

Vistex® 105-20

Chemical Resistant Anti-Fog Coating

SOLUTION PROPERTIES

PROPERTY	TYPICAL VALUES	
	Part A	Part B
% Solids	12.5 - 13.5 %	26.0 - 28.0 %
Viscosity @ 25°C	100 - 170 cP	6 - 25 cP
Density @ 25°C	1.02 - 1.04 g/ml	1.08- 1.10 g/ml
Solvents	DI Water, N-methyl-2-pyrrolidone	DI Water, N-methyl-2-pyrrolidone

CURED COATING PROPERTIES

PROPERTY	TYPICAL VALUES
Coating Thickness	3.0 - 5.0 µm
Refractive Index	1.52
Adhesion	100%
Anti-Fog Performance TM-153	Pass

RECOMMENDED OPERATING GUIDELINES

PROPERTY	TYPICAL VALUES
Environmental Conditions	20 - 25°C, 35 - 65 % RH (Class 100)
Air Flow	Filtered, Laminar
Coating Temperature	20 - 25°C
Coating Filtration	5 µm
Extraction Speed	1.0 - 2.0 mm/s
Dry Time/Temperature	<5 mins @ 20 - 25°C
Pre-Cure Conditions	10 min @ 100 - 110°C
Cure Conditions (PC)*	1 hr @ 129°C (264°F)

*A minimum temperature of 120°C (248°F) is required for full cure.

DESCRIPTION

Vistex® 105-20 is a two part-polyurethane-based thermal cure coating intended for use on Polycarbonate. Provides excellent resistance to fogging and chemical attack. Two-part coating system requires pre-mixing and dilution. Suitable for dip, flow and spin application.

FEATURES

- Primer-free Adhesion to Polycarbonate
- Chemical Resistance
- Permanent Anti-Fog Properties
- Optical Clarity
- Formable

STORAGE AND USE

The recommended storage temperature for Vistex 105-20 (Parts A and B) is 20-25°C (68-77° F). When stored at this temperature in the original closed container it is recommended to start use of the product within three months from the date received.

The curing agent (Part B) may become turbid or material may settle at temperatures below 13°C (55°F). Always allow solutions to warm to room temperature before use. If either component is frozen, it will be usable after all solid material re-dissolves to a clear solution.

Any mixture that has become milky or contains white insoluble precipitate must be discarded.



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FORMING

Coated articles may be drape formed or heat pressed. However, the coating will crack if elongation exceeds 25% to 30%, and coating properties will be lost in those areas. Vistex tolerates brief exposure to temperatures over 175°C (350°F) and exhibits long term stability at 60°C (140°F).

PACKAGING

Coated parts should not be packaged until the coating has been removed from the oven and cooled for 12 to 24 hrs.

For individual coated parts it is recommended to use high density polyethylene (HDPE) bags (>2 mil). The bags should be sealed to exclude moisture. Do not package in an area where humidity is > 70%.

Parts coated with Vistex 105-20 should be stored in a cool, dry place. In a humid environment the coating may develop blooming which can be reduced by steam or water wash treatment.

PRODUCT MIXING

Mix 10 parts A with 1 part B, stirring thoroughly with a low speed mixer to prevent air entrapment. It is best to mix and dilute 12 to 24 hours prior to use.

For most applications, the mixed anti-fog solution should be diluted to reduce the solids content to 10% (from an initial 14%).

Weigh ingredients in separate clean containers, then add dilution solvents to the Vistex mixture (not the reverse).

Vistex compositions have limited tolerance for IPA and other non-aqueous solvents. If the mixed product develops a white hazy precipitate it indicates the system does not have enough water to keep all materials in solution and cannot be used.

The recommended solvent mix for maintaining the mixed diluted Vistex 105-20 product is 67% IPA and 33% distilled or de-ionized water.

See table below for suggested dilution formulations.

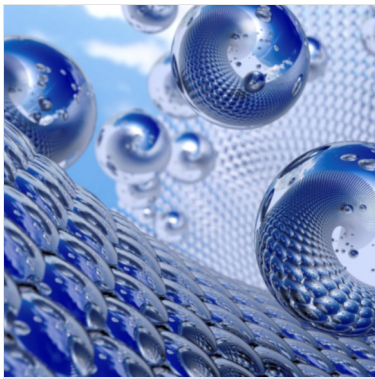
SUGGESTED DILUTION FORMULATION		
	FLOW/DIP COATING	SPRAY COATING
Vistex 105-20 Part A	100 parts	100 parts
Vistex 105-20 Part B	10 parts	10 parts
Isopropanol	30 parts	75 parts
DI Water	14 parts	80 parts
PM Glycol Ether	-	15 parts
Solids	10%	5.5%

Please contact an FSI representative for further advice on dilution.

SHELF LIFE OF MIXED PRODUCT

After mixing the recommended product shelf is three months if stored at 20-25°C (68-77°F). Shelf life may be extended by refrigeration at 4°C (40°F), possibly up to a maximum of six months. Do not freeze.

Test old solutions before use. Any mixture that has become milky or contains white insoluble precipitate must be discarded.



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EQUIPMENT PREPARATION

Equipment Cleaning: Coating equipment should be cleaned prior to using Vistex 105-20 to avoid any possible contamination. Coating contamination can result in problems with adhesion, poor Anti-Fog performance or general appearance. The cleaning process should include multiple solvent rinses (utilizing a solvent compatible with the material in prior use with the equipment) followed by a thorough Isopropanol rinse. Diacetone Alcohol may be used for cleaning equipment of dried Vistex 105-20. Fully cured material may only be removed by mechanical abrasion.

Equipment Materials: Silicone hard coatings are incompatible with Vistex 105-20 and will impair anti-fog performance even at low concentrations. Be sure all equipment is thoroughly clean and free from other coating residues before evaluating Vistex 105-20 in production systems. A peristaltic pump is recommended for initial tests because there is no actual contact of Vistex 105-20 with the pump chamber or mechanical parts. Vistex 105-20 is incompatible with PVC tubing due to plasticizer extraction. Use only PTFE, LDPE, PU or stainless-steel tubing. Circulating Diacetone Alcohol through the pump, hoses and filter for 8-12 hours is recommended for removing possible contaminants before start-up or change over.

Adding 10% isopropyl alcohol to any leftover Vistex will help prevent gelation so waste can be properly disposed.

PRETREATMENT AND CLEANING OF SUBSTRATE

Parts to be coated with Vistex 105-20 should be clean and free of any surface residues. Injection molded polycarbonate parts should be cleaned with a neutral detergent solution to remove any residues left on the parts from the molding process, and then rinsed thoroughly with de-ionized water.

HEALTH AND SAFETY INFORMATION

Before using this product, read and understand the Safety Data Sheet (SDS) which provides information on health, physical, and environmental hazards, handling precautions and first aid recommendations. For a copy of an SDS, contact a sales or customer service representative.

WARRANTY AND LIABILITY LIMITATIONS

Information contained herein is accurate to the best of our knowledge. The coating solution properties and cured coating properties listed herein represent typical values for Vistex 105-20 and are not meant as specifications. FSICT insists that users conduct their own tests for applicability and fitness for any purpose. Statements concerning use of products or formulations described herein shall not be construed as a warranty or license to infringe any patent or trademark, and no liability for infringement arising out of such use is assumed. Please refer to FSICT Standard Terms and Conditions or to your Purchase Agreement with FSICT for the warranty coverage of FSICT's product.

PRODUCT SHIPPING AND AVAILABILITY

Typical lead-time for shipment of Vistex 105-20 is four (4) weeks from confirmation of a purchase order. FSICT provides several shipping options. Please contact an FSICT representative to determine which option best fits your needs.