

S-886

SILICONE THERMAL BARRIER COATING

Technical Data Sheet

Description

S-886 is a low density, thermally insulating, ablative coating based on silicone rubber designed to provide thermal protection, such as from ascent heating as well as rocket plume impingement to exposed surfaces of launch vehicles.

- Two-part silicone compound
- Room temperature cure
- Low density
- Cured material has a service temperature from -65°F
- (-54°C) to 400°F (204°C) with short-term exposures of up to 500°F (260°C).
- Uncured S-886 can be applied by spray, trowel or mold methods
- An activator, PA-2, can be used to accelerate the cure.

Because the S-886 coating is based on a silicone rubber, a primer, such as CS 9903, is required to obtain satisfactory adhesion to most surfaces.

S-886 was originally qualified to STM-K798. For information on other qualifications or the availability of modified products, contact Sales. *The following technical information and data are typical for the material but should not be used for specification or acceptance purposes. Testing was performed in accordance with STM-K798 or AMS5127/1.*

Typical Performance Properties

Cured 14 days at 77°F (25°C) and 50% relative humidity

Specific gravity	0.69
% Nonvolatile material	90%, minimum
Thermal conductivity	0.11 W/(mK)
Adhesion per STM-K798	Pass
Simulated operational environment per STM-K798	Pass

Surface Preparation

To obtain good adhesion, surfaces must be free of all traces of oil, wax, grease, dirt or other contaminants. A progressive cleaning process is recommended. Use an appropriate solvent and lint-free clothes. Pour solvent on the cloth to keep the solvent supply clean. Clean a small area at a time and wipe the surface dry with a second clean cloth. See SAE AIR 4069 for additional information on surface preparation. For Socomore's full line of solvents and wipes used for aerospace surface preparation, and their customer approvals, visit www.Socomore.com.

Typical Application Properties

At 77°F (25°C) and 50% relative humidity

Color	
Base	Mauve to beige
Curing agent	Light blue
Mixed	Light beige
Mix ratio	
By weight	100:10 (base/curing agent)
Consistency	Putty
Application time	4 hours, minimum
Extrusion rate at 2 hours	15 g/min, minimum
Cure at 48 hours	40A

Priming

Apply CS 9903 primer to the freshly cleaned surfaces as quickly as practical, taking care to ensure a thin, even coat. Remove enough primer from the container for immediate use, but do not pour any excess back into the original container.

CS 9903 should be applied in a uniform thickness of approximately 0.5 - 1.0 mil (13 - 25 microns); this should yield a resulting pink color. Lack of a pink color indicates that the film is too thin; a red color indicates that it is too thick.

Allow one-hour dry time at 77°F (25°C) before applying the S-886.

Mixing Instructions

S-886 base and curing agents are matched and tested together; do not mix lots. Mix according to the indicated mix ratios; using the incorrect ratio can affect the sealant properties and voids the warranty. For additional information, see the FAQ on the Flamemaster website (www.flamemaster.com).

Application

If applying by trowel, exert heavy pressure to ensure intimate contact between the S-886 coating and the treated surface. S-886 may be thinned by adding 30 ml of a 1:1 (by volume) blend of xylene and MEK to each 100 grams of mixed S-886.

S-886 may be spray-applied using conventional spray equipment. Thin the mixed two-gallon kit of S-886 with 2,200 - 2,800 ml (75 - 95 fluid ounces) of a 1:1 (by volume) blend of xylene and MEK. For a five-gallon kit, use 4,400 - 5,600 ml (150 - 190 fluid ounces) of the solvent blend.

When two or more coats are required to obtain the required thickness, allow a minimum of 30 minutes between coats to allow the solvent to flash off. To prevent adhesive failure between layers, it is

preferred to continue the coating process without interruption until the specified thickness is reached. If the coating is allowed to cure between coats, additional priming may be required.

Curing

Curing of S-886 is very dependent upon relative humidity and temperature. If at all possible, application should be made at temperatures about 60°F (16°C) and at a relative humidity of 50% or higher. S-886 near the end of shelf life may also exhibit a lengthened cure time.

To accelerate the cure, Flamemaster's activator, PA-2, can be used. Up to ½ pint (235 ml) can be added after mixing to the two-gallon kit. Up to 1 pint (473 ml) can be added to the mixed five-gallon kit. This should give a hardness of 50A in 24 hours.

Clean up

Prior to full cure, wipe all tools and spray equipment with a solvent pre-saturated wipe: recommended solvents are DIESTONE G11, DIESTONE A8290, DISCOVER DPLF or DIESTONE DLS. For cured material on tools, use wipes pre-saturated with DS 108, DIESTONE HFP, DIESTONE DLS, or DIESTONE ZERO HD.

Storage

Unmixed S-886 has a shelf life of at least 6 months from date of manufacture when stored below 40°F (4°C) in the original, unopened package. Refrigerated shipping is not required.

Packaging

S-886 is available in injection kits and can kits. Bulk packaging may be available; contact Sales.

Health and Safety

Before using this material, read and understand the Safety Data Sheet (SDS) as it includes information on health, physical, and environmental hazards, as well as handling precautions and first aid recommendations. SDSs are available upon request.

Emergency Contact Chemtrec 800-424-9300
Outside North America 703-527-3887
Keep out of the reach of children
For industrial use only

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This technical data sheet replaces and cancels the previous one.

The above details have been compiled to the best of our knowledge. They have, however, an indicative value only and we therefore make no warranties and assume no liability in connection with any use of this information, particularly if a third party's rights are affected by the use of our products. The above information has been compiled based upon tests carried out by SOCOMORE. All data is subject to change as SOCOMORE deems appropriate. The data given is not intended to substitute for any testing you must conduct in order to determine the suitability of the product for your particular purposes. Pictures are not contractual. Please check your local legislation applicable to the use of this product. Should you need any further information please contact us.