



DOW CORNING® 92-007 Thermal Control Coating

FEATURES

- High emittance and low absorptivity
- Resists weathering, moisture, ultraviolet rays, ozone and chemicals
- Flexible from -65°C to +260°C
- 70% solids solvent dispersion
- Excellent spraying characteristics
- One part room temperature cure
- Cures at room temperature when exposed to moisture in the air to form a tough rubbery film

One part elastomeric silicone coating

APPLICATIONS

- Developed for use in the aerospace industry.
- Used to thermally protect and seal various surfaces on space-related hardware.

TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

CTM*	ASTM*	Property	Unit	Value
Physical and chemical properties				
		Physical nature, as cured		Elastomer
		Color		White
0050	D1084	Viscosity at 25°C	mPa.s	630
0022	D792	Relative density at 25°C		1.54
		Solids	%	70
0095		Tack-free time	minutes	2
		Cure time at 25°C and 50°C relative humidity	hours	24
		Flash point - closed cup	°C	15
		Total hemispherical emittance		0.84 to 0.90
		Solar absorptivity		0.14 to 0.20
Mechanical properties				
0137A	D412	Tensile strength	MPa	1.75
0137A	D412	Elongation at break	%	300
0099	D2240	Durometer hardness, Shore A		20
		Deep section cure - 25mm thickness		No
		Adhesion - 2024 aluminium (primed)		Excellent

* CTM: Corporate Test Method, copies of CTMs are available on request.

ASTM: American Society for Testing and Materials.

HOW TO USE

Substrate preparation

DOW CORNING 92-007 Thermal Control Coating adheres well to primed surfaces of most materials used in the aerospace and aircraft industries. Typical materials include glass, cured silicone rubber, cork, phenolic, polyester, epoxy, silicone resin laminates and most metals including stainless steel, titanium and aluminium. It may not adhere well to

polyethylene or certain plastics and organic materials (including rubber), which bleed or exude plasticisers.

Stronger and more uniform bonds are obtained by preparing metal and plastic surfaces with DOW CORNING® 1200 Primer. For best results:

1. Clean the surface with a chlorinated solvent (see Handling Precautions) and a slightly abrasive pad or a coarse

lint-free cloth.

2. Rinse cleaned surface with acetone or methyl ethyl ketone.
3. Apply a thin coat of primer by dipping, brushing or spraying.
4. Allow the primer to dry for at least 1 hour, according to relative humidity.
5. Silicone rubber surfaces should not normally be primed, but only roughened slightly with abrasive paper and rinsed with acetone. In thin sections, a primer may be needed.

How to apply

Although DOW CORNING 92-007 Thermal Control Coating can be applied by brushing, spraying is recommended because the coating thickness can be better controlled.

Conventional paint/spray equipment can be used to apply this coating as supplied. However, lower air pressures can be used for spraying if heptane is first added to lower the viscosity of the coating. In most equipment, 1.8 MPa is sufficient air pressure for proper atomisation when 25% (by weight) of heptane has been added.

Apply a smooth coat with a dry film thickness of at least 0.1mm. The coated substrate may be handled 2 to 4 hours after coating; however, allow a 5-day cure before exposing to space environmental conditions.

Spray guns, brushes, lines or any other paint equipment used for applying this coating should be thoroughly cleaned with a solvent such as toluene or perchloroethylene as soon as possible after use.

Solvent addition

As supplied, DOW CORNING 92-007 Thermal Control Coating is dispersed in naphtha. If it is desirable to lower the viscosity of the coating, add moisture-free heptane and mix without introducing moisture from the air into the coating. Moisture or moisture-laden-air in this coating can result in gels throughout the material. However a small amount of these gels may not affect the absorptivity and emittance.

Proper mixing can be accomplished by adding the solvent (see Handling

Precautions) to the coating and rolling the combination in a closed container until thoroughly mixed or by mixing with a commercial paint shaker. To ensure that the heptane or other suitable thinning solvent is moisture-free, it should be dried by adding a drying compound such as calcium sulphate. A suggested material for this use is Drierite® *, a blue dyed calcium sulphate. Sufficient Drierite should be added to cover the bottom of the solvent container (1-5 litre capacity).

Allow to stand for 24 hours. If at the end of this time, the Drierite is still blue, the solvent may be considered "dry" and can be added to the coating. If however, the pellets of Drierite have turned pink, more pellets should be added to the solvent and allowed to remain an additional 24 hours. This process should be repeated until the Drierite does not change to pink within a 24 hour period.

* Drierite is a product of the W.A. Hammond Drierite Company of Xenia, Ohio, USA.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

USABLE LIFE AND STORAGE

When stored at or below 32°C in the original unopened containers, DOW CORNING 92-007 Thermal Control Coating has a usable life of 12 months from the date of production.

PACKAGING

DOW CORNING 92-007 Thermal Control Coating is available in 0.45kg, 3.6kg and 18.1kg containers, net weight.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

WARRANTY INFORMATION - PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.