



## TECHNICAL DATA SHEET Anti-Fog Coating 2009- 68-2

### General Description

The 2009-68-2 coating consists of two part solvent based polyurethane solution for imparting permanent anti-fog properties to plastic films, sheet, and molded materials. The anti-fog coating after properly cured will prevent fogging under various temperature/ humidity conditions while imparting scratch and mar resistance to plastic substrate. It is stable, non yellowing, chemical resistance.

Part-A the resin is in a solvent solution and Part-B is reactive isocyanate to form polymer film after the reaction is completed in forced air oven.

### Typical Physical Properties

<u>Property (Procedure Code)</u>	<u>Temp</u>	<u>Unit</u>	<u>Expected Spec. Range</u>
Appearance (Visual)	RT		Viscous Liquid
Color (Visual)	RT		Yellow
Non-volatiles (DSC 1.0)	NA	%	6.7 – 7.3
Specific Gravity (SPG 1.0)	25° C	g/ml	0.905 – 0.915
Viscosity (BKV 1.0)) (#2 Spindle @ 30 rpm)	25° C	cps	65-140

### Coating Methods and Application

The 2009-68 coating can be roll, dip, curtain or HVLP spray coated. The coating solutions as supplied will be adequate for application to most plastics. However, a patch test should be performed in advance to determine solvent tolerance of each plastic substrate.

The following plastics have been coated successfully: Polycarbonate, acrylics, polystyrene, polyethylene terephthalate (PET), PET-G, Polyurethane and polyvinylchloride.

The anti-fog coatings have been successfully applied on devices such as optical lenses, safety shields, sunglasses, visors, aero-cockpit and cabin windows, gauge panel and computer windows.

The recommended dry coating thickness is 0.5 to 1.0mil (10-25 microns). Coating that is thinner than 0.4 mils (10-12Microns) will have reduced anti-fog properties.

#### **Dilution for the two part anti-fog solution 2009-68-2**

If the original viscosity measurement as supplied is high, use a urethane grade Diacetone alcohol (low moisture content) at 5%.

The shelf life of the virgin solutions (Part A and B) is 12 months. Avoid moisture exposure of part B at all times the product should be stored at 40% or below relative humidity. Recommended Nitrogen cap part B.



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#### Coating Cure

Mixing ratio of 2009-68-2 is Part A at 95% to Part B at 5%. Coating performance is reduced if not properly cured. We recommend a thermal cure of 120°C for 30 minutes. Dry coating appearance is improved if coating can air dry for 5 minutes before any thermal dry cycle.

The following are approximate time and temperatures. With variance in thermal curing systems we recommend running a time and temperature trial to determine optimal condition.

<u>Temperature</u>	<u>Time</u>
110°C – 120°C	30 Minutes

In order to speed up curing, an accelerator catalyst (T-12) is added to part A and B at 0.025% by weight. The pot life of part A and B will be reduced to less than 24hrs.

#### Clean Up

Best to do equipment clean up before the coating solidifies. Coating residual can be cleaned with Diacetone alcohol and isopropyl alcohol. Adhere to local ordinances before disposal in wastewater systems. Check with the spray equipment supplier for recommended cleaning solvents.

#### Safety Precautions

Refer to the MSDS.