float Glass (soda lime): Static Contact Angle to Water Static Contact Angle to Mineral Oil Sliding Angle to Water (200 µl) Sliding Angle to Mineral Oil (200 µl)	>110° >65° 4° 3°
Contact Angle to water after Exposure: Contact Angle after 24-hour Windex Exposure Contact Angle after 24-hour Isopropyl Alcohol Exposure Contact Angle after 24-hour Acetone Exposure 10,000 Cotton Double Rubs 3500 #0000 Steel Wool Rubs 500g weight on eraser and 1,500 cycles (40 cycles/min) Methyl-alcohol with 500g weight on eraser and 250 cycles (40 cycles/min) 48 hrs in pH 4.6 Buffer Solution Humidity for 120 hrs in 85°C and 85% chamber 4 hrs recovery time at room temp. Thermal shock: -40°C to 85°C, 1 cycle = 1 hr, Total 30 cycles	>110° >110° >110° >110° >110° >110° >110° >110° >110° >110°

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