Hylar® 5000 HG

polyvinylidene fluoride

Hylar® 5000 HG 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® 5000 HG coatings lead to excellent performance for the long term.

Hylar® 5000 is available only via a licensing program that specifies the composition of Hylar® 5000 HG 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® 5000 HG 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® 5000 HG 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® 5000 HG 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® 5000 HG can be disposed of in an approved land fill, 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 • High Gloss	• High Molecular Weight • Low Odor • Radiation (Gamma) Resistant • UV Resistant • Weather 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
Moisture Content [2]	< 0.50	%	
Purity - PVDF	> 99.5	%	

Thermal	Typical Value	Unit	Test method
Melting Temperature	164 to 167	°C	ASTM D3418

Optical	Typical Value	Unit	Test method
Gloss - 60°	40.0	min	ASTM D523

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Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity	1750 to 2050	Pa·s	ASTM D3835

Additional Information	Typical Value	Unit	Test method
Hegman Grind - Dispersion	5.50 to 6.00		ASTM D1210
Thermal Decomposition Temperature [3]	382 to 393	°C	TGA

Notes

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

[1] At 23/23°C

[2] Non-hygroscopic

[3] 1% weight loss in air

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