RUST-OLEUM®

TECHNICAL DATA

RUST-O-POXY® HIGH PERFORMANCE EPOXY 9100 SYSTEM

DESCRIPTION Two-Component, 1:1 Mix, High Solids Epoxy Coating

USES This high solids epoxy mastic coating is suitable for use in moderate to severe environments. It is specifically designed for application directly on sound rusted steel with minimum surface preparation. It can also be used on clean steel, galvanized metal, concrete (including concrete floors), previously coated and slightly damp surfaces. It may also be used for water immersion service, using 9100 standard premix bases only with 9102 Immersion Activator. (Note: Do not use for immersion service in potable water tanks). The 9100 System can be used indoors or out. While exposure to sunlight and certain interior lighting conditions causes fading and chalking of all epoxy type coatings, these changes are cosmetic in nature only and film integrity and performance will not be adversely affected.

APPEARANCE Available in 13 gloss premix standard colors and tint bases. Epoxy coatings will yellow with age. This is most noticeable with interior applications of white or light colors which are not subjected to bleaching from Sunlight. **Note:** 9102 Immersion Activator and 9104 Fast-Cure Activator produce a semi-gloss finish. Also using the 9104 Fast-Cure Activator may result with a slight color shift when compared with products using the standard 9101 Activator.

PRODUCTS

9101 Activator	9144 Safety Yellow	9192 White
9102 Immersion Activator	9145 Equipment Yellow	9105 Red Base
9103 Low Temperature Activator		9165 Regal Red 9106 Yellow
9104 Fast-Cure Activator	9168 Tile Red	9107 Masstone Base
9115 Aluminum	9171 Dunes Tan	9108 Deep Base
9122 Marlin Blue	9179 Black	9109 Light Base
9125 Safety Blue	9182 Silver Gray	
9133 Safety Green	9186 Navy Gray	

The tintbases use the Rust-Oleum 2020 Colorants

RECOMMENDED PRIMERS 9100 System is self-priming

COMPATIBLE PRIMERS 9360, 9370 and 9380. These primers have a 30 day recoat window.

COMPATIBLE TOPCOATS 5200 High Performance Acrylic Finishes
9400 Rust-O-Thane® Finishes (Do not use 9400 Finishes over 9115 Aluminum).
9700 High Solids Polyurethane (Do not use 9700 Finishes over 9115 Aluminum).
9800 Urethane Mastic (Do not use 9800 Finishes over 9115 Aluminum).

PHYSICAL PROPERTIES (Calculated values are shown and may vary slightly from the actual manufactured material)

RESIN TYPE	Polyamide or Polyamine Converted Epoxy
INHIBITIVE PIGMENT	Calcium Borosilicate
SOLVENTS	Xylene, Methyl Isobutyl Ketone and 1-Methoxy-2-propanol
VOLATILE ORGANIC COMPOUNDS	Less than 340 grams/liter or 2.84 pounds/gallon (activated)
MIXING RATIO	1:1 Activator: Base (By Volume)
DRY HEAT RESISTANCE	300°F (149°C) Color Shift May Occur Above 150°F (66°C). 125°F (52°C) for water immersion service using 9102 Immersion Activator with standard premix bases.
SHELF LIFE	3 years in unopened containers. However, settling may occur and mechanical mixing may be necessary to redisperse pigment.

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Physical Properties Continued (Activated Material)	**9101 Activator**		**9102 Immersion Activator**		**9103 Low Temperature Activator**	**9104 Fast-Cure Activator**	
Weight Per Gallon	11.4 – 12.6 lbs.		11.4 – 12.6 lbs.		9.3 – 10.4 lbs.	12.0 – 13.0 lbs.	
Weight Per Liter	1.4 – 1.5 Kg		1.4 – 1.5 Kg		1.1 – 1.2 Kg	1.4 – 1.6 Kg	
Solids by Weight	86 – 89%		79 – 82%		78 – 81%	81 – 83%	
Solids by Volume	78-81%		65-68%		72-75%	67-69%	
Recommended Dry Film Thickness Per Coat (DFT)	5 – 8 mils 125 – 200 µ		5 – 8 mils 125 – 200 µ		5 – 8 mils 125 – 200 µ	5 – 8 mils 125 – 200 µ	
Wet Film to Achieve DFT (Unthinned Material)	6.5 – 10.5 mils 162.5 – 262.5 µ		7.5 – 12.0 mils 187.5 – 300 µ		7 – 11 mils 175 – 275 µ	7.5 – 11.5 mils 187.5 – 287.5 µ	
Theoretical Coverage @ 1 mil DFT (25µ)	1250-1300 sq ft/gal 30.8-32.0 m²/L		1045-1090 sq ft/gal 25.7-26.8 m²/L		1155-1200 sq ft/gal 28.4-29.5 m²/L	1075-1110 sq ft/gal 26.4-27.3 m²/L	
Practical Coverage @ Recommended DFT (Assumes 15% Material Loss)	125-225 sq ft/gal 3.1-5.5 m²/L		100-175 sq ft/gal 2.5-4.3 m²/L		125-200 sq ft/gal 3.1-5.0 m²/L	115-190 sq ft/gal 2.8-4.7 m²/L	
Induction Period	None required		30 minutes (60 min. between 60-70˚F)		None required	15 minutes	
Pot Life†	70˚F (21˚C) †	90˚F (32˚C) †	70˚F (21˚C) †	60˚F (15˚C) †	60˚F (15˚C) †	70˚F (21˚C) †	90˚F (32˚C) †
2 gallons		1-2 hrs			2-4 hrs		1-2 hrs
10 gallons	2-4 hrs Approx 2hrs	Less than 1 hr	2-4 hrs Approx 2hrs	3-5 hrs Approx 3hrs	Approx 2hrs	2-4 hrs Approx 2hrs	Less than 1 hr
Dry Times @ 50%RH	70˚F (21˚C)	50˚F (10˚C)	70˚F (21˚C)		40˚F (5˚C)	70˚F (21˚C)	50˚F (10˚C)
Tack Free	6-8 hrs	12-24 hrs	6-8 hrs		16-20 hrs	4 hrs	8 hrs
Recoat	16-72 hrs	72-96 hrs	16-72 hrs		24-72hrs	4 hrs	8 hrs
Handle	6-12 hrs	48-72 hrs	8-14 hrs		22-26 hrs	5 hrs	10 hrs

† Pot life is affected by air temperature, amount of material activated and quantity of thinner used. Avoid activating large quantities at temperatures above 80°F (27°C). At temperatures above 90°F (32°C), the pot life of unthinned material in 5-gallon pails may be very short (less than one hour). In hot weather, thin activated material with 10% 160 Thinner, or 165 Thinner for 9102 activated material.

PACKAGING 1 and 5 gallon containers

SPECIFICATION AND PERFORMANCE ALTERNATES All standard colors, tint bases and activators are USDA acceptable under FSIS Directive 11000.4 (Rev. 1), November 24, 1995. Color subject to approval of USDA Inspector. Agriculture Canada accepted - 9115, 9145, 9165, 9171, 9179, 9186, 9192 and 9101.

SURFACE PREPARATION

ALL SURFACES Remove all dirt, grease, oil, salt or other contaminants by washing the surface with 3599 Industrial Pure Strength® Cleaner/Degreaser, detergent, or other suitable cleaner. Rinse thoroughly with fresh water and allow to fully dry. Thoroughly cured, hard or glossy previous coatings which are very smooth may require scuff sanding to maximize adhesion.

STEEL Hand tool (SSPC-SP-2) or power tool (SSPC-SP-3) clean to remove loose rust, scale and deteriorated coatings to obtain a sound rusted surface. For optimum corrosion resistance, abrasive blast to commercial grade SSPC-SP-6, with a blast profile of 1 - 2

mils (25 - 50 µ).

STEEL (IMMERSION) Abrasive blast clean to a minimum SSPC-SP-10 Near White Grade (NACE 2) and achieve a surface profile of 1.5 - 3 mils. All weld spatter must be removed along weld seams, rough welds should be ground smooth, and all sharp edges should be ground to a smooth radius.

GALVANIZED METAL Remove oil, dirt, grease and other chemical deposits with 3599 Industrial Pure Strength® Cleaner/Degreaser or by solvent, detergent or steam cleaning. Remove loose rust, white rust or deteriorated old coatings by hand or power tool cleaning or brush-off blasting. Rinse thoroughly with fresh water and allow to fully dry.

CONCRETE OR MASONRY Scrape and wire brush or power tool clean to remove any loose or unsound concrete, masonry, or deteriorated coating. Acid etch smooth concrete with 108 Cleaning and Etching Solution. New concrete or masonry must cure 30 days before coating. For water immersion service concrete should be acid etched or abrasive blasted to remove laitance, unsound materials and all previous coatings. Any concrete surface must be protected from moisture transmission from uncoated areas.

MIXING

9100 System Base and 9101, 9102, 9103 and 9104 Activator components are supplied in one-gallon cans and five-gallon pails. Before mixing, stir the contents of each container thoroughly, and then combine the two components at a 1:1 ratio by volume in a container large enough to hold the total volume. Mix thoroughly for 2 - 3 minutes. Power mixing is preferred. Do not mix more material than you plan to use within the pot life as listed on page 2.

APPLICATION

Airless spray is the preferred method of application. However, brush, roller, or air-atomized spray may also be used. Refer to table on page 4 for thinning recommendations. For proper performance, a dry film thickness of 5 to 8 mils per coat is required. Excessive brushing or rolling may reduce film thickness. **Apply a second coat if necessary to achieve the recommended film thickness.**

Use 9100 material activated with 9101 Activator or 9104 Fast-Cure Activator at air and surface temperatures between 50°F and 100°F (10°C to 38°C) and when the surface temperature is at least 5°F (3°C) above the dew point. Dry times vary with temperature; see dry times in table on page 2.

Low curing temperatures and/or condensation on the film while curing can effect appearance in the form of an amine blush. This can generally be removed with soap and water washing, however, in a case of extreme blushing, the coating performance may be slightly effected.

Low Temperature Application (9103 Low Temperature Activator)

Use 9103 Low Temperature Activator when application temperatures are between 40°-60°F (5°-15°C). Follow the same mixing procedure listed above. All materials should be mixed at temperatures between 60°F and 80°F (15°C-27°C).

Apply only when air and surface temperatures are between 40° and 60°F (5°-15°C) and surface temperature is at least 5°F (3°C) above the dew point. Do not apply the material if the temperature is expected to fall below 40°F in the first 24 hours of cure. Also, do not use the 9103 if the ambient temperature is above 60°F. The pot life would be greatly reduced and full performance may not be obtained. At 40°F the full cure will be achieved in 7 days.

Water Immersion Service (9102 Immersion Activator)

The 9100 System may be used for water immersion service. Use 9102 Immersion Activator with standard 9100 premix bases; do not use 9102 with tint bases. This system may be used for both salt and fresh water; do not use for the insides of potable water tanks. Follow mixing procedures listed above. Allow the material a 30 minute induction period before use, 60 minutes at 60°F-70°F (15°C-21°C). Refer to table on page 2 for details regarding potlife.

Apply this material when air and surface temperatures are between 60°F-100°F (15°C-38°C), surface is at least 5°F (3°C) above the dew point and relative humidity is below 85%. Apply two coats alternating color between coats to assure complete hide. Apply each coat at dry film thickness of 5-8 mils. On uncoated masonry, thin

first coat 10% with 165 Thinner to improve penetration. **Allow seven days cure after application of the second coat before immersion.**

POOLS

When used with 9102 activator, the 9100 system premix bases can be used as a pool coating over existing epoxy pool coatings, new bare concrete, plaster, gunite, and fiberglass.
The pool must be completely empty and dry before coating. After pool is emptied, this typically requires 7-10 days depending on temperature and humidity. To test the dryness of concrete, gunite or plaster pool surfaces, securely tape a 2 ft x 2 ft piece of clear plastic onto a horizontal and vertical surface at the deep end of the pool. Check after 24 hours. If water condensation is visible under the plastic, this is an indication that the surface is not completely dry, and NOT suitable for coating. Allow additional dry time and retest. Follow surface preparation, mixing and application instructions. Avoid painting in midday sun.
Application is recommended early in the day or late in the afternoon when at least 2 hours of sunlight remain after completion of the job. Allow minimum of 5-7 sunny days cure before filling pool. Early contact with water can cause premature fading, chalking and blistering. Super chlorinated water can cause a bleached out look. Sunlight and UV will cause chalking and fading.
Do NOT use over: 1) chlorinated rubber 2) synthetic rubber 3) vinyl 4) acrylic

THINNING

Thinning is normally not required, except for air-atomized spray. For air-atomized spray application, thin only up to 10% by volume with 160 Thinner after the components have been mixed. Use the 160 Thinner to clean tools and equipment. For material activated with 9102 use up to 10% of 165 Thinner for air-atomized and up to 5% of 165 Thinner for airless spray. Clean up with 165 Thinner.
NOTE: Addition of more than 10% of 160 or 165 Thinner will cause VOC to exceed 340 g/l. In this case, 333 VOC exempt thinner can be used if needed.

EQUIPMENT RECOMMENDATIONS (Comparable Equipment Also Suitable)

BRUSH — Good quality natural or synthetic bristle brush recommended.

ROLLER — Good quality lamb's wool or synthetic fiber (3/8 - 1/2 inch nap) recommended.

AIR-ATOMIZED SPRAY

	Fluid Tip	**Fluid Delivery**	**Atomizing Pressure**
Pressure	.055-.070	10-16 oz/min	25-60 psi
Siphon	.055-.070	-	25-60 psi
HVLP Various	.043-.070	8-10 oz/min	10 psi (at tip)

(Air cap for highest pressure)

AIRLESS SPRAY

Fluid Pressure	**Fluid Tip**	**Filter Mesh**
1800-3000 psi	.013-.017	100

HOT SPRAY — Recommended Temperature 120°-140°F (49°-60°C)

SAFETY INFORMATION

Flash Point — 80°F (27°C) Setaflash
110°F (43°C) - 9101 Activator, 9102 Immersion Activator, 9103 Low Temperature Activator
68°F (20°C) - 9104 Fast-Cure Activator

Lead Content. No lead has been deliberately added.

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY AFFECT BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

MAY CAUSE ALLERGIC SKIN REACTION. FOR INDUSTRIAL OR COMMERCIAL USE ONLY. SEE THE PRODUCT MATERIAL SAFETY DATA SHEET (MSDS) AND LABEL WARNINGS FOR ADDITIONAL SAFETY INFORMATION.

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