



TECHNICAL DATA SHEET

Food Grade Anti-Fog Coating 2207- 20- 2

General Description

A non-reactive Isopropyl Alcohol based solution for treatment of food packaging films and molded containers that are heat stable and non-yellowing. The food grade coating deposits a thin film (2.5 to 5.0 microns) of hydrophilic polymer that causes condensed moisture to spread invisibly rather than forming water beads that appear as mist or fog.

The term “fog” is used to describe the condensation of water vapor on a surface. When the temperature of the inside surface of the food packaging film or container falls below the dew-point of the enclosed air water vapor mixture, the excess water condenses to form water droplets upon the inside surface.

Typical Physical Properties

<u>Property</u>	<u>Temp</u>	<u>Unit</u>	<u>Approved Spec. Range</u>
Appearance (Visuall)	RT	NA	Slight Haze
Gardner Color (CLR 1.0)	RT	VCS	<1
Non-volatiles (NVN 1.0)	NA	%	5.9
Specific Gravity (SPG 1.0)	25° C	g/ml	0.796
Viscosity (ZCV 1.0)	25° C	Cps	17

Coating Methods and Application

Method of application includes dip, spray, roll or flow coating. The solution as supplied will be adequate for most plastics however testing should be done to determine solvent tolerance in presence of heat for each substrate material. Two roll coating, dipping, gravure, flexogravure and HVLP are the general methods for coating a substrate with anti-fog solution.

Whether coating is applied by an in-line or off-line process, the coating when dry should be a smooth evenly distributed layer with a dry coating solids weight of 0.5grams – 1.0 grams per 1000 square surface inches.



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Coating Thickness and Cure

Recommended dry coating thickness is .04 to 1.0mils (1 to 25 microns). Coating thickness <.04 mils will have mildly reduced anti-fog properties due to thin thickness. Sheeting effect is generally indifferent to coating thickness however, if the substrate is contaminated with grease and oils this can destroy the anti-fog properties.

The recommended level of solids in the anti-fog solution for any combinations of the above factors lies between 2.5% to 7.0% max. as non-volatiles. The optimum level to be used in any particular case should be determined by trial testing prior to production. Production line speed relates to coating thickness and ability to dry.

Food grade anti-fog solution for films made of low density polyethylene (LDPE), linear low density polyethylene (LLDPE), oriented polypropylene (OPP), polyvinyl chloride (PVC) and polyester (PET). The anti-fog coating has excellent clear view properties and adhesion to most plastics. To promote improved adhesion to polyolefin we suggest corona treatment.

FDA Food Packaging Regulations

The solid dry components of the anti-fog coating are approved for contact with dairy and fatty foods under title:

Adhesives 21 CFR 175.105 and Resinous & Polymeric 21 CFR 176.170

When exposed to 120F water immersion for 24 hrs as specified in 21 CFR 175.300 an experiment LDPE film yielded total extractable of less than .05mg/inches sq.

Clean Up

Best to clean before coating solidifies. Coating residual can be cleaned with water or IPA isopropyl alcohol. Though biodegradable, adhere to local ordinances before disposal in wastewater systems.

Safety Precautions

Flash Point : 53F 11.7C

Keep away from heat, sparks and open flame. Wear safety glasses, gloves and protective clothing when handling. If swallowed induce vomiting.

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