

## **PRODUCT DATA**

# **310** HEAT CONDUCTIVE THERMOMASTIC

#### **DESCRIPTION**

310 Thermomastic is a one-component, nondrying mastic material designed to provide an efficient, heat transfer material between adjacent metallic surfaces. It is designed to improve the coil efficiency in refrigeration systems. 310 is a soft, pumpable material that forms a surface skin yet remains pliable. It has excellent resistance to water, water vapor and temperature change.

310 Thermomastic is used in the refrigeration industry to increase the heat transfer area between refrigerator coils and refrigerated liner walls. It is less costly than soldering or brazing and allows coils to be attached to liner walls with low-cost mechanical fasteners. Warping or stressing of the liner walls is eliminated when the cooling coils no longer need to be attached by soldering or brazing.

#### **APPLICATION**

310 Thermomastic is easy to apply with hand tools, caulking guns or suitable pumping systems. It does not require any heat for application and can be used wherever heating or cooling needs to be transferred between adjacent metal surfaces. 310 Thermomastic adheres to most metal surfaces including copper, aluminum, galvanized steel, painted and unpainted steel. It is compatible with and does not affect glass, wood, aluminum or other metals.

310 Thermomastic is available in 10.3-fluid ounce plastic caulking cartridges, 5-gallon pails and 55-gallon drums.



### **PROPERTIES**

Property	Test Method	Typical Values
Color	ASTM D1729	Tan
Odor		None
Service Temperature		-60°F to 210°F
Cone Penetration, 150 g	ASTM D217	250 – 300 dmm
% Solids	ASTM C771	>99% by weight
% Shrinkage		<1% by volume
Specific Gravity	ASTM D297	1.83 ± 0.05 g/cm <sup>3</sup>
Weight per Gallon		15.3 pounds/gallon
Thermal Conductivity	ASTM F433	0.890 W/m•°K @ -4°C
		(6.170 Btu•in/h•ft²•°F)
Moisture Vapor	ASTM E96	<1.0 g/day•m <sup>2</sup> @ 0.5-mm (0.020-inch)
Transmission		thickness.
Flexibility	ASTM C765	A <sup>3</sup> / <sub>8</sub> -inch diameter bead passes a <sup>1</sup> / <sub>2</sub> -inch
		mandrel bend @ -60°F without any cracking,
		separation or loss of adhesion.
Slump	ASTM D2202,	0.00-inch typical,
	30-minutes @ 158°F	0.08-inch maximum, 30-minutes @ 158°F
		3/16-inch maximum, 30-minutes @ 210°F
Viscosity	ASTM D2196	350,000 – 500,000 cps
Extrudability	TP-026,	17 – 35 seconds
(Press-Flow Rheometer)	0.104-inch orifice @ 40-psi	
Flash Point	ASTM D56	>170°F
Weatherability	ASTM D750,	No apparent change of physical properties.
	1000-hours QUV exposure	
Discoloration from	ASTM D1148,	No apparent change.
Ultraviolet Light Exposure	1000-hrs UVA-340 exposure	
Staining	ASTM D925, Method A	No staining of painted metal.
	ASTM D925, Method B	No migration stain, flow or skinning.
Corrosive Effects	TP-008,	No evidence of pitting or corrosion of
	Tested after a 24-hour cure	aluminum or galvanized steel after 7-days
	@ 77°F	aging of the sealant on metal in water.
Bubble Formation	TP-004	≤25% of surface area after 72-hrs @ 158°F
Shelf Life		At least 2-years when stored in the original
		container at normal warehouse conditions.

#### **REGULATIONS and SPECIFICATIONS:**

FDA Regulation:Meets U.S. Food and Drug Administration (FDA) regulation 21 CFR<br/>175.105 – Indirect food additives: Adhesives and components of coatings.<br/>For substances that may come into contact with food as part of packaging<br/>or processing equipment, but are not intended to be added directly to food.

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