35 Industrial Parkway Branchburg, NJ 08876-3424 USA
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TECHNICAL DATA SHEET
Condensation Coating 2234- 51
Metals: Aluminum, Brass, Chrome, Copper, Iron and electro polished Stainless Steel.

General Description

The 2234-51 condensation control coating for metal substrates will control droplet formation by absorbing moisture until saturation and due to a low contact angle will sheet the excess moisture off the coating. The condensation control coating is a heat stable, waterbourne single part polyurethane coating solution. The 2234-51 coating is a resin-water-solvent mixture and will adhere to the following metals: Aluminum, Brass, Chrome, Copper, Iron and electro polished Stainless Steel.

Typical Physical Properties

Property (Procedure Code)	Temp	Unit	Expected Spec. Range
Appearance (Visual)	RT		Hazy Viscous Liquid
Color (Visual)	RT		Milky white
Non-volatiles (NVN 1.0)	NA	%	4.7 – 5.7
Specific Gravity (SPG 1.0)	25° C	g/ml	0.955 – 0.970
Viscosity (BKV 1.0)) (#2 Spindle @ 30 rpm)	25° C	cps	150
pH (PHA1.0, as is)	25° C		8 - 9

Coating Methods and Application

The 2234-51 coating can be roll, dip, curtain or HVLP spray coated. As process variables differ, a patch test should be made to determine solvent tolerance in presence of heat per each substrate. For sheeting applications the recommended dry coating thickness is (5 to 15 microns). If the substrate is contaminated with grease, water or oils, this can destroy the adhesion properties. For pieces handled prior to coating we recommend the surface be cleaned with an alcohol such as methanol or isopropanol.

Viscosity dilution with isopropanol or distilled water is not recommended but could sometimes be required for certain spray applications. Dilution level below 90% of the original solution and the solids content will be below acceptable levels. This will negatively impact the overall coating properties. Theoretical coverage range is 750-1000 sq. ft. per gallon at 12 micron thickness. In HVLP spray applications use 8-10 psi typical of automotive paints. If the spray fan of coating shows spotty coverage increase air pressure incrementally until an even coating. The 2234-51 can be layered to achieve coating thickness. To control direction of
excess condensation, apply 2234-51 coating in the desired direction. For substrates with a fixed angle
greater than 20% this is not as critical when applying coating.

The shelf life of virgin solution is >12 months. The useful life can be extended if stored in a refrigerated area. High humidity will not affect the performance of the anti-fog coating however, care should be exercised to not contaminate the solution with other reactive additives.

As supplied the 2234-51 coating solution is filtered using 5 micron filtration, left over or recycled coating solution must be filtered through a 5-10 micron filter before reapplying to a substrate to eliminate potential contaminants. Coating thickness, cure time, heating temperature, and coating method can each influence the wet coat, flow and adhesion to a substrate.

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Anti-fog Coating 2234-51
Metals: Aluminum, Brass, Chrome, Copper, Iron and electro polished Stainless Steel.

Coating Cure

Coating performance is reduced, if not properly cured. Adhesion to substrate and coating crazing may occur if coating is not properly cured. We recommend a thermal cure of 125C for 30 mins. Dry coating performance is improved if coating can air dry for a few 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.

Temperature	Time
100C – 212F	60 Mins
110C – 230F	45 Mins
125C – 257F	30 Mins
140C – 302F	10 Mins

Chemical Resistance

Properly cured the 2234-51 coating will have abrasion resistance to “typical impacts” and most household cleaners and cleaning methods. Though a hard coating when dry, this hydrophilic coating when hydrated will soften and exhibit reduced abrasion resistance. The 2234-51 coating will cyclically dry and rewet so abrasion resistance will vary during these cycles. The anti-fog coating should not be exposed to strong acids or oxidizing materials.

Clean Up

Best to do equipment clean up before the coating solidifies. Coating residual can be cleaned with water or IPA isopropyl alcohol. Adhere to local ordinances before disposal in wastewater systems. For spray application systems we recommend cleanup with MEK, MIBK or similar solvent. Check with the spray equipment supplier for recommended cleaning solvents.

Safety Precautions

Flash Point : 125° F (52° C)
HMIS Flammability rating: 2

Skin contact may cause local redness; wash with soap and water. Eye contact may cause redness or swelling of conjunctiva; flush with water for 15 minutes. Swallowing or inhalation may cause headache, vomiting, diarrhea, dizziness, drowsiness, nausea; administer oxygen or fresh air.

Use proper steel drum grounding during liquid transfer. Wear neoprene gloves, safety glasses and protective clothing.