USA's new F-22 uses Hydromer!

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Hydromer Condensation Contol coating formula #2234-63 is used to coat certain aluminum #6061 parts that are populated with electronics.

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TECHNICAL DATA SHEET
Condensation/Lubricious Coating 2234- 63

General Description

The 2234-63 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, waterborne single part polyurethane coating solution. The 2234-63 coating will adhere to aluminum and certain stainless steel substrates.

Typical Physical Properties

Property (Procedure Code)	Temp	Unit	Expected Spec. Range
Appearance (Visual)	RT		Hazy Liquid
Color (Visual)	RT		Off White
Non-volatiles (DSC 1.0)	NA	%	13.9 – 14.8
Specific Gravity (SPG 1.0)	25° C	g/ml	0.950 – 0.970
Viscosity (BKV 1.0)) (#1 Spindle @ 60 rpm)	25°C	cps	40-100

Coating Methods and Application

The 2234-63 coating can be roll, dip, curtain or HVLP spray coated. As process variables differ, a patch test should be made to determine solvent tolerance and optimal spray parameters for particular substrates. For sheeting applications the recommended dry coating thickness is 5 to 15 microns. To maximize the adhesion properties of the substrates, the substrates should clean with the proper solvents to eliminate contaminates on the surface.

Viscosity dilution with isopropanol, distilled water or blend of the two ingredients 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.

The shelf life of virgin solution is 12 months. High humidity will not affect the performance of the coating; however, care should be exercised to not contaminate the solution with other reactive additives.

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Coating Cure

Coating performance is reduced, if not properly cured. We recommend a thermal cure of 120°C for 30 minutes. Dry coating appearance and adhesion is improved if coating can air dry for 5-15 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
80°C – 176°F	90 Minutes
100°C – 212°F	45 Minutes
120°C – 248°F	30 Minutes

Chemical Resistance

Properly cured the 2234-63 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 2234-63 coating will cyclically dry and rewet so abrasion resistance will vary during these cycles. The 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 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.