carboline®
Coatings - Linings - Fireproofing

Plasite® 9053

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Epoxy Polyamine
Description	A low VOC water-resistant epoxy coating polymerized with a polyamine-type curing agent. Primarily as a tank lining for water, including deionized or distilled water at elevated temperatures. Special pigmentation provides additional film undercutting protection in high temperature brine solutions. Complies with the requirements of the United States Food and Drug Administration 21 CFR 175.300 for direct food contact use.
Features	• Low VOC • Water-resistant • Protection in high temperature brine solutions • Complies with the United States Food and Drug Administration 21 CFR 175.300 for direct food contact use.
Color	U79P (Charcoal Gray)
Dry Film Thickness	5 - 8 mils (127 - 203 microns) per coat 8 - 12 mils (203 - 305 microns) in two or more coats for Sparger Hoppers 12 - 16 mils (305 - 406 microns) in two or more coats for DI water, distilled water, tap water, waste and brine water
Typical Uses	Tank lining for water
Solid(s) Content	75% ± 2% by volume
Coverage Rate	1,171 mil ft^2/gallon ± 2% (theoretical) Two multi-pass spray coats will produce the DFT recommended for immersion service. 66.9 ft^2/gallon will produce a 12 to 16 mil DFT film 93.7 ft^2/gallon will produce an 8 to 12 mil DFT film (20% loss included)
VOC Values	**As Supplied** : 1.67 lbs/gal (200 g/l) Plasite Thinner #71 : 10% by volume 2.18 lbs/gal (261 g/l)
Dry Temp. Resistance	Non-Continuous: 350°F (177°C)
Temperature Resistance (Immersion)	Continuous immersion temperatures depend on particular reagent and temperatures.

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.
Steel	Immersion: SSPC-SP10 Non-Immersion: SSPC-SP6 Surface Profile: 2.0-3.0 mils (50-75 micron)
Galvanized Steel	SSPC-SP16 or SSPC-SP11
Concrete or CMU	Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13, latest edition. Abrade to remove all laitance, loose concrete, etc. and to create surface profile in accordance with the appropriate ICRI CSP 2-5. Linings surface prep.

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
Atlas Cell	Plasite 9053	No effect after one year of exposure to unpressurized 212 °F (100 °C) boiling DI water
Thermal Shock	Plasite 9053	Unaffected in 5 cycles, minus 70 °C to plus 212 °F (-56.7 °C to plus 100 °C)

Chemical Resistant to - Fresh Water, Sea Water, & Brines
NOTE: Plasite 9053 is not suitable for service in corrosive acids or oxidizing service for continuous immersion.

MIXING & THINNING

Mixing	Mix Part B into Part A using mechanical agitator, making sure all of Part B is completely mixed with Part A. Do not reduce or leave out any of the Part B. Mix well until obtaining a smooth liquid free of any unmixed particles of pigment. Add Part C and mix well. Part A is the liquid resin. Part B is the pigment and Part C is the curing agent. Splitting of kits is not recommended. If necessary, mix Part A and Part B thoroughly and proportion mixture accurately with Part C. Continuous slow agitation during use is recommended. The coating should stand approximately 15 minutes after the curing agent has been thoroughly mixed.
Thinning	Plasite Thinner 71 is recommended under most conditions. The amounts of thinner required will vary depending on air and surface temperatures and application equipment. Normal application temperatures and conditions will require the addition of approximately 10% by volume with approximately 5% additional thinner added for each 5 °F (3 °C) of increased temperature. Airless spray equipment and above normal temperatures require additional thinning. It is recommended that the amount of thinner included on each order amount to approximately 20% of the coating order.
Pot Life	2 to 3 hours at 70 °F (21 °C)

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Spray Application (General)	All spray equipment should be thoroughly cleaned and the hose, in particular, should be free of old paint film and other contaminants.
Conventional Spray	Use standard production type spray guns. Air supply shall be uncontaminated. Adjust air pressure to approximately 50 lbs. at the gun and provide 5 to 10 lbs. of pot pressure. Adjust spray gun by first opening liquid valve and then adjusting air valve to give an 8” to 12” wide spray pattern with best possible atomization.
Airless Spray	When airless spray equipment is used, the recommended liquid pressure is 1500 to 1800 psi with tip size from 0.017” to 0.021”. Thinning requirements are more than for conventional spray. Continuous mixing during use is recommended.
Brush	Recommended for small areas and repairs only. Use a high quality brush and apply a very light crisscross brush coat.

APPLICATION PROCEDURES

General

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 maintaining an even continuous wet appearing film. This technique will enable an 8 to 10 mil wet film (approximately 6 to 8 mils DFT) to be applied per multi-pass coat. Repeat this procedure for second coat to obtain a film of 12 to 16 mils, noting the overcoat instructions below.

Overcoat time will vary both with temperature and ventilation. Normally 8 to 12 hours at 70 °F (21 °C) is required for enclosed spaces, with additional time needed if coating is being applied at lower temperatures. Remove all overspray by dry brushing or scraping if required. Equipment must be thoroughly cleaned immediately after use with Plasite thinner to prevent the setting of the coating.

Note: All welds, pits and rough metal areas should be coated by brush prior to spray application.

Brush

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 Steps 3 and 4 until sufficient film thickness is obtained. Normally, a film thickness of 3 to 4 mils can be obtained per coat by this method.

CURING SCHEDULE

Surface Temp.	Final Cure Immersion
50°F (10°C)	14 Days
60°F (16°C)	10 Days
70°F (21°C)	7 Days

The curing schedule above references curing times for IMMERSION SERVICE

This coating should not be applied when air temperature or temperature of surface to be coated is below 50 °F (10 °C). As ventilation and other factors affect the time/cure of coatings, additional time allowance is recommended at any temperature if cure time is questioned. Plasite 9053 should be force cured for all taste sensitive immersion services and highly corrosive service. Surface will normally be tack-free in 6 to 8 hours at 70 °F (21 °C).

Force curing at elevated temperature does increase resistance to certain exposures, therefore, when exposure is severe, force curing is recommended to obtain maximum resistance.

Surface Temp.	Final Cure Immersion
130°F (54°C)	18 Hours
140°F (60°C)	10 Hours
150°F (66°C)	6 Hours
160°F (71°C)	5 Hours
170°F (77°C)	4 Hours
180°F (82°C)	3 Hours
190°F (88°C)	2.5 Hours
200°F (93°C)	2 Hours

Listed are some **force curing** schedules that may be used for time and work planning. Prior to raising metal to the force curing temperature, allow 2 to 5 hours air dry time at 70-100 °F (21-38 °C). After the appropriate air dry period, raise metal temperature approximately 30 °F each 30 minutes until the desired force curing metal temperature is reached.

CLEANUP & SAFETY

Cleanup

Use Plasite Thinner 71. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety

Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Keep container closed when not in use.

CLEANUP & SAFETY

Ventilation	When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.
Caution	This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	24 months at 70 °F (21 °C) Material in stock should be turned upside down every 3 months
Storage Temperature & Humidity	Keep product tightly sealed in original container until ready for use. Store in a dry, cool, well-ventilated space out of direct sunlight.
Shipping Weight (Approximate)	1 Gallon Kit - 20.1 lbs (9.12 kg) 5 Gallon Kit - 102.5 lbs (46.49 kg)
Flash Point (Setaflash)	Part A: 24 °F (-4.5 °C) Part B: NA Part C: 53 °F (12 °C)

WARRANTY

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