

## TECHNICAL DATA SHEET

### System Description

HumiSeal 1C51 is a one part, 100% solids, fast thermal curing silicone coating. The low viscosity and long pot life of HumiSeal 1C51 makes it ideal for dipping and spraying. At 100% solids, HumiSeal 1C51 is VOC-free. This coating is MIL-I-46058C and IPC-CC-830 qualified and contains an optical brightener for inspection under black light. The final film demonstrates excellent flexibility and is repairable. Humiseal 1C51 recognized under the components program at Underwriter's Laboratory; File No. E105698. HumiSeal 1C51 is in full compliance with the RoHS Directive (EU Directive 2002/95/EC).

### Properties of Liquid HumiSeal

Specific weight, (lb. per gal.) per ASTM, Meth. D1475	8.3 ± .1
Solids Content, % by weight per Fed-Std-141, Meth.4044	100
Viscosity, centipoise per Fed-Std--141, Meth. 4287	590 ± 100
Flashpoint, °C (°F) per ASTM, Meth. D56	121°C (250°F)
VOC (grams / liter)	0
Recommended Coating Thickness	2 - 8 mils
Recommended Curing Conditions	10-15 min.@ 105-130 °C (221-266 °F)
Time Required to Reach Optimum Properties	15 min.
Recommended Stripper	Stripper 1090
Pot Life at Room Temperature	>30 Days
Shelf Life at Room Temperature	6 months from date of shipment if stored in the original unopened container at temperatures of 80°F or below.

### Properties of Cured HumiSeal

#### Thermal Properties

Continuous Use Operating Range °C(°F)	-65°C (-85°F) to +200°C (390°F)
Thermal Shock, per MIL-I-46058C	Passes
Solderability	Fair
Coefficient of Thermal Expansion - DMA	154ppm / °C
Young's Modulus - DMA	512psi

#### Physical Properties

Clarity	Clear
Build per Dip, mils, per ASTM, Meth.D823	3
Flexibility, per MIL-I-46058C	Excellent
Adhesion, per ASTM, Meth. D2197	Excellent
Flammability, per ASTM, Meth. D635	Self-Extinguishing
Weather Resistance	Excellent

#### Electrical Properties

Dielectric Withstand Voltage, volts perMIL-I-46058C	>1,500
Dielectric Breakdown Voltage, volts/mil, per ASTM D-149	7000
Dielectric Constant, at 1MHz and 25°C, per ASTM-D150-65T	2.4
Dissipation Factor, at 1MHz and 25°C, per ASTM-D150-65T	0.01
Insulation Resistance, ohms, per MIL-I-46058C	500 x 10 <sup>12</sup> (500T)
Moisture Resistance, ohms, per MIL-I-46058C	100 x 10 <sup>9</sup> (100G)

#### Chemical Properties

Main Constituent	Silicone
Fungus Resistance, per ASTM-G21	Passes
Resistance to Chemicals	Excellent

Values are not intended for use in preparation of specifications.



# 1C51 Silicone Coating

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### APPLICATION

Cleanliness of the substrate is of extreme importance for the successful application of a conformal coating. Surfaces must be free of moisture, dirt, wax, grease and all other contaminants. Contamination under the coating will cause problems which may lead to assembly failures.

**HumiSeal 1C51 may be applied by brush, dip or spray. Thinning is not required.**

#### Dipping

A controlled rate of immersion and withdrawal (2" to 6" per minute) will insure even deposition of the coating and ultimately a uniform film.

#### Spraying

HumiSeal 1C51 can be sprayed using conventional spraying equipment. Spray pressure will depend on the specific type of spraying equipment used. The spraying should be done under an exhaust hood so that the mist is carried away from the operator. The use of thinner is not required for HumiSeal 1C51.

#### Brushing

HumiSeal 1C51 may be brushed. Uniformity of the film depends on component density and operator's technique.

#### Storage

HumiSeal 1C51 should be stored at 80°F or below, away from excessive heat, in tightly closed containers. Storage of Humiseal 1C51 under refrigeration will extend its shelf life. Avoid direct sunlight. Prior to use, allow the product to equilibrate for 24 hours at room temperature.

#### Curing

HumiSeal 1C51 is a thermally cured conformal coating. The actual curing temperature of Humiseal 1C51 is dependent upon several parameters such as heat sink characteristics of parts being coated, the type of oven used for curing process, as well as oven loading parameters.

**NOTE: Thermal curable silicones may be cure inhibited by a variety of materials i.e.; amines, acrylates, certain ingredients from latex rubber etc. It is recommended that process and materials compatibility be considered when incorporating HumiSeal 1C51 into the production environment. Cotton gloves are recommended for operators that will be handling assemblies prior to coating with HumiSeal 1C51.**

#### Caution

Avoid inhalation of spray. Use only in well-ventilated areas. Avoid contact with skin and eyes. If contact occurs, wash with soap and water. If swallowed, call physician immediately. Refer to MSDS before use.

All technical data in this bulletin is based on test results and is believed to be correct. However, since the end use of HumiSeal materials (and the manner of storing and handling them) is beyond our control, we make no warranty-expressed or implied as to the fitness of use, results to be obtained from or effects of use with respect to these materials. Their use shall be solely by the judgment of and at the risk of the user notwithstanding any statement in this bulletin. © Copyright 1992 CHASE CORPORATION.

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