

PRODUCT DESCRIPTION

A high solid epoxy cured with a polyamine-type curing agent, formulated with a wide range of chemical resistance and ease of handling.

USES/APPLICATIONS

- Food grade cargos
- Aqueous food
- Railcars

APPROVAL /CERTIFICATIONS

- PLASITE 9133 meets the FDA requirements for 21CFR 175.300 for aqueous food contact.

TEMPERATURE RESISTANCE

Dry film basis is 300°F/149°C for short periods. Continuous immersion temperatures depend on particular reagent.

CHEMICAL RESISTANCE

Excellent resistance to a wide range of chemicals and aqueous food solutions.

STANDARD COLORS

Light gray, White and Light Blue.

PACKAGING

PLASITE 9133 is available in one and five gallon kits that include the following:

One gallon kit includes:

- 1 1 gallon can of Part A
- 1 1 gallon can of Part B

Five gallon kit includes:

- 1 5 gallon bucket of Part A
- 1 3 gallon bucket of Part B

FILM THICKNESS

A 4-6 mil/100-150 microns film is produced in one multi-pass spray coat. A two coat application of 8-12 mil/200-300 microns is recommended film thickness when used as a lining for immersion services. Some services may require 12-15 mil/300-375 microns.

COVERAGE

One gallon of PLASITE 9133 will cover approximately 1,373 sq. ft./gal. For estimating purposes, 122 sq. ft./gal. will produce a 9 mil/225 microns film (20% loss included). Two coats will produce an 8-12 mil/200-300 microns film for immersion service.

STORAGE CONDITIONS

Keep PLASITE 9133 products tightly sealed in their original containers until ready for use. Store at 50-85°F/10-29°C and out of direct sunlight. PLASITE 9133 has a shelf life of two years from the manufacture date.

Proper jobsite storage of PLASITE 9133 is essential to its performance. Follow these general procedures for storage at the jobsite:

Store components (Part A and Part B) unopened, in a dry place, at 50-85°F/10-29°C, out of direct sunlight, and protected from the elements. Keep away from heat and flame.

For the 24-48 hours just prior to use, narrow the storage temperature to 70-85°F/21-29°C to facilitate ease of mixing.

THINNERS

PLASITE Thinner #71 - A medium fast thinner to be used under most conditions.

PHYSICAL CHARACTERISTICS

*Abrasion Resistance:.....94.22 mg (ASTM D-4060,CS-17 Wheels)

*Surface Hardness:.....84 seconds (ASTM D4366-84)

Solids:.....Weight: 92.9% ± 2%

Volume: 85.6% ± 2%

Pot Life:.....70°F/21°C: 2 hours

Shelf Life:.....24 months @70°F/21°C

Shipping Weight:.....15 lbs./gal.

Thermal Shock: Unaffected 5 cycles minus

70°F/-56°C to plus 200°F/93°C

Gloss:......58 @ 60°

*Note: Above tests were conducted on film cured at 150°F/66°C.

PLASITE Thinner #69 - A special blend of fast evaporating solvents containing no aromatic hydrocarbons.

It will always be necessary to thin the coating. The applicator must make exact thinner adjustments based on his equipment, air and surface temperatures. The following thinning guidelines are approximate. Normal application temperatures and conditions will require the addition of approximately 5-15% thinner by volume with approximately 5% additional thinner added for each 5°F/3°C of increased temperature. It is recommended that the amount of thinner included on each order amount to approximately 20% of the coating order.

CLEANUP THINNER: Thinner #71

VOC CONTENT

	Coating as Supplied (Determined Theoretically)		Thinned 20% by Volume with PLASITE Thinner #71 or #69 (Determined Theoretically)	
Color	Lbs./Gal.	g/L	Lbs./Gal.	g/L
White	1.00 ± 2%	119 ± 2%	1.96 ± 2%	235 ± 2%

SUBSTRATE PREPARATION**Steel****High Temperature & Immersion Service**

All sharp edges shall be ground to produce a radius and all imperfections such as skip welds, delaminations, scabs, slivers and slag shall be corrected prior to abrasive blasting. Skip welds shall be welded solid.

Degrease surface prior to sandblasting. Organic solvents, alkaline solutions, steam, hot water with detergents or other systems that will completely remove dirt, oil, grease, etc. may be used. Used tanks may require additional decontamination.

The surface shall be blasted to a minimum SSPC-SP10 or NACE No. 2 near white metal surface using a Venturi blast nozzle supplied with 80-100 psi. An anchor pattern or "tooth" in the metal shall correspond to approximately 20 to 25% of the total film thickness of the coating.

Note: Contaminated grit shall not be used for the finish work.

The blasting media used shall be a natural abrasive, steel grit, or slag grit (similar or equal to BLACK BEAUTY®). These abrasives shall be sharp with a hard-cutting surface, properly graded, dry and of best quality. The media shall be of proper size to obtain the specified anchor pattern and shall be free of objectionable contaminants.

The anchor pattern shall be sharp and no evidence of a polished surface is allowed.

PLASITE® 9133

Remove all traces of grit and dust with a vacuum cleaner or by brushing. Care must be taken to avoid contaminating the surface with fingerprints or from detrimental material on the workers' clothes.

The surface temperature shall be maintained at a minimum of 5°F/3°C above the dew point to prevent oxidation of the surface. The coating shall be applied within the same day that the surface has been prepared. Visible oxidation or condensation is not allowed.

Service in Corrosive Atmosphere

Degrease as described above.

SSPC-SP10 or NACE No. 2 (near white metal blast cleaning) - strong fumes and splash spill.

SSPC-SP6 or NACE No. 3 (commercial blast cleaning) - high temperature fumes.

SSPC-SP7 or NACE No. 4 (brush-off blast cleaning) - chemical atmosphere and weathering.

SSPC-SP3 (power tool cleaning) - chemical atmosphere and weathering.

When utilized, inhibitive primer should be applied as soon as possible after surface preparation.

Surface preparation for chemical atmosphere and weathering must result in a relatively rough surface. If the steel is new and this type of surface preparation does not leave a reasonably rough surface on the steel, then the heavy film system is not recommended.

Depending on service conditions, film thickness requirements may be reduced. Contact Carboline Technical Service Department for further information.

Concrete

Contact Carboline's Technical Service for a recommendation.

Galvanized Steel

Contact Carboline's Technical Service for a recommendation.

Aluminum

Surface shall be clean and grease-free with a blast produced anchor pattern or "tooth" as described earlier under STEEL. In addition, the blasted surface shall be given a chemical treatment such as:

ALODINE 1200S available from Henkel Surface Tech

IRIDITE 14-2 produced by MacDermid Incorporated

OAKITE CRYSCOAT 747LTS and OAKITE CRYSCOAT ULTRASEAL produced by Oakite Products

For immersion, blasting with sharp grit followed by the chemical surface treatment is required.

Note: On metallic surfaces prepared only by chemical etching, the total coating film thickness applied should be restricted to only half the film normally applied to blasted surfaces. This reduced film thickness should be considered during selection of the coating for the service and the type of surface preparation performed.

APPLICATION GUIDELINES

Before mixing and applying any material, make sure environmental conditions are satisfactory for application. Weather conditions, and especially dew point, should be constantly monitored in light of the work being done. Final blast cleaning and application of the lining system must only be performed when it is clear the temperature of the steel substrate will not fall within 5°F/3°C of the dew point. Dehumidification and/or temperature control may be necessary to meet this requirement. Use a surface thermometer to frequently monitor the temperature of the steel substrate.

Mixing

The curing agent and resin are supplied in separate containers at a 2:1 ratio. For splitting purposes, use one part curing agent to two parts resin

by volume. Thoroughly mix resin, then add curing agent slowly and mix completely with resin. The coating should stand approximately 15 minutes after the curing agent has been thoroughly mixed.

Spray

All spray equipment should be thoroughly cleaned and the hose, in particular, should be free of old paint film and other contaminants. Use standard production type spray guns:

GUN	FLUID	AIR
DeVilbiss JGA-510	E	797
Binks #2001	66-SS	63-PB
Graco P800	04	02

When airless spray equipment is used, the recommended liquid pressure is 1500-1800 psi with tip size from .017-.021 inches. Thinning requirements are more than for conventional spray.

Air supply shall be uncontaminated. Adjust air pressure to approximately 50 psi at the gun and provide 5-10 lbs. of pot pressure. Adjust spray gun by first opening liquid valve and then adjusting air valve to give an 8-12 inch wide spray pattern with best possible atomization.

Apply a "mist" bonding pass.

Allow to dry approximately one minute but not long enough to allow film to completely dry.

Apply crisscross multi-passes, moving gun at fairly rapid rate, maintaining a wet appearing film. Fast multi-passes may be applied until you have a film thickness of approximately 4-6 mil/100-150 microns (approximately 5-7 wet mil/125-175 microns). Repeat this procedure for the second coat to obtain an 8-12 mil/200-300 microns DFT.

Overcoat time will vary both with temperature and ventilation and will require from 10-12 hours at 70°F/21°C for enclosed spaces. Less time is required for exteriors. Remove all overspray by dry brushing or scraping if required.

Equipment must be thoroughly cleaned immediately after use with a PLASITE thinner to prevent the setting of the coating.

Note: Prior to spray application, stripe brush all weld attachments and surface irregularities using PLASITE 9133 thinned a minimum of 50% by volume with PLASITE Thinner #71.

Brush

Recommended for small areas and repairs only. Use a high quality brush, and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. "Flow" the coating on rather than try to "brush out." Allow to dry tack-free. Repeat until sufficient film thickness is obtained. Normally, a film thickness of 2.5-3 mil (62-75 microns) can be obtained per coat by this method.

CURING

Surface will normally be tack-free in 8-10 hours at 70°F/21°C.

For general immersion service requirements, curing will normally take place in 5 days at 90°F/32°C, 7 days at 70°F/21°C or 14 days at 50°F/10°C. This coating should not be applied when air temperature or temperature of surface to be coated is below 50°F/10°C.

Where coating is to be subject to immersion in aqueous food, it is required that the final cure be 225°F/107°C (metal temperature) for four hours minimum.

Listed below are a few curing schedules that may be used for time and work planning. Prior to raising the metal to the force curing temperature, it is necessary that an air dry time of 2-5 hours at temperatures from 70-100°F/21-38°C be allowed. After the air dry period has elapsed, the temperature should be raised by approximately 30°F/17°C each 30 minutes until the desired force curing temperatures are reached.

METAL TEMPERATURE	CURING TIME
150°F/66°C	12 Hrs
175°F/79°C	10 Hrs
200°F/93°C	6 Hrs
225°F/107°C	4 Hrs

November 2007 replaces January 2004

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Final cure may be checked by exposing coated surface to MIBK for 10 minutes. If no dissolving and only minor softening of film occurs, the curing can be considered complete. The film should reharden after exposure if cured.

INSPECTION

Refer to Plasite Bulletin PA-3, Section 3, for inspection requirements.

RECOMMENDATIONS

- Apply only on a clean, sound, properly prepared substrate.
- Minimum ambient, material and surface temperatures are 50°F/10°C at the time of application.
- Maximum ambient, material and surface temperatures are 110°F/43°C, 90°F/32°C and 125°F/52°C respectively, at the time of application.
- Relative humidity should be between 0-80%.
- Substrate temperature should be 5°F/3°C above the dew point.
- Application and curing times are dependent upon ambient conditions. Consult Carboline's Technical Service Department if conditions are not within recommended guidelines.

PRECAUTIONS

- PLASITE Thinner #71 or acetone is recommended for clean up of the PLASITE 9133 material.
- Before handling and application of this material consult the MSDS sheets. As with any product, those handling PLASITE 9133 materials should employ proper safety practice. Hypersensitive persons should wear protective clothing, gloves, and use protective cream on any exposed areas.
- When PLASITE 9133 is used as a tank lining or in an enclosed area circulation should be used during and after the installation. Circulation can be discontinued once the material has cured. The ventilation equipment should be capable of preventing the solvent concentration from reaching the lower explosion level for the solvents used. The applicator should monitor the exposure levels or use MSHA/NIOSH approved air respirators.

NOTES

- Material Safety Data Sheets on PLASITE 9133 are available upon request.
- Specific information regarding the chemical resistance of PLASITE 9133 can be found by contacting Carboline's Technical Service Department.
- A staff of technical service engineers is available to assist with product application, or to answer questions related to Carboline products.
- Requests for technical literature or service can be made through local sales representatives and offices worldwide.

SAFETY **READ THIS NOTICE** **SAFETY AND MISCELLANEOUS EQUIPMENT**

For tank lining work or enclosed spaces, it is recommended that the operator provide himself with clean coveralls and rubber soled shoes and observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis.

THE SOLVENT IN THIS COATING IS FLAMMABLE AND CARE AS DEMANDED BY GOOD PRACTICE, OSHA, STATE AND LOCAL SAFETY CODES, ETC. MUST BE FOLLOWED CLOSELY. Keep away from heat, sparks and open flame and use necessary safety equipment, such as, air mask, explosion-proof electrical equipment, non-sparking tools and ladders, etc. Avoid contact with skin and breathing of vapor or spray mist. When working in tanks, rooms and other enclosed spaces, adequate ventilation must be provided. Refer to Plasite Bulletin PA-3. Keep out of the reach of children.

CAUTION - Read and follow all caution statements on this product data sheet, material safety data sheet and container label for this product.

This data sheet provides standard information on the coating and application procedure. Since varying conditions may not be covered, consult with your local sales representative or Carboline's Technical Service Department for a detailed application and inspection procedure.

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