



PRODUCT DATA SHEET
CHEM-COAT 9-540-1 ALUMINUM
POLYUREA HYBRID ROOFING ELASTOMER

DESCRIPTION:

CHEM-COAT 9-540-1 Aluminum is a plural component polyurea hybrid roof coating.

USAGE:

CHEM-COAT 9-540-1 Aluminum is intended for use as a spray applied protective roof coating for use over concrete, metal, polyurethane foam and smooth built-up roofs. CHEM-COAT 9-540-1 Aluminum should not be used directly over rough built-up roofs unless polyurethane foam is used to create a smooth surface. CHEM-COAT 9-540-1 Aluminum can also be used over various single-ply membranes. Contact CHEMICAL DESIGN, Inc. for more information.

COLOR:

Aluminum. Note: Aluminum color is dispersed in the isocyanate component.

PHYSICAL PROPERTIES

WEATHERABILITY:

Q.U.V. Weatherometer exposure equivalent to 15 years with no visible deterioration or change in physical properties.

CHEMICAL RESISTANCE:

Good hydrolytic stability to 180°F. Good resistance to inorganic bases, acids, and hydrocarbon solvents. Fair resistance to oxygenated and chlorinated solvents.

TENSILE:

ASTM D-412
Strength: 1500 psi
Elongation: 200-300%
Permanent Set: 10% max.

HARDNESS:

ASTM D-2240
Shore A 85 ± 3

TEAR RESISTANCE:

ASTM D-624
Die C 125 pli

ABRASION RESISTANCE:

Excellent.

WATER VAPOR PERMEABILITY:

ASTM E-96
Method BW 0.025 perm In.

WATER ABSORPTION:

ASTM D-471
24 hours @ room temp. 1.0%

LIQUID COMPONENT PROPERTIES

SOLIDS:

Weight: 97%
Volume: 96%

VISCOSITY:

Poly Component:
550 ± 75 cps @ 77°F
Iso Component:
550 ± 70 cps @ 77°F

DENSITY:

Poly Component:
8.5-9.5 lbs./gal. (S.G. 1.03-1.14)
Iso Component:
9.25 lbs./gal. (S.G. 1.11)

V.O.C.:

27 grams/liter

FLASH POINT:

ASTM D-56 (TCC)
Greater than 200°F.

TOXICITY:

Iso component contains polymeric isocyanate requiring fresh air supply respirator, gloves, and protective clothing during application.

STORAGE

WARNING:

CHEM-COAT 9-540-1 Aluminum is sensitive to moisture. Store in a dry place between 45° and 85°F. Shelf life is six months for the "A" Side (Iso) and one year for the "B" Side (Poly) in original unopened containers. All containers must be sealed when not in use. Containers that have been opened

should be used within one week. To prolong the shelf life of opened containers, it is recommended that a blanket of nitrogen be applied to the container or desiccant cartridge inserted into the container opening.

STORAGE WHEN HIGH HUMIDITY IS PRESENT:

Upon opening of the "A" Side, one of the two following procedures must be followed:

DESICCANT CARTRIDGE:

Upon opening of the "A" Side for use, a desiccant cartridge should be inserted into one of the bung openings and the transfer pump tightly sealed in the other. To store unused portion of material, remove transfer pump and reseal drum plug. Leave desiccant cartridge in the drum during storage. When contents of the drum have been used, the desiccant cartridge can be used on another drum. You can continue to transfer the cartridge from drum to drum until the color indicates replacement.

NITROGEN BLANKET:

Nitrogen being heavier than air, can be put into a partially filled drum of the "A" Side forming a protective layer which will prevent any moisture from reaching the material in the drum. It takes only a small quantity of the nitrogen to form this layer and it will not mix with or contaminate the Iso.

APPLICATION

MIXING:

Care should be taken to ensure proper mixing of CHEM-COAT 9-540-1 Aluminum. Drums must be power mixed. Power mix "B" Side (Poly) component thoroughly before applying to re-suspend any desiccant which may have settled during shipment and storage. Mix all "A" Side (Iso) drums with a 1½ horsepower air driven mixer for a minimum of 15 minutes on the day it will be applied. The shaft must have collapsible blades to fit through the bung opening in the drum and should be long enough to reach the bottom of the drum. Three or four drums of the "A" Side (Iso) can be mixed in an hour when you start up in the morning. The ultra violet protection in CHEM-COAT 9-540-1 Aluminum coating is aluminum paste. The aluminum paste settles to the bottom of the drum during shipment and storage. Therefore, the "A" Side (Iso) drum has to be thoroughly mixed before spraying; otherwise the aluminum paste will be left on the bottom of the drum. Product sprayed with aluminum paste still on the bottom of the drum will not perform as designed and the coating will not last as long. The coating finish may also appear streaky if all drums are not mixed properly.

THINNING:

Do not thin.

EQUIPMENT:

Plural component spray equipment capable of maintaining a constant

temperature of 130° - 160°F, 1500 psi minimum pressure and a 1:1 volume mix ratio. It is recommended that only a Probler gun with a #1 or #2 tip be used for spraying. The Probler gun offers ease of application along with the best spray pattern. Through testing, it has been determined that installation at the proper temperature of 130° to 150°F, 1500 psi minimum pressure at the Probler gun utilizing a #1 mixing chamber, will produce the optimum membrane. Any deviations from this whether it may be temperature, pressure, size, type of gun, will all contribute to the production of a lesser product than the physicals stated on the CHEMICAL DESIGN Product Data Sheet. In other words, a #2 or #3 mixing chamber, may give you a wider spray pattern and apply more uniformly, but not have the same physical properties that are achieved with a #1 chamber. A gap gun or a GX-7 gun will produce a cured membrane but will not achieve the finished film that is specified by CHEMICAL DESIGN, Inc. Therefore, if a ten year full systems warranty is required from CHEMICAL DESIGN, you must use a Probler gun.

REACTIVITY:

Tack free time is 10-30 seconds when sprayed with hot plural component airless spray equipment.

CURE TIME:

Applied coating will set in 2-10 minutes at 70°F, depending on the film thickness and substrate temperature. Product can be

placed into service after four hours of cure time at 70°F minimum.

SURFACE PREPARATION:

Please refer to CHEMICAL DESIGN Roofing Specifications relating to your particular project.

SURFACE PREPARATION FOR ASPHALT CONTAMINATION:

Material applied over thick uncured asphalt will cause bleed through and possible delamination. We even find "black jack" type products on metal roofs, where repairs were attempted around stacks, units and even on seams and fasteners to be a problem. Whether the asphalt is totally cured or not has to be the contractor's determination, NOT CHEMICAL DESIGN, Inc.'s. If the asphalt product is old, hard and totally cured out, there is no problem going right over it with CHEM-COAT 9-540-1 Aluminum. If the asphalt is soft and you can move it with your finger, it is not totally cured. This means that there still might be oil present that could leach out and cause discoloration and/or delamination. If the asphalt is not too thick and you see no signs of oil, we have found it extremely helpful to coat those areas with 1 to 1½ gallons per 100 sq. ft. of our CHEM-COAT-550 Aluminum Single Component Moisture Cured Urethane. Let the CHEM-COAT 9-550-1 Aluminum cure and then recoat with CHEM-COAT 9-540-1 Aluminum. This forms a barrier between the asphalt and CHEM-COAT 9-540-1 Aluminum. If the asphalt is too thick or uncured, it must be removed.

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