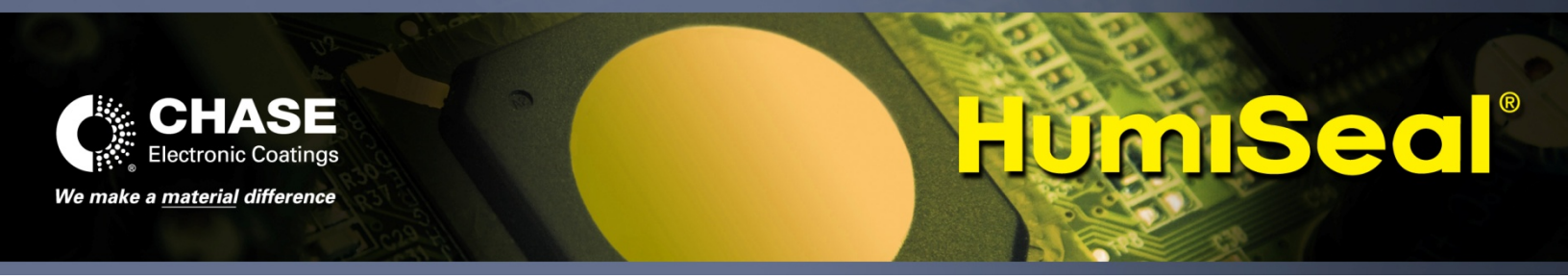


HumiSeal® 1C63 Dual Cure Silicone Conformal Coating Technical Data Sheet

HumiSeal® 1C63 is a UV/RTV curing, oxime-type cure silicone conformal coating which provides excellent moisture and environmental protection for printed circuit assemblies. HumiSeal® 1C63 is a non-corrosive, single component coating which will cure upon exposure to either a UV light source or atmospheric moisture at ambient or elevated temperatures. The material is tack-free after exposure to UV light. A secondary moisture cure will cure unexposed areas of the coating within 24 hours at ambient temperature, 50% relative humidity. HumiSeal® 1C63 is self-leveling, with excellent weathering resistance. HumiSeal® 1C63 is recognized under UL File Number E105698 and RoHS Directive 2011/65/EC compliant.

Properties of HumiSeal® 1C63

Density, per ASTM D1475	1.04 +/- 0.06 g/cm³
Viscosity, per Fed-Std-141, Meth. 4287	3500 ± 1500 centipoise
VOC	< 50 grams/liter
Room Temperature Skin Over time, 1/8” thickness	60 minutes
Recommended UV Cure*	See curing section below
Secondary Cure, for shadow areas	24 hrs @ RT or 20 min @ 76°C
Time Required to Reach Optimum Properties, 1/8” thickness	7 days
Recommended Stripper	HumiSeal® Stripper 1090
Shelf Life at Room Temperature, DOM	6 months
Glass Transition Temperature - DSC	< -90°C
Tensile Strength, per ASTM D412	100 psi
Elongation, per ASTM D412	100%
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 200°C
Volume Resistivity, per ASTM D257	7.97 x10^{14} ohm-cm
Surface Resistivity, per ASTM D257	6.26 x10^{17} ohms per square
Shore Hardness, A, per ASTM D2240	15
Flammability, per UL94	V-1
Dielectric Withstand Voltage, per MIL-I-46058C	>1500 volts
Insulation Resistance, per MIL-I-46058C	1.1 x 10^{12} ohms (1.1 TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	1.1x 10^{10} ohms (11 GΩ)
Fungus Resistance, per ASTM G21	Passes

*Microwave UV cure ovens equipped with “H” style bulbs recommended

Application of HumiSeal® 1C63

Conformal coatings can be successfully applied to substrates that have been cleaned prior to coating and also to substrates assembled with low residue, “no clean” assembly materials. Users should perform adequate testing to confirm compatibility between the conformal coating and their particular assembly materials, process conditions and cleanliness level. Please contact HumiSeal® for additional information.

1C63 is designed for application without additional thinning. Solvents or other thinners should not be mixed with 1C63.

Brushing

Uniformity of the film depends on component density and operator's technique. HumiSeal® 1C63 may be applied by brush. The actual uniformity of the finished coating will depend on component density and operator technique. Brushes may be cleaned promptly using solvent.

HumiSeal® 1C63 Technical Data Sheet

Dispensing

HumiSeal® 1C63 may be applied via standard selective coating equipment such as jet or atomized spray as well as needle valves. The source air used for spraying must be dry to prevent premature curing by the effective secondary cure mechanism. An inert gas such as nitrogen or argon is highly recommended. The dispensing should be done with adequate ventilation so that vapour and mist are carried away from the operator.

Curing

HumiSeal® 1C63 is a highly cross linked coating. In order to achieve maximum cross linking density, the product must be exposed to the correct spectral output. The table below outlines the required dosage and irradiance values necessary to properly cure HumiSeal® 1C63. After UV exposure and return to room temperature the coating should be tack free.

	DOSE J/cm2				IRRADIANCE W/cm2			
	UV A	UV B	UV C	UV V	UV A	UV B	UV C	UV V
MIN	0.700	0.700	0.150	0.750	0.700	0.700	0.150	0.700
MAX	3.000	3.000	0.600	3.500	1.150	1.150	0.240	1.300

Values measured with a Powerpuck II UV radiometer

HumiSeal® 1C63 was designed to be cured using a microwave UV oven equipped with an “H” style bulb. Arc systems can cure HumiSeal® 1C63 however care must be taken during the equipment selection process to ensure minimum dosage and irradiance values can be obtained. Due to the variations possible in curing equipment type and configuration, it is strongly recommended that you contact HumiSeal® Technical Support to discuss your equipment and process in detail.

Storage

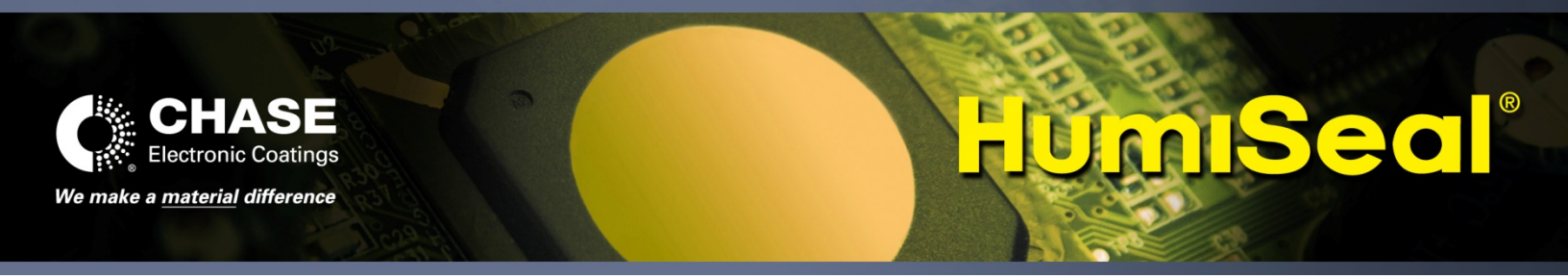
HumiSeal® 1C63 is photosensitive. The product should not be exposed to direct sunlight or full spectrum fluorescent lighting. HumiSeal® 1C63 should be stored at 27°C or below in tightly closed containers in a dry place away from direct sunlight. HumiSeal® 1C63 is also a moisture sensitive material. If coating is partially used, the container should be purged with dry nitrogen or argon prior to resealing to protect the remainder of the coating. Prior to use, allow the product to equilibrate for 24 hours at room temperature.

Caution

Application of HumiSeal® Conformal Coatings should be carried out in accordance with local and National Health and Safety regulations.

Use only in well-ventilated areas to avoid inhalation of vapours or spray. Avoid contact with skin and eyes.

Consult MSDS/SDS prior to use.



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