

PRODUCT DESCRIPTION

A high performance, multi-purpose, surface tolerant, two-component chemically-cured epoxy semi-gloss coating for industrial applications.

INTENDED USES

For use on properly prepared steel or masonry surfaces. Ideal for structural steel, piping, tanks, and equipment in chemical, fertilizer, and power plants, refineries, pulp and paper mills, mining operations, potable water transfer and storage, water and sewage treatment plants.

Performance alternate for Federal Specifications TT-C-550C, TT-C-535B, MIL-P-24441-Type III & IV, MIL-C-22750D -Type I, MIL-P-23377E-Type I, and MIL-P-23236B (SH)-Type I & IV-Class 1 & 2. Meets AWWA C-210 and D102.



For use with tanks greater than 50 gallons and pipes greater than 12 inches not exceeding a surface area to volume ratio of 131 sq cm/L only when mixed in a ratio of 4 parts base to 1 part converter, by volume.

PRACTICAL INFORMATION FOR BAR-RUST 233H

Color	Off White, Buff, Light Blue, Oxide Red, Black
Gloss Level	Semi-gloss
Volume Solids	80%± 2%
Typical Thickness	4-6 mils (100-150 microns) dry equivalent to 5-7.5 mils (125-188 microns) wet
Theoretical Coverage	257 sq.ft/US gallon at 5 mils d.f.t and stated volume solids 6.40 m ² /liter at 125 microns d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Roller, Air Spray, Brush, Conventional Spray
Drying Time	

Temperature	Touch Dry	Hard Dry	Overcoating Interval with recommended topcoats	
			Minimum	Maximum
32°F (0°C)	*1	30 hours	15 hours	30 days ²
41°F (5°C)	*1	17 hours	9 hours	30 days ²
59°F (15°C)	*1	10 hours	5 hours	30 days ²
77°F (25°C)	*1	7 hours	4 hours	30 days ²
122°F (50°C)	*1	4 hours	2 hours	15 days ²

¹ * not applicable

² Where overcoating is with epoxy intermediates / finishes or self overcoating.

Overcoating intervals will be reduced where Bar-Rust 233H is to be overcoated with approved finishes; see Product Characteristics for further information.

REGULATORY DATA

Flash Point	Part A 81°F (27°C); Part B 81°F (27°C); Mixed 81°F (27°C)
Product Weight	12.4 lb/gal (1.48 kg/l)
VOC	1.41 lb/gal (170 g/l) EPA Method 24

See Product Characteristics section.



SURFACE PREPARATION

Surfaces must be dry, clean, free of oil, grease, form release agents, curing compounds, laitance, other foreign matter and be structurally sound. Remove all loose paint, mortar spatter, mill scale, and rust. All direct to metal coatings provide maximum performance over blasted surfaces. There are situations and cost limitations which preclude blasting. Bar-Rust 233H was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 or ISO8501-1:2007 St2; for immersion service the minimum standard is SSPC-SP6 or ISO8501-1:2007 Sa2. These minimum surface preparation standards apply to steel that has been previously abrasive blasted, coated and deteriorated. Where very rusty surfaces still remain after cleaning use Pre-Prime 167 Sealer before application of Bar-Rust 233H. All direct to metal coatings provide maximum performance over near-white blasted surfaces.

New Steel Substrates

Blast to near-white metal surface cleanliness in accordance with SSPC-SP10 or ISO8501-1:2007 Sa2½ for immersion service, or commercial blast cleanliness in accordance with SSPC-SP6 or ISO8501-1:2007 Sa2 for non-immersion service. Blast profile on steel should be 1.5 to 2.5 mils (38-62 microns) in depth and be of a sharp, jagged nature as opposed to a "peen" pattern (from shot blasting). Surfaces must be free of grit dust.

Concrete - New

Concrete Block:

Remove loose aggregate and repair voids. Fill with Bar-Rust 233H or Tru-Glaze-WB 4015 blockfiller.

Concrete Floors, Poured Concrete:

Cure at least 30 days. Acid etch or abrasive blast slick, glazed concrete or concrete with laitance. Prime with Pre-Prime 167 or Bar-Rust 233H

APPLICATION

Mixing	Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.			
	<ul style="list-style-type: none"> (1) Agitate Base (Part A) with a power agitator. (2) Agitate Curing Agent (Part B) with a power agitator. (3) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator. 			
Mix Ratio	4 part(s) : 1 part(s) by volume			
Working Pot Life	32°F (0°C) 6 hours	41°F (5°C) 6 hours	59°F (15°C) 5 hours	77°F (25°C) 3.5 hours
Airless Spray	Suitable	Tip Range 21-27 thou (0.53-0.68 mm) Total output fluid pressure at spray tip not less than 3000 psi (211 kg/cm ²) See Product Characteristics section for further details		
Brush	Suitable			
Roller	Suitable			
Thinner	Not normally required	See Product Characteristics section for further details		
Cleaner	T-10 Thinner			
Work Stoppages	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with T-10 Thinner. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.			
Clean Up	Clean all equipment immediately after use with T-10 Thinner. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays. All surplus material and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.			

PRODUCT CHARACTERISTICS

Advantages:

- Suitable for fresh & salt water immersion
- Suitable for corrosive environments
- Resistant to many solvents and chemicals
- Resistant to cathodic disbondment
- Low temperature cure to 0°F (-18°C)
- Meets ANSI/NSF Standard 61 for potable water
- Surface tolerant
- Direct to metal
- Fast dry to recoat – speeds up production
- Easily applied by brush, roll, or spray
- Low VOC

Where Bar-Rust 233H is to be overcoated with Devthane 359, 359H, 378, 378H, 379, 379H, 389 or Devran 224HS or 229H finish coats, the following overcoating intervals will apply;

	Minimum	Maximum
32°F (0°C)	15 hours	7 days
41°F (5°C)	9 hours	6 days
59°F (15°C)	5 hours	5 days
77°F (25°C)	4 hours	5 days

For NSF applications, the typical applied thickness is 25 mils (625µm) dft. See listing at www.nsf.org "Drinking Water System Components" for application and cure requirements.

For airless spray application: A 45:1 pump ratio or larger is recommended. Ideally, fluid hoses should not be less than 3/8" ID and not longer than 50 feet to obtain optimum results. For longer fluid hoses, ID should be 1/2". Longer hose length may require an increase in pump capacity, pressure, and/or thinning. Viscosity control is best achieved using in-line heaters.

Depending on applicable potable water certification and local VOC/air quality regulations, up to 15% of T-5 Thinner may be added to aid application. The use of thinner may require additional cure time and ventilation prior to placing the coating system in service. For non-potable water applications, a maximum of 15% T-10 Thinner may be used.

The Off-White shade of Bar-Rust 233H may be tinted with suitable colorants; contact International Paint for further information. Add colorants only to the base portion and mix thoroughly before adding the converter portion. **Do not tint for potable water use.**

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

SYSTEMS COMPATIBILITY

The following primers are approved for use with Bar-Rust 233H:

Cathacoat 302H	Cathacoat 302HA
Cathacoat 302HB	Cathacoat 303H
Cathacoat 304L	Cathacoat 304V
Cathacoat 313	Cathacoat 315
Cathacoat 315HA	Cathacoat 315HB
Cathacoat 316	Devran 201H
Devran 203	Devran 205
Pre-Prime 167	Tru-Glaze-WB 4015

The following topcoats are approved for use with Bar-Rust 233H:

Devthane 349QC	Devthane 359
Devthane 359H	Devthane 378
Devthane 378H	Devthane 379
Devthane 379H	Devthane 389
Devthane 389H	

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	1 US gal	0.8 US gal	1 US gal	0.2 US gal	1 US quart
	5 US gal	4 US gal	6 US gal	1 US gal	1 US gal
For availability of other pack sizes contact International Protective Coatings					
SHIPPING WEIGHT	Unit Size	Part A		Part B	
	1 US gal	9.5 lb		2.4 lb	
	5 US gal	51.1 lb		12.8 lb	
STORAGE	Shelf Life	24 months minimum at 77°F (25°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.			

Disclaimer

The information in this data sheet is not intended to be exhaustive: any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. THEREFORE, UNLESS WE SPECIFICALLY AGREE IN WRITING TO DO SO, WE DO NOT ACCEPT ANY LIABILITY AT ALL FOR THE PERFORMANCE OF THE PRODUCT OR FOR (SUBJECT TO THE MAXIMUM EXTENT PERMITTED BY LAW) ANY LOSS OR DAMAGE ARISING OUT OF THE USE OF THE PRODUCT. WE HEREBY DISCLAIM ANY WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.

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