

DEVTRAN® 224HS

High Build Epoxy Coating

Cat. # 224HXXXX

PRODUCT DESCRIPTION

Generic: Catalyzed Polyamide Epoxy

General Description: A high performance, multi-purpose, surface tolerant, two-component chemically-cured epoxy semi-gloss coating for industrial or high performance architectural coating (HIPAC) applications. For use on properly prepared steel or masonry surfaces: Also used on concrete floors and interior primed drywall, plaster and wood surfaces. Use as a filler for open textured concrete block.

Typical Uses: Ideal for structural steel, piping, tanks, and equipment in chemical, fertilizer, power plants, petroleum refineries, pulp and paper mills, water and sewage treatment plants and mining operations.

Can also be used in the hard service areas of correctional facilities, schools, commercial and restaurant kitchens where a high performance architectural coating (HIPAC) is required.

Special Qualifications: Performance alternate for Federal Specifications TT-C-550, TT-C-535B, MIL-C-22750F, and MIL-P-23377F Type I. Suitable for use on structural surfaces or surfaces where there is a possibility of incidental food contact in commercial food preparation establishments, food processing plants and federally inspected meat and poultry plants. USDA no longer requires or furnishes product certification letters.

FEATURES

Advantages:

- Excellent corrosion protection
- Suitable for salt & fresh water immersion
- Excellent solvent and chemical resistance – resists splash and spillage of solvents, alkalis, salts, moisture, oils, greases, foodstuffs and detergents
- Cold weather cure – Use cold weather additive for application down to 25°F (-4°C)
- Surface tolerant – abrasive blasting not required in many applications
- Excellent adhesion to tight rust
- Low VOC
- Self-priming on steel or masonry
- Abrasion resistant
- High build/high solids coating

Limitations of Use: Exterior exposure will cause a color change, early dulling, and loss of gloss, but this does not affect protective properties. Epoxy coatings may yellow during application and cure if exposed to the combustion by-products of improperly vented fossil fuel burning heaters. Commonly finished with Devoe Coatings DEVTHANE™ Urethane Enamel for maximum exterior color & gloss retention.

SPECIFICATION DATA

Color: Off White (tintable), ready-mixed & custom colors, Note also available in aluminum. Please refer to the Devran 224HS Aluminum data sheet.

Finish: Semi-Gloss

Reduction Solvent: T-10 Thinner. For application over aged alkyds use T-5 Thinner or Xylene.

Clean-up Solvent: T-10 Thinner

Weight/Gallon: 12.5 lbs./gal. (1.5 kg/L) – varies with color.

VOC (EPA 24): 1.8 lbs./gal. (212 g/L) – varies with color.

Solids By Volume (ASTM D 2697-7 days): 75% – varies with color.

Theoretical Coverage at 1.0 Mil (25 microns) Dry: 1203 sq. ft./gal. (29.5 m²/L).

Recommended Film Thickness: 4.0-8.0 mils (100-200 microns) dry – 5.3-10.7 mils (155-267 microns) wet.

Systems: Please consult the appropriate system guide, the particular job specification or your ICI Devoe Coatings' Industrial Coatings Specialist for proper systems using this product. Systems must be selected considering the particular environment involved.

Service Temperature Limits: 250°F (121°C) dry

Minimum Dry Time (ASTM D 1640): At 6 mils (150 microns) DFT (Use of cold weather additive will decrease times noted. See cold weather applications on back page.)

Substrate Temperature	40°F (4°C)	60°F (16°C)	70°F (21°C)	80°F (27°C)
Minimum Recoat Dry Hard	20 Hours 42 Hours	8 Hours 16 Hours	6 Hours 9 Hours	3 Hours 5 Hours
Maximum Recoat				
Self	30 Days	30 Days	30 Days	30 Days
229	20 Days	15 Days	10 Days	10 Days
359,369,389	15 Days	10 Days	7 Days	7 Days
378/379	10 Days	7 Days	5 Days	3 Days

Warning: The above table provides general guidelines only. Always consult your ICI Devoe Coatings Specialist for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Industrial Coatings Specialist for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

Shelf Life: Over 24 months at 77°F (25°C) – unopened

Hardness (ASTM D 3363), 7 day cure @ 77°F (25°C): 3H

Mix Ratio By Volume: 1(base):1(converter) – see mixing instructions.

Induction: 15 minutes at 60-80°F (16-27°C) – see mixing instructions.

Pot Life: 6 hours @ 77°F (25°C) & 50% R.H.

PERFORMANCE DATA

Adhesion: (ASTM D 4541) – Excellent

Salt Spray Resistance: (ASTM B 117) – Excellent

Direct Impact Resistance: (ASTM D 2794) – Very Good

Abrasion Resistance: (ASTM D 4060) – Excellent

Humidity Resistance: (ASTM D 2247) – Excellent

Exterior Exposure: (45° South – Lt. Industrial) – Very Good (Normal, expected loss of gloss for epoxy coatings)

Chemical Resistance: (ASTM D 1308 – 24 hr. contact) – Excellent. Resists splash and spillage of alkalis, salts, moisture, oils, greases, food stuffs, and detergents, 50% sodium hydroxide, 28% ammonia, 5% trisodium phosphate, 25% citric acid, 25% lactic acid, 10% sulfuric acid, crude oil, 10% hydrochloric acid, 20% tannic acid, 5% sodium chloride, 10% ammonium hydroxide, sewage, 50% ethanol, gasoline, methanol, kerosene, naphtha, xylol.

All results based on testing of system comprised of two coats of DEVTRAN 224HS at 4 mils (100 microns) DFT per coat.

GENERAL 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. DEVRAN 224HS was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 (SSI-St2); for immersion service the minimum standard is SSPC-SP10 (SSI-Sa2 1/2). **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 DEVRAN 224HS.

New Surfaces: Steel – New steel surfaces should be initially blasted to near-white metal surface cleanliness in accordance with SSPC-SP10 or SSI-Sa2 1/2 for immersion service or commercial blast cleanliness in accordance with SSPC-SP6 or SSI-Sa2 for non-immersion service. Blast profile on steel should be 1 1/2 to 2 1/2 mils (38-63 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 Block** – Remove loose aggregate and repair voids. Fill with this product, Tru-Glaze® 4010 or DEVRAN 265BHF. **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 this coating thinned with T-10 Thinner in a 4 to 1 ratio. **Drywall** – Prime with a premium acrylic latex vapor barrier primer sealer. **Interior Wood** – Prime with this product thinned 10% with T-10 Thinner. **Exterior Wood** – Not recommended over this surface. **Galvanized Steel** – Remove dirt and oils by solvent cleaning or with DEVPREP® 88 Cleaner followed by a thorough water rinsing. Prime with DEVRAN 205 Epoxy Primer for non-immersion. For immersion or severe moisture condition, abrasive blasting is recommended before priming with DEVRAN 201 Epoxy Primer.

Previously Painted Surfaces: Old coatings should be tested for lifting. If lifting occurs, remove the lifted coating. Otherwise scuff sand glossy areas and aged epoxy coatings. Clean aged epoxy or urethane coatings with DEVPREP 88 Cleaner. Remove cracked and peeling paint. Prime bare areas with primer specified under **New Surfaces**. If thinning is required, thin with T-5 Thinner or Xylene only when used over aged alkyd coatings.

DIRECTIONS FOR USE

Tinting: Tint the appropriate base with CHROMA-CHEM 844 colorants. (Do not use water based colorants). Add colorants to only the base portion. Mix thoroughly before adding the Converter portion.

Thinning: Thinning is not normally required or desired; however, at extreme environmental conditions, small amounts (10% or less by volume) of the solvents on the reverse page can be added depending on local VOC and air quality regulations. When using DEVRAN 224HS over aged alkyds, use Devco Coatings T-5 Thinner. Any solvent addition should be made after the two components are thoroughly mixed.

Mixing: DEVRAN 224HS Coating is a two component product supplied in 10 gallon and 2 gallon kits which contain the proper ratio of ingredients. The entire contents of each container must be mixed together. Power mix both portions first to obtain a smooth, homogeneous condition. Then add the converter slowly with continued agitation. After the converter add is complete, continue to mix slowly. Allow the mixed material to stand 15 minutes at 60-80°F (16-27°C) before use. Always restir before use. Mixed material is usable for 6 hours; if it thickens, do not add thinner, but discard and mix fresh material. Higher temperatures will reduce working life of the coating; lower temperatures will increase it. Surfaces coated with this product may become slippery when wet. For additional slip resistance in areas of pedestrian traffic, add one pound per gallon of coarse pumice or other texturing material.

Application: Spray is preferred for appearance and film build control. For air spray application, use a fluid tip of .070" or larger, a Graco #800 Gun and an air cap with good break-up. The fluid pressure should be kept low, with just enough air pressure to get good break-up of the coating. Excessive air pressure can cause overspray problems. Where airless equipment is used, an airless spray pump capable of 3,000 psi (207 bars) and .019" to .025" tip size will provide a good spray pattern. Ideally, fluid hoses should not be less than 3/8" ID and

not longer than 50 feet to obtain optimum results. Longer hose length may require an increase in pump capacity, pressure, and/or thinning. DEVRAN 224HS Coating may also be applied by brush or roller. Care should be taken that proper and uniform thicknesses are obtained. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding. For roller work use a clean synthetic roller with 1/4"-1/2" nap. New rollers should be thoroughly wet with the specified thinner and spun vigorously to remove loose fibers.

Cold Weather Applications: For substrate temperatures between 25°F (-4°C) and 40°F (5°C) cold weather additive 060A0000 may be added. Two pint containers of 060A0000 may be added to the converter portion of a 10 gallon kit of DEVRAN 224HS. Thoroughly mix the 060A0000 additive in the converter with a power mixer prior to adding the converter to the base portion

Dry Time (ASTM D 1640): At 6 Mils (150 microns) DFT with Cold Weather Additive (060A0000)

	25°F(-4°C)	30°F(-1°C)	40°F(4°C)
Recoat	25 hours	16 hours	12 hours
Dry Hard	>32 hours	24 hours	16 hours

Spreading Rate: Apply at 150-300 sq.ft. per gallon (4-7m²/L) depending on surface texture and porosity. Make allowance for any losses due to overspray or surface irregularities.

Topcoats: Can be used as a finish for interior areas. Accepts a variety of topcoats. In interior or exterior areas, DEVTHANE™ Urethane Enamels could be used as a finish to enhance performance and/or appearance.

Dry Time: At 77°F (25°C) & 50% R.H., dries to recoat with epoxy or urethane in 6 hours and dry hard in 9 hours.

Clean-up: Use T-10 Thinner.

PRECAUTIONS

For industrial use only. Keep out of reach of children. Consult Material Safety Data Sheets appropriate for this product for important health and safety information prior to use.

	COMPONENT	HEALTH	FLAMMABILITY	REACTIVITY
HMIS DATA	224HS BASE 224FNXXXX	2*	2	1
	224HS CONVERTER 224GN0908	2*	2	1

* Indicates possible chronic health hazard

SHIPPING

Freight Classification: Paint
Flash point: 100°F (38°C)
Packaging: 2 gallon kit (7.570L) 10 gallon kit (37.850L)
 1.00 gallon base 5.00 gallon base
 1.00 gallon converter 5.00 gallon converter

Shipping Weight: 4 gallon case (base or converter) - 53 lbs. (24.0 kg)
 10 gallon kit - 133 lbs. (60.3 kg)

224HXXXX (9/99)
 Ad Stock #68634A



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