RUST-OLEUM® HIGH PERFORMANCE®

9100 SYSTEM
DTM EPOXY MASTIC

DESCRIPTION AND USES

The 9100 System DTM Epoxy Mastic is a two-component, high solids epoxy coating 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 the DTM Epoxy Mastic standard premix bases only with 9102402 Immersion Activator. (Note: Do not use for immersion service in potable water tanks).

The 9100 System complies with USDA FSIS regulatory sanitation performance standards for food establishment facilities. This coating is impervious to moisture and easily cleaned and sanitized.

Note: 9102402 Immersion Activator and 9104402 Fast-Cure Activator produce a semi-gloss finish. Also, using the 9104402 Fast-Cure Activator may result with a slight color shift when compared with products using the 9101402 Standard Activator.

The 9100 System DTM Epoxy Mastic can be used indoors or out. 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. Exterior exposure over time will cause fading and chalking with all epoxy type coatings. These changes are cosmetic in nature only and film integrity and performance will not be adversely affected.

MPI #98 Certified[1]

[1] Refer to the MPI website for the most current lsiting of MPI certified products.

PRODUCTS

BASE COMPONENT

1-Gallon	5-Gallon	Description
9115402	—	Aluminum
9122402	—	Marlin Blue
9145402	—	Equipment Yellow
9165402	—	Regal Red
9168402	—	Tile Red
9171402	9171300	Dunes Tan
9179402	—	Black
9182402	9182300	Silver Gray
9186402	9186300	Navy Gray
9192402	—	White
266693	266697	Buff
9125402	—	Safety Blue
9133402	—	Safety Green
9144402	9144300[2]	Safety Yellow
204005	297081	Safety Orange
204006	297079	Safety Red

[2] Made-to-Order only. Contact Rust-Oleum Customer Service for details.

PRODUCTS (cont.)

ACTIVATOR

1-Gallon	5-Gallon	Description
9101402	9101300	Standard Activator
9102402[3]	9102300[3]	Immersion Activator
9103402	9103300[2]	Low Temp Activator
9104402[3]	A910008300[3]	Fast Cure Activator

[2] Made-to-Order only. Contact Rust-Oleum Customer Service for details
[3] Not for use with tint bases.

TINT BASES

1-Gallon	5-Gallon	Description
9105405	—	Red
9106405	—	Yellow
9107405	9107375	Masstone
9108421	9108381	Deep
9109408	9109388	Light

Tint bases use the Rust-Oleum 2020 Colorants. Selected color formulas are available for use with Evonik 844 Colorants. Contact Rust-Oleum for the 844 formula book.

Agriculture Canada accepted: 9115, 9145, 9165, 9171, 9179, 9186, 9192 and 9101.

COMPANION PRODUCTS

RECOMMENDED PRIMERS

System is self-priming

COMPATIBLE PRIMERS

Extended Recoat Epoxy Primers (9300 System)

COMPATIBLE TOPCOATS

3300 System Acrylic Aliphatic Urethane
3700 System DTM Acrylic Enamel
3100 System Speedy-Dry DTM Acrylic Enamel
9400 System High Gloss Polyester Urethane[4]
9700 System 250 VOC Acrylic Polyester Urethane[4]
9800 System DTM Urethane Mastic[4]

[4] Do not use over 9115402 Aluminum

PRODUCT APPLICATION

SURFACE PREPARATION

ALL SURFACES: Remove all dirt, grease, oil, salt and chemical contaminants by washing the surface with Krud Kutter Original Cleaner/Degreaser or other suitable cleaner. Rinse with fresh water and allow to dry.

STEEL: Hand tool (SSPC-SP-2) or power tool (SSPC-SP-3) clean to remove loose rust, scale, and deteriorated previous 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).

PRODUCT APPLICATION (cont.)

SURFACE PREPARATION

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 wield seams, rough welds should be ground smooth, and all sharp edges should be ground to a smooth radius.

PREVIOUSLY COATED: Previously coated surfaces must be sound and in good condition. Smooth, hard, or glossy finishes should be scarified by sanding or sweep blasting to create a surface profile. The DTM Epoxy Mastic is compatible with most coatings, but a test patch is suggested.

GALVANIZED METAL: Remove oil, dirt, grease and other chemical deposits with Krud Kutter Original Cleaner / Degreaser or other suitable cleaner. 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: New concrete or masonry must cure 30 days before coating. Any concrete surface must be protected from moisture transmission from uncoated areas. Remove all loose, unsound concrete.

CONCRETE FLOORS: Remove laitance and create a surface profile by either acid etching with Rust-Oleum 108402 Cleaning and Etch Solution, or by grinding. If etching, consult with 108 Clean & Etch Solution Technical Data Sheet for complete application instructions. Rinse thoroughly and allow to dry. The concrete must be fully dry prior to coating application. After etching, the concrete should have a texture, which resembles fine grit sandpaper. Repeat the process if necessary. Surface sealers and curing agents must be removed by grinding. Vacuum to remove fine dust and debris. The floor should be dry and dust free prior to application. Previously coated floors need to be in good condition with proper adhesion to the concrete substrate.

APPLICATION

Airless spray is the preferred method of application. However, brush, roller, or air-atomized spray may also be used. Refer to table for thinning recommendations. For proper performance, a dry film thickness of 5-8 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 the 9101402 Standard Activator or 9104402 Fast Cure Activator at air temperatures between 50-120°F (10-49°C) and when the surface temperature is at least 5°F (3°C) above the dew point and less than 120ºF (49ºC). Low curing temperatures and/or condensation on the film while curing can affect appearance in the form of an amine blush. This can generally be removed with soap and water; however, in a case of extreme blushing, the performance of the coating may be slightly affected.

PRODUCT APPLICATION (cont.)

When application temperatures are between 40-60°F (5-15°C) and when the surface temperature is at least 5°F (3°C) above the dew point, use the 9103402 Low Temperature Activator. Do not apply the material if the temperature is expected to fall below 40°F in the first 24 hours of cure. At 40°F, full cure will be achieved in 7 days.

For water immersion service, use the 9102402 Immersion Activator. Do not use the 9102402 Immersion Activator with tint bases. This system may be used for both salt and fresh water; do not use for the inside of potable water tanks. Apply at air and surface temperatures between 60-100°F (15-38°C), when the surface temperature is at least 5°F (3°C) above the dew point, and when relative humidity is below 85%. Apply two coats alternating color between coats to ensure complete hide. Allow 7 days cure after application of the second coat before immersion.

NOTE: The 9104402 Fast Cure Activator may also be used in water immersion. Allow 7 days for full cure prior to beginning immersion service. Do not use tinted colors in water immersion.

Pools

When used with 9102402 Immersion Activator, the DTM Epoxy Mastic 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. by 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 appearance. Sunlight and UV will cause chalking and fading. **Do not** use over: 1) chlorinated rubber, 2) synthetic rubber, 3) vinyl, 4) acrylic. See Note in Performance Characteristics Section on Page 3.

PRODUCT APPLICATION (cont.)

EQUIPMENT RECOMMENDATIONS

(Comparable equipment also suitable.)

BRUSH: Use a good quality natural or synthetic bristle brush.

ROLLER: Use a good quality lamb's wool or synthetic fiber (3/8-1/2"nap).

AIR-ATOMIZED SPRAY:

Method	Fluid Tip	Fluid Rate	Atomization Pressure
Pressure	0.055-0.070	10-16 oz./min.	25-60 psi
Siphon	0.055-0.070	—	25-60 psi
HVLP	0.043-0.070	8-10 oz./min.	10 psi (at tip)

AIRLESS SPRAY:

Fluid Pressure	Fluid Tip	Filter Mesh
1,800-3,000 psi	0.013-0.017	100

THINNING

Thinning is normally not required, except for air-atomized spray. For air-atomized spray application, thin only up to 10% by volume with 160402 Thinner after the components have been mixed. If the coating is going to be used in immersion service, 9102 or 9104 activator, then, use up to 10% 165402 Thinner for air-atomized spray and up to 5% of 165402 Thinner for airless spray.

NOTE: Addition of more than 10% of 160402 or 165402 Thinner will cause VOC to exceed 340 g/l. In this case, 333402 VOC exempt thinner can be used if needed.

MIXING

Both the base and activator components are highly pigmented. Mix each component thoroughly to ensure any settled pigment is re-dispersed before combining the components together. Combine 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 listed pot life.

CLEAN-UP

Use 160402 or 165402 Thinner.

SHELF LIFE

Base components	3 years [5]
Activators	2 years[5]

[5] Unopened containers. Some settling may occur requiring mechanical mixing to redisperse pigment.

PERFORMANCE CHARACTERISTICS

SYSTEM TESTED

Topcoat: DTM Epoxy Mastic with 9101 Activator

PENCIL HARDNESS

METHOD: ASTM D3363
RESULT: B (7 days), 4H (30 days)

CONICAL FLEXIBILITY

METHOD: ASTM D522
RESULT: >32%

CYCLIC PROHESION

Rating 1-10, 10=best

METHOD: ASTM D5894, 2300 hours
RESULT: 10 ASTM D714 for blistering
RESULT: 10 ASTM D1654 for corrosion

IMPACT RESISTANCE (direct)

METHOD: ASTM D2794
RESULT: 160 in. lbs.

TABER ABRASION

METHOD: ASTM D4060 CS-17 wheel, 500 g. load, 1000 cycles
RESULT: 125 mg loss

GLOSS

METHOD: ASTM D4587
RESULT: 80%

Refer to the Rust-Oleum Industrial Brands Catalog Form # 275585, for chemical and corrosion resistance.

NOTE: In swimming pool service, early chalking may occur if the water pH is outside the range of 7.2-7.6 and/or if the water temperature exceeds 100°F (38°C).

CAUTION: Exposure of the 9100 System during the curing stage of the coating to the by-products of propane combustion may cause discoloration to occur. During application and curing, propane fueled fork-lifts and other vehicles or propane fueled heaters should not be used in the area until the coating is fully cured. At least 72 hours.

RUST-OLEUM® HIGH PERFORMANCE

TECHNICAL DATA

9100 SYSTEM DTM EPOXY MASTIC

PHYSICAL PROPERTIES

		9101 Activator		9102 Immersion Act.		9103 Low Temp. Act.	9104 Fast-Cure Act.	
Resin Type		Aliphatic Amine Converted Epoxy		Polyamide Converted Epoxy		Aliphatic Amine Converted Epoxy	Polyamide/modified Amine Converted Epoxy	
Inhibitive Pigment		Calcium Borosilicate		Calcium Borosilicate		Calcium Borosilicate	Calcium Borosilicate	
Solvents		Xylene, Methyl Isobutyl Ketone, 1-Methoxy-2-propranol		Xylene, Methyl Isobutyl Ketone, 1-Methoxy-2-propranol		Xylene, Methyl Isobutyl Ketone, 1-Methoxy-2-propranol	Xylene, Methyl Isobutyl Ketone, 1-Methoxy-2-propranol	
Weight[6]	**Per Gallon**	11.4-12.6 lbs.		11.4-12.6 lbs.		9.3-10.4 lbs.	12.0-13.0 lbs.	
	Per Liter	1.4-1.5 kg		1.4-1.5 kg		1.1-1.2 kg	1.4-1.6 kg	
Solids[6]	**By Weight**	86-89%		79-82%		78-81%	81-83%	
	By Volume	78-81%		65-68%		72-75%	67-69%	
Volatile Organic Compounds[6]		<340 g/l (2.84 lbs./gal.)		<340 g/l (2.84 lbs./gal.)		<250 g/l (2.08 lbs./gal.)	<340 g/l (2.84 lbs./gal.)	
Mixing Ratio		1:1 Base:Act.(by vol.)		1:1 Base:Act.(by vol.)		1:1 Base:Act.(by vol.)	1:1 Base:Act.(by vol.)	
Recommended Dry Film Thickness (DFT) Per Coat		5-8 mils (125-200µ)		5-8 mils (125-200µ)		5-8 mils (125-200µ)	5-8 mils (125-200µ)	
Wet Film to Achieve DFT (unthinned material)		6.5-10.5 mils (162.5-262.5µ)		7.5-12.0 mils (187.5-300µ)		7.0-11.0 mils (175-275µ)	7.5-12.0 mils (187.5-300.0µ)	
Theoretical Coverage at 1 mil DFT (25µ)		1250-1300 sq.ft./gal. (30.8-32.0 m^2/l)		1045-1090 sq.ft./gal. (25.7-26.8 m^2/l)		1155-1200 sq.ft./gal. (28.4-29.5 m^2/l)	1075-1100 sq.ft./gal. (26.4-27.3 m^2/l)	
Practical Coverage at Recommended DFT (assumes 15% material loss)		125-225 sq.ft./gal. (3.1-5.5 m^2/l)		100-175 sq.ft./gal. (2.5-4.3 m^2/l)		125-200 sq.ft./gal. (3.1-5.0 m^2/l)	115-190 sq.ft./gal. (2.8-4.7 m^2/l)	
Induction Period		None required		30 minutes (60 min. < 65°F)		None required	15 minutes	
Pot Life[7]	**2 gallons**	2-4 hours at 70°F (21°C),	1-2 hours at 90°F (32°C)	2-4 hours at 70°F (21°C)	3-5 hours at 60°F (15°C)	2-4 hours at 60°F (15°C)	2-4 hours at 70°F (21°C)	1-2 hours at 90°F (32°C)
	10 gallons	2 hours at 70°F (21°C)	<1 hour at 90°F (32°C)	2 hours at 70°F (21°C)	3 hours at 60°F (15°C)	2 hours at 60°F (15°C)	2 hours at 70°F (21°C)	<1 hour at 90°F (32°C)
Dry Times at 50% Relative Humidity	**Tack-free**	6-8 hours at 70°F (21°C)	12-24 hours at 50°F (10°C)	6-8 hours at 70°F (21°C)		16-20 hours at 40°F (5°C)	4 hours at 70°F (21°C)	8 hours at 50°F (10°C)
	Handle	6-12 hours at 70°F (21°C)	48-72 hours at 50°F (10°C)	8-14 hours at 70°F (21°C)		22-26 hours at 40°F (5°C)	5 hours at 70°F (21°C)	10 hours at 50°F (10°C)
	Recoat	16 hours to 1 year[8] 70°F (21°C)	72 hours to 1 year[8] 50°F (10°C)	16 hours to 1 year[8] 70°F (21°C)		24 hours to 1 year[8]	4 hours to 1 year[8] 70°F (21°C)	8 hours to 1 year[8] 50°F (10°C)
Dry Heat Resistance		300°F (149°C), Color may shift above 150°F (66°C)		300°F (149°C), 125°F (52°C): for immersion service Color may shift above 150°F (66°C)		300°F (149°C), Color may shift above 150°F (66°C)	300°F (149°C), Color may shift above 150°F (66°C)	
Shelf Life		Unopened containers; 3 years Base components, 2 years Activator components						
Safety Information		For additional information, see SDS						

[6] Activated material.

[7] 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. Final gloss maybe slightly higher for coating applied near the end of the pot life.

[8] If recoat time is extended, be sure the surface is clean and free of all contamination prior to coating. Actual environmental conditions may affect results, so a trial is suggested to ensure acceptable results.