Hylar® 5000S
polyvinylidene fluoride

Hylar® 5000S is a crystalline high molecular weight powder form of polyvinylidene fluoride (PVDF) specifically designed for solvent-based coatings to provide improved gloss. It forms mechanically strong and tough films that have a broad useful temperature range. These films are highly resistant to most environmental conditions including gamma radiation and are essentially transparent to ultraviolet radiation. The weathering characteristics of Hylar® 5000S coatings lead to excellent performance for the long term.

Hylar® 5000S is available only via a licensing program that specifies the composition of Hylar® 5000S coatings. A properly formulated finish contains sufficient pigment to make the film totally opaque to ultraviolet radiation at the nominal one mil (0.001 inch) film thickness suggested.

SAFETY

Hylar® 5000S is stable at temperatures up to 600°F (316°C). When it is subjected to temperatures above 600°F (316°C) for extended periods of time, hydrogen fluoride (HF) begins to evolve, and at temperatures above 700°F (371°C) HF evolution becomes rapid. Hylar® 5000S exhibits excellent flame resistance; however, in case of fire, HF and traces of potentially toxic fluorocarbons can be formed. HF is corrosive, causes burns on contact, and has an American Conference Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV-TWA) of 3 ppm (2.5 mg/m³) (1984).

Thermal decomposition of Hylar® 5000S to HF can also occur in a bake oven in the event that temperatures are not controlled properly. In the event of fire, use NIOSH approved self-contained breathing apparatus and skin protection to protect against volatile decomposition products. Hylar® 5000S can be disposed of in an approved landfill, but should not be incinerated unless permitted by applicable law and provision is made for absorption of HF.

General		
Material Status	• Commercial: Active	
Availability	• Europe	• North America
Features	• Clean/High Purity • Crystalline • Good Strength • Good Toughness • Good Weather Resistance	• High Molecular Weight • Low Odor • Radiation (Gamma) Resistant • UV Resistant
Uses	• Coating Applications	• Film
Appearance	• White	
Forms	• Powder	
Processing Method	• Coating	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity [1]	1.75 to 1.77		ASTM D792
Water Absorption (Equilibrium)	0.040	%	ASTM D570
1% wt Loss (TGA) [2]	382 to 393	°C	TGA
Moisture Content [3]	< 0.50	%	
Purity - PVDF	> 99.5	%	

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Thermal	Typical Value	Unit	Test method
Melting Temperature	156 to 160	°C	ASTM D3418

Optical	Typical Value	Unit	Test method
Gloss (60°)	> 25		ASTM D2457

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (232°C, 100 sec^-1)	2900 to 3300	Pa·s	ASTM D3835

Additional Information	Typical Value	Unit	Test method
Hegman Grind - Dispersion	5.50 to 6.00		ASTM D1210

Notes

Typical properties: these are not to be construed as specifications.

[1] At 23/23°C

[2] 1% weight loss in air

[3] Non-hygroscopic

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Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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