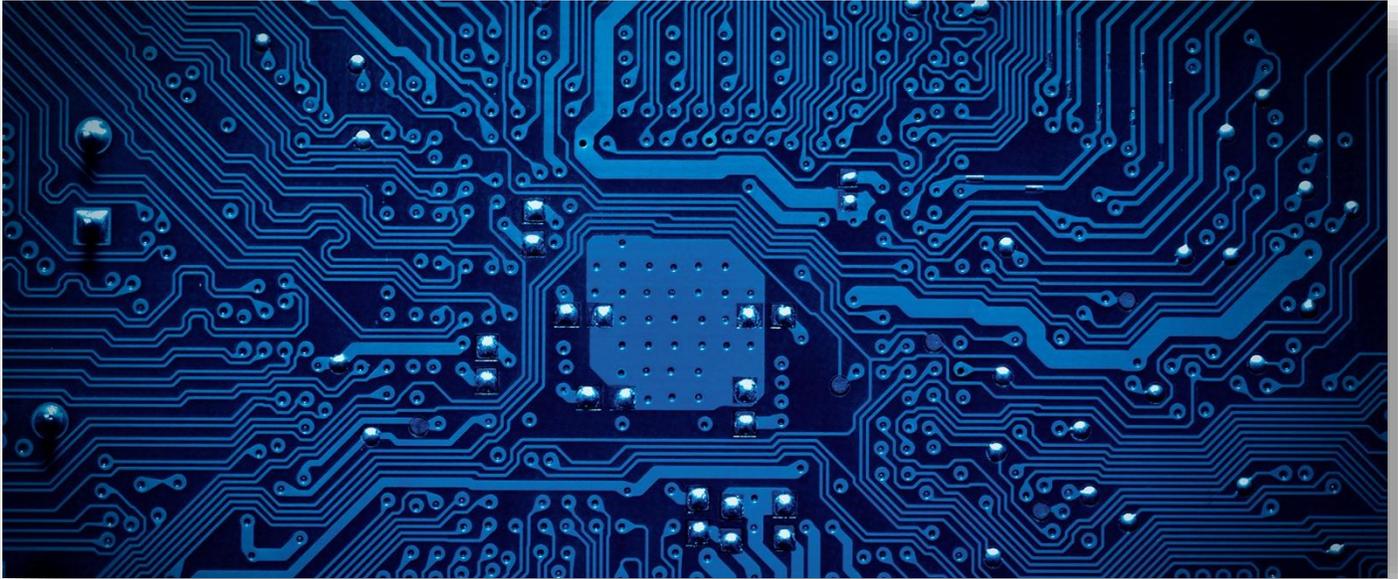


Data Sheet

Sentry Circuit Shield



Description

Sentry Circuit Shield is a 2-part, clear, nonconductive coating for circuitry. Sentry Circuit Shield is designed to replace standard conformal coatings and to provide protection of most circuits, PCBs, and electrical components from the damaging effects of moisture intrusion, corrosion, dirt, and sand.

Surface

- Circuitry
- PCBS
- Electrical Components

Solution

- Moisture
- Dirt
- Corrosion



Characteristics

- **Color:** Clear to slight Amber to Rose (depending on temp and humidity). Always dries clear.
- **Finish:** Gloss
- **Vehicle Type:** Solvent Base
- **Flash Point:** (C Pinsky-Martens closed Cup) 9°C/15°F
- **VOC:** less than 100 g/L
- **Weight per Gallon:** 7.36 lb.

**Non-breathable
REQUIRES PART #B CATALYST**

Spread Rate

Recommended Spread Rate Per Coat:

Wet mils: 2.0-3.0
Dry mils: 0.7-1.0

Coverage

500-800 SqFt. /gal.
Coverage will vary depending on the porosity and texture of the substrate.

Surface Preparation

Sentry Circuit Shield **will not** adhere to silicone coated surfaces. All circuits and electrical components must be clean and free of contaminants prior to application.

Use circuit manufacturer's cleaning recommendations and approved cleaners to avoid damaging the circuits or electrical components.

Make certain circuits or components are completely clean and dry prior to application.

Application Instruction Test Area

Sentry Circuit Shield can be applied to many, but not all types of circuits and electrical components.

It is critical to test for adhesion, performance, and compatibility on a test component prior to full scale application.

Application

Sentry Circuit Shield is a two-component product consisting of 1:1 Sentry Circuit Shield and Sentry Catalyst. It is a non-conductive quartz matrix. It can be applied by spraying or dipping. It is permanent -- not designed to be removed.

With either method of application, always mask off connection terminals and any adjacent surfaces to keep them free of drips or accidental coating.

If applying outdoors, make certain the ambient temperature is between 45° F and 105° F, 90% RH or less, and that there is no chance of rain for a minimum of 5 hours after the estimated time of completion of the coating process. Also make certain there will be no additional morning dew to make the surface damp again after it has dried.

Spraying

Sentry Circuit Shield is a 2-component product requiring **PART#B CATALYST**. When surface preparation is complete, and surface is dry and free of contaminants, shake the container of Sentry Circuit Shield thoroughly as the Nano particles will sink to the bottom.

These need to be suspended for proper performance of the coating. Then pour the desired amount into a clean container large enough to allow for an equal amount of the Sentry Catalyst to be added. Then pour an equal amount of the Sentry Catalyst into the container with the Sentry Circuit Shield. Stir both components together thoroughly.

Approximately every 15-20 minutes, re-stir to suspend the Nano particles during the coating process.

Using a high volume, low pressure (HVLP) spray gun with an approximately 1.4 size tip and the pressure set at approximately 25 psi, spray the component up and down, right and left, approximately 6-8 inches off the surface. Apply only one coat.

CAUTION: If using spray application method, use an approved spray booth. If spray booth is not available, make certain to tent off the area being sprayed with plastic tarps to avoid spray dust from traveling and contaminating other surfaces with overspray dust. Tented and enclosed areas should always be positively supplied with fresh air and have ventilated exhaust to outside using fans. In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.

Never spray near any open source of ignition, such as pilot light flames, or anything that may spark, as this may cause ignition and explosion of the fumes and vapors.

When spraying outdoors, make certain there will be no rain for at least 5 hours after your anticipated completion time. If there is high wind, this can disrupt the spray pattern from your HVLP. It can also contribute to contamination of the coating from blowing dust. It may be necessary to erect a wind screen to protect the area prior to beginning the coating application.

Dipping

When surface preparation is complete, and surface is dry and free of contaminants, open the cans of Sentry Circuit Shield and Catalyst. Stir Sentry Circuit Shield thoroughly to suspend the Nano particles that have settled to the bottom.

Make certain to re-stir every 15-20 minutes to ensure proper performance. Stir slowly to avoid creating air bubbles, which can affect the performance of the coating. In a separate clean container large enough to hold equal parts of Sentry Circuit Shield and Catalyst, pour in the appropriate amount needed for the project and stir to thoroughly combine.

Pour the mixture into a high-density plastic (HDP) tray deep enough to cover the circuit or component being dipped. If several components are going to be dipped, put a blanket of nitrogen gas over the dipping pan to prevent solvents from flashing off.

Completely submerge the desired area of circuitry. Let sit approximately 1 minute, then gently as to not create air bubbles, move item back and forth and up and down to ensure complete saturation.

Remove item allowing excess coating to drip back into tray. Coating wet film thickness (WFT) should be

approximately 2.0 to 3.0. Once the coating dries, it is designed to repel everything, including a second coating of Circuit Coat. Allow to cure for 7 full days before exposing to corrosion or moisture conditions.

Warranty: Limited 10 Year

Sentry Molecular Coatings Inc. guarantees Sentry Metal shield to be defect free, any material that is proven to be defective will be replaced in a like quantity by the manufacturer within 10 years of date of purchase with proof of purchase and provided it has been applied according to the instructions on this container and data sheet along with other related guide-lines posted at SentryMolecularCoatings.com.

This warranty only extends to the owner of the property upon which the product is applied and is nontransferable.

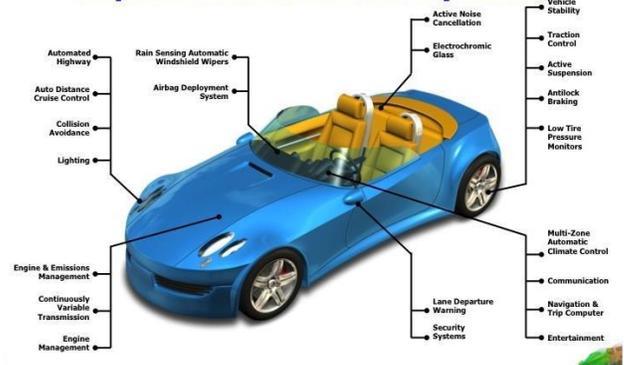
This warranty does not cover wear and tear. This warranty is for manufactures defects only. Any warranty claim must be made in writing and sent to seller with supporting materials and access to the property for inspection and testing as requested by seller. Seller will thereafter provide 100% replacement product for product found to be defective for the first 3 years then the product replacement will be prorated every year until year 10.

This warranty is given in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. The remedy stated herein is an exclusive remedy and Seller shall not be responsible for any other damages, including labor or any incidental, consequential, special or punitive damages, whether based on breach of express or implied warranty, negligence, strict liability or other legal theory.



Embedded Circuit Board

Explosion of Electronic Systems



Sentry Molecular Coatings

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Example of Embedded Circuits Commonly Used