

**Harwell Brothers<sup>TM</sup>**

**Conquering the War on Rust!<sup>TM</sup>**



**2821**

***Intermediate 100***

**Product Data Sheets**



Updated 08/15/2022

Harwell Brothers™

## 2821 Intermediate 100

**Moister Cure Urethane Rust Preventive Intermediate Coating**

### Product Data Sheets

#### Product Description

**Harwell Brothers 2821 Intermediate 100**, moisture-cure urethane for ferrous, and non-ferrous metal, substrates. The master blend of micaceous iron oxide, zinc and other corrosion inhibiting pigments and resins designed for application over most primers, intermediates, and coating systems. The shield-like structure of rust preventives provides maximum surface tolerance by its ability to overlap most conventional coatings without compromising the existing adhesion characteristics to the substrate and promotes mechanical bonding for top-coating. It may be used on:

- Water and Wastewater Treatment Facilities • Food Processing Facilities
- Pulp and Paper Mills • Tank Exteriors • Hydro-power Facilities and Penstocks
- Material Handling Equipment • Marine/ Port Facilities • Offshore Platforms
- Chemical Processing Facilities • Refineries • Structural Steel
- Ballast Tanks (Salt Water) • Work Boats • and void areas of vessels

Over tight, intact existing surfaces, including different coating systems. As a Moisture Cure Urethane can be applied at low temperatures down to 0° F. and at very high dew points if no condensation exists on the substrate. This product incorporates a high level of a surface tolerant anticorrosive pigment which has a platy structure to prevent rust migration which provides long term anticorrosive properties when applied in a Harwell Brothers coating system. If recoating is required, product has an extended recoat window.

#### Product Feature

- Single Component Moisture Cure Urethane
- No Mixing Errors.
- No Pot Life
- No recoat window over proper cleaned surface
- 100 g/l
- Applied at 99% humidity (substrate must be visibly dry)
- Applied in below freezing temperatures (no ice or frost)

- Invented and designed for over coating systems MCU's, epoxies, alkyd's, vinyl's, phenolic's, acrylics, and lead coatings.
- Easy to apply by brush, roller, mitt, or spray method
- No Dew Point Restrictions (Substrate must be visibly dry)
- Micaceous iron oxide (MIO), maintains build on edges, threads, and weld seams

## General Information

Theoretical Coverage: At 1 mil DFT: 1027 ft<sup>2</sup> /gal at 25 µm DFT: 25.1 m<sup>2</sup> /l

Recommended Film Thickness: Wet: 5– 8 mils (125 - 200 µm) DFT: 3 – 5 mils (75 - 125 µm)

Recommended Coverage Per Coat: 205 ft<sup>2</sup> /gal at 5 mils DFT - 342 ft<sup>2</sup> /gal at 3 mils DFT (5 m<sup>2</sup> /l at 125 µm DFT - 125 m<sup>2</sup> /l at 75 µm DFT)

Thinning: Typically, not required- thin 10% with approved thinners in the area

Clean Up: Oxsol (Parachlorobenzotrfluoride)/SCAMQD Thinner/Acetone

## Recommended Systems

### Ferrous Metals, Weathering Steel substrates

1st Coat: Harwell Brothers 2955 0 VOC (spot prime) 1-2 mils DFT

2nd Coat: Harwell Brothers 2955 0 VOC 3-5 mils DFT

3rd Coat: Harwell Brothers 2821 intermediate 100 3 to 5 mils GFT

4th Coat: Harwell Brothers 2823 100 or Harwell Brothers 2833 100, 3-4. mils DFT

Total System DFT: 9-14 mils DFT

### Ferrous Metals (Saltwater Immersion)

1st Coat: Harwell 2955 0 VOC 1-2 mils DFT

2nd Coat: Harwell Brothers 2821 intermediate 100 3-5 mils DFT

3rd Coat: Harwell Brothers Tar 2808 100 4-5 mils DFT

4th Coat: Harwell Brothers Tar 2808 100 4-5 mils DFT

Total System DFT: 11.5-16.0 mils DF

### Aluminum/Non-ferrous Metals:

1st Coat: Harwell Brothers 2821 Intermediate 100 3-5 mils DFT

2nd Coat: : Harwell Brothers 2823 100 or Harwell Brothers 2833 100, 3-4 mils

Total System DFT: 6-9 mils DFT

*Note: Severely pitted profiles or extremely rough substrates will result in an additional coat of Harwell Brothers intermediate 100. There are other coating systems also contact your Harwell Brothers personal.*

## Surface Preparation

### Ferrous Metals:

Use SSPC-SP1 solvent cleaning or Bio Degreaser to remove oil and grease or other contaminants prior to employing surface preparation methods. Low-Pressure Water Cleaning (LP WC) Cleaning performed at pressures less than 34 Mpa (5,000 psi) with SaltX or equal to or better removing salts and other contaminants (this is required). Blast clean surfaces for severe chemical immersion service projects to SSPC-SP10/NACE No. 2 Near White Metal finish. Prepare surfaces for 100 % immersion service projects to SSPC-SP6/NACE No. 3 Commercial Blast Clean finish. For minimum surface preparation use conscientious SSPC-SP2 hand tool cleaning or SSPC-SP3 power tool cleaning methods to remove corrosion and loose or failing paint (feather edges of sound, existing paint back to a firm edge). High Pressure Water Cleaning SSPC-SP12/NACE No.5 to a minimum WJ3/NV2 may also be used to prepare ferrous metal surfaces for atmospheric service projects. Surface preparation methods should produce a surface profile of 1.0 - 2.0 mils (25.4-50.8 μms).

### Coated Steel substrates

Prepare surfaces using SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods. Supplement SSPCSP 12 LPWC with SSPC-SP2 and SP3 Hand and Power Tool cleaning where areas show excessive corrosion. Use SSPC-SP1 solvent cleaning to remove oil and grease prior to surface preparation methods. SaltX or equal to or greater is to be always used for removal of salts and contaminants. Sand glossy surfaces to provide profile, and flaky coating has been prepared to AMPP standards.

### Aluminum/Galvanized/Non-Ferrous Metals

Prepare surfaces using SSPC-SP1 Solvent Cleaning and SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods to remove surface contamination. Supplement weathered galvanized surface preparation with SSPCSP2 and SP3 Hand and Power Tool cleaning to remove excessive corrosion and impart surface profile on bare metal. Supplement new galvanized surface cleaning with SSPC-SP16 to impart surface profile and support mechanical adhesion. SaltX or equal to or greater will be used at always in cleaning.

## Good Practices

Harwell Brothers 2821 intermediate 100 is designed for application to tightly adhering coating. Heavy pack rust must be removed. Harwell Brothers 2821 intermediate 100 must have a nominal 3 mils thickness above the surface coating. The surface to be coated must be dry, clean, dull, and free from dirt, grease, oil, heavy rust, mill scale, salts or any other surface contaminants that interfere with adhesion. Ensure welds, repair areas, joints, and surface defects exposed by surface preparation are properly cleaned and treated prior to coating application. Areas of oxidation after surface preparation and prior to coating application, should be prepared to specified standard Consult the referenced standards, SSPC-PA1 and your Harwell Brothers Representative for additional information or recommendations

## Application Information

Harwell Brothers 2821 intermediate 100 can be applied by brush, roll, mitt, airless spray, and conventional spray application. Follow proper mixing instructions before applying.

### Mixing:

Material temperature must be 5°F above the dew point before opening and agitating. Agitate with mechanical agitation at slow speed to avoid incorporation of moisture. . **Do not keep under constant agitation.** Apply a 3-6 oz solvent float over material to prevent moisture intrusion and cover pail.

### Brush/Roller:

Brush: Natural Fiber  
 Roller: Natural or synthetic fiber cover  
 Nap: ¼" to ⅜"  
 Core: Phenolic  
 Reduction: Typically, not required.

### Conventional Spray/HLVP:

	Fluid Tip:	Air Cap:
DeVilbiss-MBC 510	E	765
Binks - Model 18	66	63PB
Atomizing Air:	45 - 75 lbs.	
Fluid Pressure:	15 - 20 lbs.	
Hose:	½" ID; 50' Max	
Reduction:	Typically, not required	

### Airless Spray:

Pump Ratio: 28:1 - 45:1  
 Golden gun/SpeeFlo Commander 30 with H Gun  
 Silver Gun or Contractors Gun  
 Tip: .013/ .015/.017 orifice.  
 Filter Size: 60 mesh (250 µm)  
 Reduction: Typically, not required.  
 Do not thin if VOC Regulations are effective.  
 Do not add thinner to reduce viscosity  
 increase to partial containers remaining  
 from previous work.  
 Care must be taken to clean spray lines after use to keep material from hardening.

### Reducer:

Oxsol (Parachlorobenzotrfluoride)  
 SCAMQD Thinner

### Clean up:

Oxsol (Parachlorobenzotrfluoride)  
 SCAMQD Thinner  
 Acetone  
 If Acetone is used flush lines with SCAMQD Thinner  
 or Oxsol

## Application Conditions

**Temperature:** 20°-100°F (-8°-38° C). This temperature range should be achieved for ambient, surface and material temperature. Substrate must be visibly dry and frost free. On applications below 33°F, Steel temperatures should be 5°F above the dew point temperature. Oxsol/ SCAMQD Thinner is recommended for spray application in temperatures above 90°F.

**Relative Humidity:** 6% - 99%. (Normal 50%-85%)

**Storage:** Store off the ground in a dry, protected area in temperature between 40°-100°F (4°-38°C). MCU containers must be kept sealed when not in use. Use a solvent float to reseal partial containers.

**Dry Time:**

\*At 50% Humidity

	50°F/10°C	75°F/24°C	95°F/35°C
Tack Free	3 Hours	1 ½ Hours	45 minutes
Re-coat Minimum	8 Hours	4 Hours	1 ½ hours
Full Cure	11 days	8 days	6 days

## Testing

Substrate\*: Steel/concrete

Surface Preparation\*: SSPC-SP10/NACE 2

System Tested\*: Harwell Brothers Zinc, Intermediate, and Finish

1 Coat of Harwell brothers 2806 2 mils/50 µms

1 Coat of Harwell Brothers 2821 3 mils/75 µms

1 Coat of Harwell Brothers 2823 3 mils/75 µms

Test Name	Test Method	Results
Corrosion Weathering	ASTM D5894 2100 hours, 6 cycles	Rating 10 per ASTM D610 for rusting; Rating 10 per ASTM D714 for blistering
Adhesion	ASTM D4541 Steel	1500 PSI
Direct Impact Resistance	ASTM D2794	150 in. lb.
Salt Fog Resistance	ASTM B117, 6,000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering
Salt Fog Resistance flash Rusted Metal	ASTM B117, 6,000 hours	Rating 10 per ASTM D610 for Rusting; Rating 10 per ASTM D714 for Blistering

## Safety

Material Safety Data Sheets for handling, storage, disposal, and use. NON-WARRANTY: The information herein is based upon the best information available at time of printing and data provided are intended for those having skill and ability to use products as recommended. Harwell Brothers assumes no warranties, either implied or expressed, as to the purchase or application of these products, with the sole exception that if the Seller delivers off standard materials, the Seller will, at its option, either replace the material or refund the full purchase price. Nothing contained herein shall be construed as a recommendation to use this product.