TECHNICAL INFORMATION SHEET

DeMIST™ FOG FREE FILM

DeMIST™ may be laminated to any flat or cylindrical substrate to prevent the formation of vision obscuring fog. DeMIST™ has an optically clear adhesive with a water-clear, protective release liner to protect the adhesive treatment until ready for lamination. There is also a water-clear protective masking on the anti-fog treated side to protect the film during installation.

Physical Description:

Available in 2 mil and 4 mil (50 and 100 micron) thicknesses, the true film thickness of the polyester base is actually slightly thinner than the normal gauge. The adhesive and release liner and masking thickness is additional to the thickness of the base film.

Appearance: Crystal clear and colorless. The removable Masking is also clear and must be removed.
Visible Lighting Transmission: 90%
Tear Strength (initial): 4 mil – 8.4 lbs. (3.8 kg)
Heat Tolerance: 300ºF (148.8ºC)

Anti-Fog Coating:

The anti-fog coating is a proprietary polymer coating which prevents fogging under all temperature-humidity conditions, even after extended immersion in water or repeated cleanings. The DeMIST™ treatment is extremely hydrophilic which causes water droplets to spread, rather than form beads which appear as fog. Although it absorbs moisture, the coating does not dissolve in water, so it will not smudge when wet. DeMIST™ is not adversely affected by commercial glass cleaners, detergents, alcohols and gasoline. It will not discolor from exposure to sunlight or heat.

Scratch Resistance:

Rubbing lightly with #0000 steel wool will leave only a few scratches on the DeMIST™ surface. Occasionally, fine scratches will appear but will heal when warmed slightly or when moistened, or after simply standing at room temperature for 15 min. to 20 min.

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The following data were obtained using a Taber abrader with a CS10F wheel and 500g load, according to ASTM D1044:

	100 cycles	500 cycles
Uncoated polyester	20% (approx.) Δ haze	66% (approx.) Δ haze
DeMist™ coated polyester	5.6% Δ haze	25.5% Δ haze

Falling sand abrasion was performed according to ASTM D968 using 3 kg standard Ottawa sand:

Uncoated polyester	30% (approx. Δ haze
DeMIST™ coated polyester	1.49% Δ haze

DeMIST™ is superior to all other formable hard coats in Taber abrasion tests and comparable to most non-formable hard coats on flexible substrates. In the falling sand test, DeMIST™ outperforms all other hard coats tested. Bayer abrasion test yield ratios range from 2.5 at 6U coating thickness to over 6 at 15U thickness.

Anti-Fog Tests:

Test #1 – The test surface is immersed in distilled or deionized water for 1 hr. and allowed to dry for at least 1 hr. It is then placed face down over a container of warm water (112ºF/50ºC) so as to completely cover the opening. DeMIST™ coatings may exhibit a ring of condensation as the coating hydrates, but will remain clear thereafter. The test is complete when sufficient moisture has condensed to form large water drops.

Test #2 – The test surface is immersed in distilled or deionized water for 24 hours, removed and allowed to dry for at least 1 hr. The sample is then cooled in a refrigerator to approximately 40ºF (4ºC) and withdrawn to a test chamber containing ambient air at 70ºF (21ºC) and 70 and 80% relative humidity. Material coated with DeMIST™ will remain free of fog indefinitely.

Untreated plastics or glass will fog within seconds. Inferior anti-fog coatings may fog immediately, or remain clear for a short time until they become saturated. DeMIST™ passes ASTM and DIN test for resistance to fogging.

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Pressure Sensitive Adhesive (PSA)

An optically clear adhesive recommended for use with pressure roll laminating machinery or by professional installers familiar with the handling of adhesive films. Adhesive bonds immediately to glass and plastics. Minimum peel strength approx. per lineal inch after adhesive aging over glass. Increases slightly after 5 to 10 days. Adhesive bond strength will be reduces after extended immersion in water, but bond will re-strengthen on drying. Non yellowing.

Adhesive bond strength:

Acrylic/polycarbonate	**Approx: 15 oz/in.**
Glass	**Approx: 6 oz/in**
Tack	**Approx: 0.20 lbs/ft**
Sheer Strength	**Approx: 200 hours**

Minimum application temperature: 30ºF(-1ºC)

Installation With Laminating Machinery:

A clean room environment is recommended when applying DeMIST™ with a pressure laminator. If a clean room is not available, dust may be removed with an ionized air gun connected to a supply of compressed air. A film lamination that is free of contamination may be easier to accomplish in two steps. First, laminate a tacky material to the substrate. Then as a second step peel the tacky material as the sheet enters the nip in such a way that the time of exposure to contaminated air is minimized.

Installation by Hand:

Where laminating machinery is not available or not practical, DeMIST™ may be installed by hand using a wet application technique. For pressure sensitive adhesives, a diluted detergent solution is required to prevent premature “grab” and possible trapping of pockets of air or water. The preferred detergent is 1.0% Chemwet 29 (Chemcor, Inc. Chester NY) in distilled water. Filter before use. The detergent allows the film to be positioned and then locked in place with light force so it will not shift when squeegee pressure is applied

Install on a clean (very important) surface which flat, or curved in one dimension only. With the diluted detergent solution, spray the surface to be treated. Separate the release liner from film with cellophane tape attached to the front and back of a single corner. Spray the film surface with detergent solution (so

squeegee glides) and apply pressure with a rubber squeegee to evacuate liquid from beneath the film. Use overlapping strokes to prevent trapping pockets of water or air. If milky blotches appear, excess water remained after squeegee. The water will dry in time, and blotches and any distortion will disappear.

Care Instructions:

Treated surfaces may be cleaned with household glass cleaner (such as Windex) and a sponge, tissue or paper towel. Do not use cleaners which contain moisturizers, abrasives, strong acids, or caustic substances.

Remove any oily contamination with a grease cleaner, such as Fantastik or Formula 409.

To remove film, slide razor blade beneath one corner and lift slowly. Peeling too fast will cause adhesive to remain on the glass surface. If traces of adhesive do remain, remove with hydrocarbon solvents (hexane, heptane, mineral spirits) or glycol ethers (Dowanol PM). Rubbing alcohol (50-70% isopropyl alcohol) can be used. Plastics should be tested first for solvent sensitivity.

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