



RUST GRIP®

Technical Data Sheet (9/17/13)

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.

TYPICAL USES

- Good acid and very good alkali resistance.
- 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.
- As a moisture protective membrane to stop moisture penetration, contaminants, and mold and mildew.

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 be 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 must 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®.

MINIMUM SPREAD RATE (mil thickness)

Apply RUST GRIP® at a minimum thickness of 8 mils wet/4 mils dry over the highest peaks of the surface profile. Allow for absorption into the substrate and filling profile when figuring spread rate.

TEST AND CERTIFICATIONS

1. Tensile Strength (6,780 psi after 3 weeks)
2. USDA approved
3. Factory Mutual approval
4. E-108-00: Spread of flame on pitched roofs (Class "A" non-combustible)
5. G85: Prohesion over rusted metal

6. Marine approvals for salt water/maritime user:

- DNV (Det Norske Veritas)
- ABS (American Bureau of Shipping)
- IMO (International Maritime Organization)
- US Coast Guard

7. Mildew Resistance – excellent (ASTM D3273, 3274)

8. Chemical Resistance (24 hours/12 reagents)

9. Flexibility (Mandrel Bend: ASTM D522) – 1/8"

10. Direct Impact Resistance (ASTM D2794)

11. Adhesion (ASTM D3359, D4541)

12. Water Vapor Transmission (ASTM D1653)

13. Surface Burning Characteristics (E84)

14. Weathering (2000 hours) – China

15. Scrub Resistance (ASTM D2486)

16. ASTM B117 – 15000 hours, one coat 6 mils (150microns) Perfect score

PHYSICAL DATA

- ◆ 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)
- ◆ Lead and chromate free
- ◆ 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 MSDS)
- ◆ One component coating; No curing agent needed
- ◆ VOC Level: 414 grams/liter
- ◆ Silver-gray in color; not available in colors
- ◆ Resistant to most solvents, chemicals and some acids
- ◆ Maximum Surface Temperature when applying; 150°F (65°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 302°F (150°C); consult SPI for intermittent temperatures greater than 302°F (150°C)

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 Material Safety Data Sheet. **KEEP OUT OF REACH OF CHILDREN.**

LIMITATION OF LIABILITY: The information contained in this data sheet is based upon tests that we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by SPI, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge is reliable. The products and information are designed for users having the requisite knowledge and industrial skills, and the end-user has the responsibility to determine the suitability of the product for its intended use.

SPI has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, SPI does not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The information contained in this data sheet is subject to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues and the user has the responsibility to ensure that this sheet is current prior to using the product.



RUST GRIP®

Application Instructions (2/4/13)

RUST GRIP® is a one-part, metallic-filled moisture-cured polyurethane that can be used as a primer, topcoat or to encapsulate. It can be applied to metal, concrete, masonry and wood, as specified.

SURFACE PREPARATION

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

- 1) Use general degreaser if needed.
- 2) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
- 3) Pressure-wash if possible @ 3500 psi.
- 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 mcg/cm², Chlorides: 3-5 mcg/cm²

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® can only be applied when the 1st coat becomes tacky to the touch and has little to no transfer of coating. After this stage, the surface must be lightly sanded to improve the profile.

NOTE: If pack rust or mil-scale exists, they must be removed by grit blast, power tool or needle 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)

MIXING

- 1) Mix by hand or with a power drill using low-medium speed with NO vortex. (A vortex will draw moisture into the coating.)
- 2) When the container is opened, 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. Once the coating color has turned completely silver-gray, mix for two more minutes making sure all paste is off of the bottom. Stirring this paste distributes the metallic pigments throughout the coating.

NOTE: Once container is opened, the product must either be used completely, or sealed with plastic before reattaching 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.

POT LIFE

4 hours at 70°F degrees (21°C) at 60% or higher Relative Humidity. Cooler temperatures; longer pot life / Warmer; shorter pot life. Higher humidity shortens pot life. Lower; may lengthen pot life.

CURE TIME

- 1) 30-60 minutes to tack-free when 70°F. (21°C) at 40% relative humidity.
- 2) Fully cures in thirty days when 70°F (21°C) at 40% relative humidity.

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 pinholes and allow penetration.
- 3) If encapsulating 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.
- 4) Overcoat with RUST GRIP® or other coatings immediately after surface is dry to the touch to achieve proper adhesion. Higher temperature and humidity will shorten curing times, lower temperatures will slow curing. The overcoat time, normally within 1 to 2 hours after reaching the dry-to-touch stage, will be determined in accordance with the project specifications. If product is applied after the specified overcoat time, the surface will need to be lightly sanded to achieve good adhesion.

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 5 degrees above the dew point during application.
- 3) At high RH values of 60% or more, Rust Grip® cures very quickly and the window for applying another layer of coating is very short. At 85% RH, it could be determined that one has only an hour or less over-coat window depending on the ambient temperature. The higher the temperature, the faster solvents evaporate out of the coating. It is always best to overcoat immediately 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 4 mils (100 microns) then you must figure 6 mil (150 microns) dry as the appropriate spread rate).
- 5) HIGH-HEAT SYSTEM: a) HPC applied over hot surface at thickness according to temperature level, b) RUST GRIP applied @ 150sf (145sm) for toughness, then c) SP Liquid Membrane for water/air seal plus rubber flex for movement.
- 6) Apply RUST GRIP at a minimum thickness of 8 mils wet/4 mils dry over the highest peaks of the surface profile. Allow for absorption into the substrate and filling profile when figuring spread rate.
- 7) 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 solvent; brushes and rollers should be discarded.

MATERIAL SAFETY DATA SHEET

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SECTION I - PRODUCT INFORMATION:

PRODUCT IDENTIFIER: **RUST GRIP**

MANUFACTURER: **SUPERIOR PRODUCTS INT'L II, INC.**

ADDRESS: **10835 W. 78th St., Shawnee, KS 66214**

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

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

SECTION II - HAZARDOUS INGREDIENTS:

<u>HAZARDOUS INGREDIENTS</u>	<u>%</u>	<u>CAS/PIN</u>	<u>TLV</u>	<u>PEL</u>
Aromatic 100	29.86%	64741-41-9	50.00	50.00
Mineral spirits	8.12%	64742-88-7	100.00	100.00
Diphenylmethane Diisocyanate	6.90%	26447-40-5	Not established	Not established
Diisocyanate MDI Polyisocyanate	23.01%	Proprietary	Not established	Not established
4,4 Diphenylmethane Diisocyanate	16.10%	101-68-8	.005-ceiling (.051 mg/m3)	.02-ceiling (.200 mg/m3)
Metallic paste	16.01%	7429-90-5	Not established	Not established

SECTION III - HAZARD IDENTIFICATION:

The product is a flammable, solvent-based product and should be treated according to all known safety precautions. Refer to Section VII for Storage and Handling recommendations, Section VIII for Personal Protection, Section XIV for transport.

SECTION IV - FIRST AID MEASURES:

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

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 V - FIREFIGHTING MEASURES:

CONDITIONS OF FLAMMABILITY: Spraying/activities that create fine mist

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, isocyanate-based fume

AUTOIGNITION TEMP.: 214C. degrees

MINIMUM IGNITION ENERGY: 6.1% **FLASH POINT & METHOD:** 44C. TCC

FLAMMABLE LIMITS: (Lower) 1.4% **(Upper)** NAV%

SENSITIVITY TO STATIC DISCHARGE? Yes

SENSITIVITY TO MECHANICAL IMPACT? Possible due to aluminum content

SPECIAL PROCEDURES: Firefighters should wear full-body protection & SCBA

MEANS OF EXTINCTION: Foam, dry chemical, carbon dioxide; water fog to cool containers exposed to heat.

SECTION VI - ACCIDENTAL RELEASE MEASURES: Use kitty litter or similar absorbent to contain spill. Neutralize w/solution of 80% water/20% Tergitol TMN-10. Use protective clothing; use non-sparking tools.

SECTION VII - HANDLING AND STORAGE:

Storage Requirements: Maintain temperature between 32-122F. degrees; average shelf life is 3 years @ 77F. degrees.

Handling Procedures/Equipment: Ground all containers; use non-sparking tools.

NAP = Not Applicable

NAV = Not Available

SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PERSONAL PROTECTIVE EQUIPMENT: 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 IX - PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: Liquid **SOLUBILITY IN WATER:** Insoluble

APPEARANCE AND ODOR: Silver grey liquid, aromatic odor

FREEZING POINT: NAP **BOILING POINT:** >150C. deg. **pH:** NAP

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.

SECTION X - STABILITY AND REACTIVITY:

CONDITIONS OF REACTIVITY: Dry aluminum powder **CORROSIVE?** No

CHEMICAL INCOMPATIBILITY: Ammonium nitrate chlorofluoro carbons, chlorinated solvents, zinc rich greater than or equal to 8.2 kilo of zinc per gallon, strong bases, peroxides, amines

CONDITIONS OF INSTABILITY: Impact, heat, friction

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen gas, reactive chlorides

SECTION VI - HEALTH HAZARD DATA:

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.

Skin: May cause TEMPORARY skin discloration and irritation

Eyes: May cause severe eye damage

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

If inhaled: Vapors or mist can cause irritation. People with asthma or lung problems may be more affected.

SECTION XII - ENVIRONMENTAL INFORMATION:

Air: 3.48 lbs./gallon; 414 grams/liter V.O.C.

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 XIII - WASTE DISPOSAL:

Dispose of as paint/aluminum waste according to local regulations.

SECTION XIV - TRANSPORT INFORMATION:

Product is considered hazardous material, to be handled according to Class 3//UN1263//P.G. III guidelines.

SECTION XV - REGULATORY INFORMATION:

No listed materials under Superfund Amendments & Reauthorization Act of 1988 (SARA) 302, 304, 311, 312, 313

SECTION XVI - OTHER INFORMATION: GHS #3208.90.0000

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