SPI COATINGS
PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

INSULATION AND CORROSION SPECIALISTS

RUST GRIP

Technical Data Sheet (8/4/23)

DESCRIPTION

RUST GRIP® is a tough, one-part, moisture-cure polyurethane coating that absorbs atmospheric moisture to cure. RUST GRIP® is loaded with a metallic pigment for strength and is also resistant to chemical solvents and acid splash. Upon curing, RUST GRIP® provides a protective coating film of superior adhesion and flexibility and is resistant to abrasion and impact. RUST GRIP® can be used as a primer or as a one-coating system. It is patented to encapsulate lead-based paints and other toxic materials, including asbestos. RUST GRIP® can be applied over pressure-washed, completely dry flash rust and firmly bonded commercial paints. In most cases, a white or near-white blasting is not required. A light to medium surface rust is preferred as the profile. Conforms to MIL-PRF-3135.

TYPICAL USES

- As a coating to encapsulate rust, lead-based paints and other hazardous materials.
- As a protective coating on metal, concrete, wood, etc. to add strength and prevent deterioration.
- As a one-coat system on new or existing bridges, oil platforms, roofs, and other commercial/industrial surfaces with minimal surface preparation and non-sparking.

APPLICATION METHODS

RUST GRIP® can be applied to concrete or masonry substrates. The coating can be applied by spray, brush or roller. For specific instructions on surface preparation, mixing and application, please refer to the SPI's application instructions for RUST GRIP® (millage may vary due to surface profile).

NOTE: This product must not be applied on or within 2 inches of chlorinated rubber.

NOTE: Never use mineral spirits to prep surfaces or to thin this product.

NOTE: For temperatures 95F/35C and above with less than 20% humidity: Rust Grip will dry to touch but will not have completely finished gassing off. If you can move the coating with your fingers, it is not set hard enough to overcoat; if overcoated too soon, bubbles will be caught in the top coat.

NOTE: Zinc rich primers >/= to 8.2 kilo of organic zinc per gallon should be removed by sandblast, hand or power tool prior to application of RUST GRIP®. Also, surface should be allowed to develop surface rust as the profile before applying RUST GRIP®.

NOTE: For corrosion protection, RUST GRIP applied over surfaces will encapsulate to block air and moisture. Further, where RUST GRIP is not applied (ie: underside of panels, inside plate assemblies, etc.), the air/moisture is not sealed out to prevent the development of corrosion, which can penetrate through the entire metal thickness to impact structural strength.

MINIMUM SPREAD RATE (mil thickness)

No flat surface is completely smooth and will have a profile of 1-2 mils (25-50 microns). Because of this, we will establish a minimum wet application of 12 mils and dry of 6 mils (150 microns). The number of coats necessary to achieve a minimum of 4 mils (100 microns) dry thickness over the top of the tallest peak of rust or profile will be in accordance with the job specification, blast profile or rust profile. Allow for absorption into the substrate and filling profile when figuring spread rate. For example, if the profile is 3 mils (75 microns) and 4 mils of coating is needed then 7 mils of coating is needed (114 sqft or 11 sqm/gal).

TEST AND CERTIFICATIONS

1. Tensile Strength (6,780 psi after 3 weeks)
2. USDA-approved
3. E-108-00: Spread of flame on pitched roofs (Class "A" non-combustible)
4. G85: Prohesion over rusted metal
5. Marine approvals for salt water/maritime user:
   ABS (American Bureau of Shipping)
   IMO (International Maritime Organization)
6. Mildew Resistance – excellent (ASTM D3273, 3274)
7. Chemical Resistance (24 hours/12 reagents)
8. Flexibility (Mandrel Bend: ASTM D522) – 1/8"
9. Direct Impact Resistance (ASTM D2794)
10. Adhesion (ASTM D3359, D4541)
11. Water Vapor Transmission (ASTM D1653)
12. Surface Burning Characteristics (E84)
13. Weathering (2000 hours) – China
14. Scrub Resistance (ASTM D2486)
15. ASTM B117 – 15000 hours, one coat 6 mils/150microns-Perfect score
16. ASTM E1795 – Encapsulation test group
17. ASTM D5894 at 10K hours with perfect 10 score @ 6 mils
18. Corps of Engineers Guide Spec. UFGS 099702; painting hydraulic structures
19. Naval Warfare Center, Caderock Div. #NSWCCD-61-TR-2012/65 Materials Dept.
20. US Army Construction Engineering Research Laboratories (USACERL) Reports: ERDC/CERL TR-03-05/3/A080263
    MEETS USMC SPEC: TM4795-OR/1
21. Meets requirements of SSPC Paint 38 (min) for Primer and SPC Paint 41 (min) for Primer/Top-Coat.
22. **RUST GRIP passed: ISO 12944-6 coastline avg. pull: 1366psi/9.4 MPa to 2405 psi/17.3 MPa; required 2.5 MPa. Tested under 12944-9 offshore and rated #1 against all competition.**
23. Oman PDO approval PCS-1A per SP-1246 V.4.

PHYSICAL DATA

- RG-1 Solids: By weight 62.2% / By volume 51.4%
- 30-60 MINUTES TO TACK FREE AT 70°F (21°C)
- Overcoat window is three hours or less at 70°F (21°C)
- Hygroscopic: Cures by absorbing moisture in the air
- Net Weight: 9.1 lbs. per gallon
- Moisture-cure Polyurethane
- Shelf Life: Up to 3 years (unopened) under appropriate storage condition (see SDS)
- One component coating; No curing agent needed
- VOC Level: 380 grams/liter; 3.17 lb./gal.
- Silver-gray in color; not available in colors
- Resistant to most solvents, chemicals and some acids
- Maximum Surface Temperature when applying; 180°F (82°C) up to 200°F (93°C)
- Minimum Surface Temperature when applying; 50°F (10°C)
- Maximum Surface Temperature after curing; 325°F (163°C)
- Failure will occur at a constant temperature equal to or greater than 320°F (160°C); consult SPI for intermittent temperatures that exceed
- Non-sparking
- Viscosity: 150 centipoise
- Avg Perms: 0.24

Application Instructions (9/25/24)

SURFACE PREPARATION

Surface must be clean from oil, tar, rust, grease, salts, and films.

1) Use general degreaser if needed if oil/grease is present.
2) Clean surface using tri sodium phosphate, a citrus cleaner, to release dirt and degreaser residue.
3) Pressure-wash, if possible @ 3500 psi. If not, do minimum clean water rinse.
4) Salt contamination on a surface can come as a result of salt water, fertilizers, and car exhaust. Use Chlor*Rid or equivalent to decontaminate surface if salts are present. Acceptable levels: Nitrates: 5-10 mcg/cm², Sulfates: 5-10 µg/cm², Chlorides: 3-5 µg/cm²
5) For areas heavy in salt contaminants where 5-10ppm/µg/cm² is not achievable, RUST GRIP can be applied when levels are from 10-50ppm µg/cm². Apply 2 additional dry mils of RUST GRIP.

Surface must be completely dry before applying.

1) RUST GRIP® must be applied during proper temperatures and the prescribed overcoat window of the coating over which it will be applied.
2) If applied over an existing coating having a glossed or shiny finish, it must be sanded and roughed to remove gloss before application, to improve the profile.
3) Additional coats of RUST GRIP® (see OVERCOAT below).

NOTE: If pack rust or mil-scale exists, they must be removed by grit blast, power tool or pneumatic zip gun. Glossy surfaces should be sanded to a dull finish to improve the profile and enhance adhesion. If mil-scale exists on hot rolled steel, the pores will be blocked, and the surface must be taken to a SSPC – SP6 or SP11. Once these steps are taken, begin Surface Preparation Instructions. (Above)

NOTE: Never use a needle gun. This compacts rust into the pores and blocks RUST GRIP from anchoring.

MIXING

Mix by hand or with a power drill using low-medium speed with NO vortex. (A vortex will draw moisture into the coating.) The coating will be a yellowish green color. Mix continuously (with no vortex) until the entire surface of the coating turns a silver-gray color. Mix for two more minutes making sure all paste is off of the bottom.

NOTE: Once container is opened, the product must either be used completely, or sealed with plastic before re-attaching lid after use, or repackaged and sealed well in an unlined metal can. Product may thicken if left open in can. Pour off the amount you intend to use after proper stirring. If left open, the product will harden in the container. For start & stop (lunch), drop gun into solvent pail and cover.

ONCE OPENED, PAIL WORKABILITY CHANGES ACCORDING TO AMBIENT CONDITIONS – 4 hours at 70°F degrees (21°C) at 60% or higher Relative Humidity. Cooler temperatures or lower humidity, more workability time. Warmer temperature or high humidity; less workability time.

OVERCOAT

RUST GRIP may be overcoated with itself or an approved topcoat when the surface of RG is dry to the touch and hard throughout up to 24 hours, with no transfer of coating (in most cases, 1-2 hours). Dry/overcoat time will vary due to temperature and RH, and location.

CURE TIME

RUST GRIP / RUST GRIP UL VOC: 30-60 minutes to tack-free when 70°F. (21°C) at 40% relative humidity; fully cures in thirty days when 70°F (21°C) at 40% relative humidity.

SAFETY PRECAUTIONS

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: proper ventilation, use of proper lamps, wearing of protective clothing and masks, tenting, and proper separation of application areas. This coating is flammable. Keep away from fire, or other sources of ignition. For more specific safety procedures, please refer to the RUST GRIP SDS. KEEP OUT OF REACH OF CHILDREN.

APPLICATION

1) RUST GRIP® can be applied by soft bristle brush or ¼" nap roller made for solvent use or spray. If application is by spray, use a standard airless sprayer (1.5 gallons/minute at 3,300 psi) with a .013-.017 tip.
2) In all applications (brush or roller), apply at "half-speed" and use a cross-hatch method (side-to-side, then top-to-bottom) slowly to prevent pinhole and allow penetration.
3) Incapsulating rust, lead-based paint, other bio-hazardous materials or bridges, brushing is the preferred application method. Apply the first coat by brush (keeping it very wet at all times), using the cross-hatch method. Go about 30 feet then return to the beginning and apply a second coat identical to the first. A third coat may be required. This method will insure the coating is worked into the pores and fully encapsulates the existing surface, while leaving enough coating over the surface to avoid pinholes.

- Maximum/minimum surface temperature when applying: 150°F (65°C) / 50°F (10°C)
- Maximum surface temperature after curing: 325°F (163°C)
- Failure will occur at a constant temperature =/> 325°F (163°C)

APPLICATION NOTES:

1) The number of coats necessary and the thickness of each will be in accordance with the job specifications, blast profile, or rust profile.
2) Temperatures must always be a minimum of 5F degrees above the dew point during application. If there is a minimum of 5mph of wind, this can keep the surface dry.
3) At high RH values of 60% or more, Rust Grip® cures very quickly and the window for applying another layer of coating is within 24 hours if humidity is below 65%. The higher the temperature, the faster solvents evaporate out of the coating. It is always best to overcoat within 4 hours when the first coat of Rust Grip ® becomes dry to the touch. Since the curing process is so dependent on ambient temperature and RH, the physical touch-test is always the best approach when working in high humidity environments. RH of 60% and up.
4) Surface profile must be factored when estimating the spread rate and amount of product required. Allow for penetration into the profile and adjust accordingly (i.e. if the profile takes 2 mil (50 micron) to fill before achieving the 6 mils dry(150 microns) then you must figure 8 mil (200 microns) dry as the appropriate spread rate).
5) Over very rough surfaces apply RUST GRIP ® at a minimum thickness of 12 mils wet/6 mils dry. Dry film thickness must be at least 4 mils (100 microns) over the highest peaks of the surface profile. Allow for absorption into the substrate and filling profile when figuring spread rate.
6) Use Acetone to aid in drying surface before applying RUST GRIP®, when needed. DO NOT use mineral spirits or any other solvent for this purpose.

CLEANING EQUIPMENT

1) If breaks are taken, spray systems should be flushed with solvent.
2) After completion, spray system should be flushed and cleaned with MEK or Xylene; brushes and rollers should be discarded.

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SAFETY DATA SHEET

SECTION 1: Identification of the substance

1.1 PRODUCT IDENTIFIER: RUST GRIP (0411)
GHS PRODUCT INDENTIFIED: Global Harmonized System #3208.90.0000

1.2 PRODUCT USE: Corrosion coating protection for steel and concrete surfaces

1.3 SUPPLIER: SUPERIOR PRODUCTS INT'L II, INC.
10835 W. 78th St., Shawnee, KS 66214 USA

1.4 EMERGENCY TELEPHONE NUMBER: 800-424-9300; 202/483-7616

SECTION 2: Hazard identification

2.1 Classification of the substance: This products is a flammable, solvent-based coating and should be treated according to all known safety precautions.

2.2 Label elements: Signal Word: DANGER Hazard Symbol:

Hazard Statement: Flammable liquid and vapor. Harmful in contact with skin. May cause cancer. Causes eye irritation. May cause respiratory irritation or damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways. May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.

SECTION 3: Composition/information on ingredients

3.2 Ingredient compositions	%	CAS/PIN	TLV
Aromatic 100	8.0%	64742-95-6	50.00
Aromatic 150	20.0%	64742-94-5	25.00
Mineral spirits	9.0%	64742-47-8	100.00
4,4 Diphenylmethane Diiso	10.0%	101-68-5	Not established
MDI, B15 (4-Isocyanatopheny methane)	35.0%	58043-05-3	Not established
Aluminum paste	18.0%	7429-90-5	Not established

SECTION 4: First aid measures

4.1 Description of first aid measures

INHALATION: Remove to fresh air. Give oxygen if required. Seek medical help, if needed.

EYES: Flush w/water for at least 15 minutes; see physician.

SKIN: Remove contaminated clothing; wash affected areas w/mild soap & water.

INGESTION: Do not induce vomiting. Give 1-2 glasses milk or water. Seek medical attention according to amount of product ingested.

SECTION 5: Firefighting measures

5.1 Extinguishing media: Foam, dry chemical, carbon dioxide; water fog to cool containers exposed to heat.

5.2 Special hazards arising from the substance or mixture:
Hazardous combusion products: Carbon monoxide, isocyanate-based fume
Autoignition Temperature.: 214C. degrees Minimum ignitions energy: 6.1%
Flash point: 44C. TCC Flammable limits: (Lower) 1.4% / (Upper) NAV%
Sensitivity to static discharge? Yes
Sensitivity to mechanical impact? Possible, due to aluminum content
Conditions of flammability: Spraying/activities that create fine mist

5.3 Advice for firefighters: Firefighters should wear full-body protection & SCBA

SECTION 6: Accidental release measures

6.1 Personal precautions: Use protective clothing; use non-sparking tools. Product may form flammable vapour-air mixture so take measures against build up of static discharge.

6.3 Methods of cleanup: Use kitty litter or similar absorbent to contain spill. Neutralize w/solution of 80% water/20% Tergitol TMN-10.

SECTION 7: Handling and storage

7.1 Precautions for safe handling: Ground all containers; use non-sparking tools. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition. Keep away from children.

SECTION 8: Exposure Controls/personal protection

8.1 Control parameters: To be worn when spraying or within contained areas--Half-face respirator w/organic vapor filter, safety glasses w/shields, PVA or nitrile chemical-resistant gloves, skin protection; for all other applications, good judgement should be used.
ENGINEERING CONTROLS: To spray, mechanical exhaust ventilation is required.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:
PHYSICAL STATE: Liquid SOLUBILITY IN WATER: Insoluable pH: NAP
APPEARANCE AND ODOR: Silver grey liquid, aromatic odor FREEZING POINT: NAP
BOILING POINT: >150C. deg. SPECIFIC GRAVITY: 1.1 ODOR THRESHOLD: 0.4ppm
COEFF. WATER/OIL: NAV EVAPORATION RATE: very slow% VOLATILES: 45
VAPOUR DENSITY (Air=1): NAV VAPOUR PRESSURE: 8mmHg@20C. deg. CORROSIVE: NO

SECTION 10: Stability and reactivity

10.1 Conditions of Reactivity: dry aluminum powder 10.2 Conditions of Instability: Impact, heat and friction
10.3 Possibility of hazardous reactions: None known. 10.4 Conditions to avoid: None known.
10.5 Incompatible materials: Ammonium nitrate chorofluoro carbons, chlorinated solvents, zinc rich greater than or equal to 8.2 kilo of organic zinc per gallon, strong bases, peroxides, amines
10.6 Hazardous decomposition products: Hydrogen gas, reactive chlorides when wet. ABS tested non-toxic when burned.

SECTION 11: Toxicology Information

11.1 Information on toxicological effects:
Acute toxicity - oral: If swallowed: HARMFUL OR FATAL - Causes chemical burns of mouth and stomach; corrosive to gastrointestinal tract; Paleness and cyanosis of the face; Excessive fluid in the mouth and nose; Bloating of stomach and belching; Nausea and vomiting; Risk of chemical pneumonitis and pulmonary edema
Acute toxicity - inhalation: Vapors or mist can cause irritation. People with asthma or lung problems may be more affected; smokers.
Acute toxicity - dermal: May cause TEMPORARY skin discloration and irritation. May cause severe eye damage.
Health effects to over exposure to CONCENTRATE: Corrosive to mucuse membranes, eyes and skin. The seriousness of the lesions and the prognosis of intoxication depend directly upon the concentration and duration of exposure.

SECTION 12: Ecological Information

12.1 Toxicity
Air: 3.17 lbs./gallon; 380 grams/liter VOC* (see other)
Water: Insoluble in water; reacts slowly w/water forming polyurea polymer and liberating CO2 gas
Soil: Lead- and chromate-free, not hazardous under RCRA 40CFR

SECTION 13: Disposal considerations

13.1 Waste treatment methods: Dispose of as paint/aluminum waste according to local regulations.

SECTION 14: Transport information

14.1 UN number: 1263 14.2 UN proper shipping name: Paint Related Material
14.3 Transport hazard class: Class 3 14.4 Packing Group: III
Product is considered hazardous material, to be handled according to IATA regulations

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance: No listed materials under Superfund Amendments & Reauthorization Act of 1988 (SARA) 302, 304, 311, 312. Meets European codes under Article 59(10) of the Reach regulation. California Proposition 65 Reproductive Toxins: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SECTION 16: Other information

*Product is compliant with many national and local VOC content regulations. However, because manufacturer is not familiar with all local VOC requirements, the user is responsible for understanding the local VOC rules and for verifying that the product selections meet the most current VOC requirements of the area in which the products are to be used.

PREPARED BY: J. Pritchett, Superior Products Int'l II, Inc. **DATE**: 3/21/23