

The Original
Color Chips

FLOOR COATING SYSTEMS



CUSTOM EPOXY FLOORS!

DO IT YOURSELF KITS

PRIMER **BASECOAT** **CHIPS** **CLEARCOAT**
1 **2** **3** **4**

THE ORIGINAL COLOR CHIPS SYSTEM 4 SOLVENTBORNE FLOOR COATING KIT IS DESIGNED FOR GARAGES AND WAREHOUSES ONLY. OUR MOST POPULAR SYSTEM THAT WE RECOMMEND FOR PUTTING DOWN A GREAT, HIGH BUILD, DURABLE AND CHEMICAL/UV-RESISTANT EPOXY FLOOR, WOULD BE AS FOLLOWS:

The Original
Color Chips

**SYSTEM 4
SOLVENTBORNE**



SYSTEM 4 INCLUDES:

*Preprime 167 Primercoat
224HS Solventborne Colored Basecoat
Decorative Color Chip Flakes
Hpu-747 Clear Urethane Topcoat*

INSTALLATION INSTRUCTIONS & PRODUCT DATA SHEETS

ORIGINAL COLOR CHIPS • 26200 GROESBECK HWY • WARREN, MI 48089
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PATCHING: Patching pits and divots (*optional*) is the first step of the process. Remove loose aggregate and repair voids. Fill pits and puck marks by using a patching compound or concrete patch with sand to achieve a thick 'peanut butter' thickness to trowel into the voids. Wait 24 hours for compound to fully cure before acid-etching or grinding.

Example: Patching cracks, pits & divots



Example: Filling expansion joints



Optional: Use a self-leveling sealant to caulk into the expansion joints to make a clean line. It is recommended to only partially fill the "saw cuts" as this will allow the concrete to expand and contract as necessary.

Example: Applying Etch N' Clean



of the concrete with a stiff bristle broom. The acid should only have contact with the concrete for a maximum of 10 minutes. Triple rinse thoroughly with water (*power washing is ideal*) and **allow to dry a minimum of 8-10 hours**. Remove loose aggregate by sweeping.

Example: Grinding concrete surface



SURFACE PREPARATION:

Concrete Surfaces: All surfaces must be sound, dry, clean and free of oil, grease, dirt, mildew, form release agents, curing compounds, loose and flaking paint and other foreign substances prior to applying your primercoat. Remove laitance and roughen unusually slick poured or precast concrete as well any oil, grease, and dirt by utilizing muriatic acid, phosphoric acid, or by grinding the concrete rough. The Original Color Chips Etch 'n Clean solution is a phosphoric acid that has the ability to provide both the cleaning and the profiling (*roughening the surface*) in one operation, but since it is a better cleaner than an etcher it is recommended to grind the concrete or use muriatic acid on steel-trowelled (*very smooth*) concrete floors. Etching the concrete allows the base coat to adhere securely. Pour onto surface and scrub into the pours

Previously Painted Surfaces: Old coatings should be tested for lifting. If lifting occurs, remove the lifted coating chemically or mechanically (*grinding*). If the coating is not lifting simply scuff / sand entire area to remove gloss and roughen. Clean with TSP or rub with Xylol and allow to dry. Once dry, start coating with the 224HS basecoat epoxy. (*the primer and etch n' clean is not necessary on previously painted coatings*).



PRIMERCOAT - PREPRIME 167 INSTRUCTIONS

PRIMING: Using the *Preprime 167 penetrating sealer* will improve the effectiveness and efficiency of the coating by penetrating and sealing the concrete plus providing an additional bonding coat for your basecoat; improving the service life of the maintenance system. The entire contents of each container (*part A and part B*) must be mixed together. Add the converter portion to the base portion slowly with continued agitation. Once the two components are mixed you have 4 hours to use it (*4 hour potlife*). The *Preprime* has a very low viscosity (*much like water*) so usually one gallon will coat over 500 sq ft. It **MUST** be applied in one thin, wet coat sufficient to completely cover and penetrate the surface. Do not apply heavy coats. There should be **NO POOLING**, just a thin layer to soak into the concrete. After it has been applied, wait until the *Preprime* becomes tacky or hard. This can occur anywhere between 1 hour and 24 hours, depending on the porosity of the concrete.

Example: PrePrime 167 kit



Example: Mix part A & B together in a separate pail



Preprime 167 is normally a dip-and-roll application with a 3/8" nap roller. It will dry blotchy and uneven, some areas will be glossy and some dull, some tacky and some dry. This is normal, however once tacky the basecoat can be applied.
Note: must be top coated within 72 hours of application.

Example: Cutting-in & rolling out PrePrime 167



Example: Applied and dry PrePrime 167 Penetrating Sealer





BASECOAT - 224HS INSTRUCTIONS

BASECOAT APPLICATION: *MIXING:* Do not apply over wet surfaces or under very humid conditions where condensation or fog could settle on the coating during the cure process. The entire contents of each container (**224HS Part A and 224 Converter**) must be mixed together in a separate container (*5-gallon bucket preferred*).

Example: 224HS solventborne epoxy kit



Mix both portions first to obtain a smooth, homogeneous condition. Then pour Part A into bucket, adding the converter slowly with continued agitation.

Example: Mix part A & B together in a separate pail



Example: Thoroughly mix combined parts A & B



After the converter add is complete, continue to mix. You want to mix it for a minimum of 5 minutes (*mix VERY thoroughly*). The 224HS epoxy can be very thick and difficult to roll out depending on the temperature and humidity levels. If this is the case, mix in 4-6 ounces of Xylol (*Xylene*) per gallon of mixed material. This will make the material much more manageable without sacrificing its protective properties. Allow the mixed material to stand 15 minutes at 60-80°F (16-27°C) before use. Restir before using. Mixed material is usable for 6 hours. Higher temperatures will reduce working life of the coating; lower temperatures will increase it. *Coverage:* 200-225 sq/ft per gallon over primed concrete.



BASECOAT - 224HS INSTRUCTIONS

APPLYING THE BASECOAT/CHIPS: After material is thoroughly mixed, Start painting in the corner furthest away from the exit of the room. Use a brush to cut in along the walls and edges. Pour from the bucket onto the floor in thin ribbons then roll the material out using a quality ½” nap roller.

Example: Cutting-in 224HS basecoat



Example: Roller applying 224HS Basecoat



After you have painted a large enough area (8 x 8 foot) begin to apply the chips. Chips are applied by tossing them upward toward the ceiling allowing them to float down into the wet basecoat. (*We recommend dispersing the chips in a “feeding the chickens” style toss; using only three fingers to take a pinchful of chips at a time and launching them into the air at an upward angle, allowing the chips to float down into the wet coating.*)

Example: Use a small pinch of color chips



Example: Release and let chips float down onto the epoxy



It will take at least an hour for the material to start to tack up so you have plenty of time to broadcast your chips evenly. If you broadcast too much in one area, you have to match the entire floor to that spot so take your time and do a little at a time. Continue painting approximately 6 foot wide sections and tossing chips until entire floor is complete. Since everyone’s idea of medium and heavy chip coverage can be different, it’s important to make sure you don’t run out of chips before the end of your job. It’s best to use apply a little less chips onto the floor than what you generally want, that way you when you reach the end of your floor you can apply what chips have left and give the floor a much more dense appearance. Another tool to assist in achieving uniform chip coverage is spike shoes. Wearing spike shoes will grant you the ability to walk otop the wet epoxy. By walking across the wet epoxy as you roll it out you can paint large areas and go back, or walk over to areas not completely covered and sprinkle more chips to make a more uniform appearance. Note: be careful not to drop chips in handfuls directly down onto floor, once chips are placed they cannot be moved, but they can be painted over and re-chipped if you make a mistake. **Dry Time: At 77°F (25°C), dries to recoat with epoxy or urethane in 6 hours and dry hard in 9 hours.**



TOPCOAT APPLICATION: Our **HPU 747 High Performance Urethane** is a flammable liquid and very gaseous, therefore it is recommended to wear an OV respirator and make sure area is well ventilated. This product should **NEVER** be used in a basement. While applying the clearcoat leave garage bays open as well as during the curing process. *(You may partially close at night, leaving it open a few inches from the floor and reopen in the morning just make sure open flame is not present).* You will know when you are ready to apply topcoat *(at least 10-12 hours after the basecoat is applied)* when you can no longer see your thumbprint in the coating. Our High Performance Urethane (HPU 747) is a two-component product. Mix Part A and Part B together *(2 to 1 mix ratio)*. The entire contents of each container must be mixed together. It is important that all mixing equipment is free of moisture and that moisture does not contaminate the coating.

Example: HPU 747 urethane kit



Example: Mixing HPU 747 clearcoat



Example: Applying HPU 747



Mix the base portion to obtain a smooth, homogeneous condition. After mixing the base portion, add the converter slowly with continued agitation. Mix thoroughly. The pot life of the mixed material is 3 hours at 77° (25°C). Higher temperatures will reduce working life of the coating; lower temperatures will increase it. Humidity does play a large role in curing times. Make sure the weather forecast permits at least 2 full days of no rain before applying the topcoat. *(It is not recommended to apply the material or allow to cure during rainfall, the moisture in the air can cause hazing).* Roll one even coat of HPU over entire surface to be coated. When applying topcoat walk on previously applied chip/basecoat with clean shoes or socks only, any dirt or debris tracked on to chip/ basecoat will be sealed in by application of clear topcoat. Use a small chip brush to complete the edging around the perimeter, continue onto the rest of the floor with a quality 3/8" nap roller. Be sure to apply coating evenly. Applying too thick may cause hazing or yellowing.

Dry Time: **Dries to light foot traffic in 14-24 hours. You can move heavy items on it in 36-48 hours. Full cure in five to seven days.** Low temperature, high humidity, thick films or poor ventilation will increase these times. Lack of ventilation and/or the use of portable fuel burning heaters that produce exhaust gases, during application and initial stages of curing, may cause yellowing to occur.



SYSTEM 4 - NOTES/FAQS: This system can be completed in 2 or 3 days after the prep work has been completed. We usually recommend a three day process after the preparation is complete:

Day 1: Apply the Preprime 167 primer.

Day 2: Apply your 224HS base coat and chips

Day 3: Roll on your clear top coat.

Day 4: You can walk on the floor

Day 5-6: Move heavy items on the floor

Day 7: Car traffic

Essential Tools of the Trade: 3/8" nap roller (1 for the Primer, 1 for the Clearcoat), 1/2" nap roller (1 for the basecoat), quart of xylol (Xylene) (for cleanup and thinning basecoat), 3" brush (for edging), buckets, etc.

PRODUCT DESCRIPTION

Generic: Chelated Polymeric Oxirane

General Description: A high performance, two-component chemically-cured 100% solids epoxy penetrating sealer.

Typical Uses: Recommended for rusty steel when environmental economic or safety concerns restrict abrasive blast cleaning. The extraordinary penetrating properties of PRE-PRIME 167 sealer provide a means of reinforcing rusty steel substrates, insuring adhesion of subsequent coatings. Equally effective at penetrating, reinforcing, and sealing concrete and masonry surfaces in all industrial environments.

Improves the effectiveness and efficiency of the maintenance painting process by penetrating and sealing crevices, joints, back-to-back angles of existing structures, and edges of old coatings, improving the service life of the maintenance system. Also serves to seal aged "White-Rusted" zinc surfaces for recoating.

SPECIFICATION DATA

Color: Amber Clear

Finish: Medium Sheen

Weight/Gallon: 8.5 lbs./gal.(1.02 kg/L)

VOC (EPA 24): 0.83 lbs./gal.<100 g/L

Solids By Volume: 100%

Theoretical Coverage at 1.0 Mil Dry: 1604 sq.ft./gal. (39.3 m²/L)

Recommended Film Thickness: 1.5 mils (37.5 microns) dry – 1.5 mils (37.5 microns) wet

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

Minimum Dry Time (ASTM D 1640): At 77°F (25°C) and 50% R.H. to recoat – overnight. Ventilation, film thickness, humidity, thinning, and other factors can influence the rate of dry.

Substrate Temperature	50°F (10°C)	60°F (16°C)	80°F (27°C)
Minimum Recoat	When film sets up and becomes tacky. Usually within 24 hours.		
Maximum Recoat	From point film sets up and becomes tacky.		
Self Epoxy	3 Days	3 Days	3 Days

Ventilation, film thickness, humidity, thinning, and other factors can influence the rate of dry.

Warning: The above table provides general guidelines only. Always consult your ICI Paints Representative 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 12 months at 77°F (25°C) – unopened

Mix Ratio: 3 (base): 1 (converter) – see mixing instructions.

Induction: None – see mixing instructions.

Pot Life: 4 hours @ 77°F (25°C) & 50% R.H.

FEATURES

Advantages:

- Low VOC
- Reinforces rusty steel, masonry, and aged "White-Rusted" zinc surfaces
- Penetrates surface rust, crevices, back-to-back angles
- Penetrates pores and tiny cracks in concrete and masonry surfaces
- Cures to a tough, water resistant coating
- 100% volume solids
- Very low viscosity
- Low film thickness required
- No shrinkage
- Applies easily by brush, roll, or spray

Limitations of Use: Not recommended for use without a topcoat. Do not puddle on horizontal surfaces.

PERFORMANCE DATA

More than 24 years in industrial applications

PRE-PRIME 167 sealer enhances the performance of ICI Paints Devoe High Performance Coatings brand paints and systems over sound rust and masonry substrates.

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

Read Label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF1-0690

GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean, free of oil, dirt, grease, chemicals and foreign matter.

Surfaces: Rusty Steel and Weathered Rusty Galvanized Metal – PRE-PRIME™ 167 sealer is designed for less than ideal surface preparation. However, performance will be improved as surface preparation improves. All oil/grease contaminants, loose rust, loose scale and loose paint must be removed. Best performance will be obtained by treating all

surfaces with DEVPREP® 88 or other suitable cleaner, followed by a high pressure water wash before applying PRE-PRIME 167 sealer. **Concrete and Masonry** – Remove oil, grease, mildew, form release agents, loose laitance, and foreign matter.

Previously Painted Surfaces: Remove loose and peeling paint, loose rust and other surface contaminants. Clean with DEVPREP 88 or other suitable cleaner, followed by a high pressure water wash. **Apply a test patch to confirm compatibility of PRE-PRIME 167 sealer with existing coating systems.**

DIRECTIONS FOR USE

Tinting: Do not tint.

Thinning: Do not thin.

Mixing: PRE-PRIME™ 167 sealer is a two component product supplied in 4 gallon and 1 gallon kits which contain the proper ratio of ingredients. The entire contents of each container must be mixed together. Add the converter portion to the base portion slowly with continued agitation. After the converter add is complete, continue to mix slowly until homogeneous. **Do not thin this material.** Mixed material is usable for 4 hour @ 77°F; if it thickens, do not add thinner, but discard and mix fresh material. Avoid storing or placing containers in direct sunlight.

Application: Brush, roll or conventional spray. For airless spray apply with a .009 tip and low pressure (just enough to atomize the product). Air spray is preferred for appearance and build. To minimize overspray, use low air pressure and pot pressure – 5 to 10 psi. For roller work use a clean synthetic roller with 1/4" or 1/2" nap. New rollers should be thoroughly wet with T-10 thinner and spun vigorously to remove loose fibers. (PRE-PRIME 167 sealer is low in viscosity.) Usually one coat is sufficient, but for porous surfaces two coats may be required. It should be applied in one thin, wet coat sufficient to completely cover and penetrate to the steel surface. Do not apply heavy coats, avoid puddling.

Spreading Rate: Apply at 1069 sq. ft. per gallon (26 m²/L) depending on surface texture and porosity. Make allowances for any losses due to overspray or surface irregularities.

Topcoats: Accepts a wide variety of Devco Coatings High Performance Coatings brand products. Commonly used with epoxy and urethane coatings.

Dry Time (ASTM D 1640): At 77°F (25°C) & 50% R.H., dries to recoat overnight. Low temperature will retard dry. Minimum recommended substrate temperature is 50°F (10°C). After overnight cure, PRE-PRIME 167 maybe overcoated if still tacky (not wet). Should be overcoated within 72 hours from point of being tack free.

Clean-up: Use T-10 thinner, except in the South Coast Air Quality Management District use acetone or other solvent in compliance with local VOC and air quality regulations.

PRECAUTIONS

DANGER! COMBUSTIBLE LIQUID AND VAPOR. CORROSIVE. CAUSES EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.** Keep away from heat, sparks and flame. **Do not smoke.** Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. If sanding is done, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** In case of skin contact, wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin, then wash again with soap and water. Repeated applications may be needed. Remove contaminated clothing. For eye contact, flush immediately with large amounts of water, for at least 15 minutes. **Obtain emergency medical treatment.** If swallowed, **obtain medical treatment immediately.** If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, get medical help. **KEEP FROM FREEZING.**

DS86-1003

SHIPPING

Flash Point: 200°F (43°C)
Packaging: 1 gallon kit (3.785L)
 0.75 gallon base
 0.25 gallon converter

4 gallon kit (15.14L)
 3.00 gallon base
 1.00 gallon converter

Shipping Weight: 4 - 1 gallon kits - 45 lbs. (20.4 kg)
 4 gallon kit - 45 lbs. (20.4 kg)

167 (05/07)
 Ad Stock #68631F



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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.

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.

FEATURES

Advantages:

- Excellent corrosion protection
- 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
- 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 DEVTHANE® Urethane Enamel for maximum exterior color & gloss retention. Use only products that are in compliance with local VOC regulations.

SPECIFICATION DATA

Color: Off White, ready-mixed & custom colors

Finish: Semi-Gloss

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

VOC (EPA24): 1.8 lbs./gal. (212 g/L) – varies with color.

When thinned 5% with T-10 thinner, VOC < 250 g/L (2.08 lbs./gal.)

When thinned 10% with T-10 thinner, VOC < 275 g/L (2.29 lbs./gal.)

224FN3501 VOC (EPA 24) (TBAC Exempt): < 100 g/L (0.83 lbs./gal.)

224FN3501 VOC (TBAC Non-Exempt): < 250 g/L (2.08 lbs./gal.)

Solids By Volume (ASTM D 2697-7days): 75%±2% – 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 Paints Representative for proper systems using this product. Systems must be selected considering the particular environment involved.

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
359, 389	15 Days	10 Days	7 Days	7 Days
378, 379	10 Days	7 Days	5 Days	3 Days

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

Warning: The above table provides general guidelines only. Always consult your ICI Paints Representative 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 Paints Representative 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

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 4585) – Excellent

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

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

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

Chemical Resistance: (ASTM D 1308 – 24 hr. contact) – Excellent.

Resists splash and spillage of alkalis, salts, moisture, oils, greases, food stuffs, and detergents, 50% 3, 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 DEVVRAN 224HS coating at 4 mils (100 microns) DFT per coat.

DANGER! COMBUSTIBLE. HARMFUL OR FATAL IF SWALLOWED. Read label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF2-0790

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. DEVTRAN® 224HS was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 (ISO-Si2); for immersion service the minimum standard is SSPC-SP10 (ISO-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 DEVTRAN 224HS coating. **All direct to metal coatings provide maximum performance over near-white blasted surfaces.**

New Surfaces: Steel –New steel surfaces should be initially blasted to near-white metal surface cleanliness in accordance with SSPC-SP10 or ISO-Sa2 1/2 for immersion service or commercial blast cleanliness in accordance with SSPC-SP6 or ISO-Sa2 for non-immersion service. Blast profile on steel should be 1.2 to 2.5 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 or TRU-GLAZE-WB™ 4015 filler. **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 sealer or this coating. **Galvanized Steel** –Remove dirt and oils by solvent cleaning or with DEVPREP® 88 cleaner or other suitable cleaner followed by a thorough water rinsing. For non-immersion service, prime with DEVTRAN 205 or DEVTRAN 203 epoxy primers. For immersion or severe moisture condition, abrasive blasting is recommended before priming with this product or DEVTRAN 201. Choice of primer depends on local VOC and air quality regulations.

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**.

WARNING! If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

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: For compliance to VOC regulations, thin as follows: South Coast Air Quality Management District (SCAQMD) available in DC224FN3501 only: Thinning is not required, however, if thinning is desired, add acetone or T-0 thinner at no more than 5% by volume. Read and follow all hazard and precautionary information found on labels, data sheets and MSDS's. **California outside of SCAQMD:** Thinning is not required, however, if thinning is desired, add T10 Thinner at no more than 5% by volume. **All other areas:** Thinning is not required, however, if thinning is desired, 10% or less by volume of T-10 Thinner can be added depending on local VOC and air quality regulations. Any solvent addition should be made after the two components are thoroughly mixed.

Mixing: DEVTRAN 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. Avoid storing or placing containers in direct sunlight.

Application: Spray is preferred for appearance and film build control. For air spray application, use a fluid tip of .070" or larger, a professional grade conventional 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 over-spray 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. DEVTRAN 224HS epoxy may also be applied by brush or roller.

Care should be taken that proper and uniform thicknesses are obtained. 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. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

Cold Weather Applications: For substrate temperatures between 25°F (-4°C) and 40°F (5°C) cold weather additive 060A000 may be added. Two pint containers of 060A0000 may be added to the converter portion of a 10 gallon kit of DEVTRAN 224HS coating. 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)

Substrate Temperature	25°F(-4°C)	30°F(-1°C)	40°F(4°C)
To Recoat	25 hours	16 hours	11 hours2
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.

Dry Time (ASTM D 1640): 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, except in the South Coast Air Quality Management District use acetone, T-0 thinner or other solvent in compliance with local VOC and air quality regulations.

PRECAUTIONS

DANGER! COMBUSTIBLE LIQUID AND VAPOR. CORROSIVE. CAUSES EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE LUNG CANCER AND OTHER LUNG DAMAGE IF INHALED. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.** For emergency information call (800) 545-2643. For additional safety information, refer to the Material Safety Data Sheet for this product. Keep away from heat, sparks and flame. **Do not** smoke. Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. If sanding, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **KEEP FROM FREEZING.**

DS177-0306

SHIPPING

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)

224HS (05/07)
Add Stock #68634E

*CHROMA-CHEM is a Registered Trademark of Degussa GmbH.



Strongsville, Ohio U.S.A.
800-654-2616
www.devoecoatings.com

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HPU 747 CLEAR VOC

HIGH PERFORMANCE URETHANE TOPCOAT

ORIGINAL COLOR CHIPS CO - 26200 GROESBECK HWY - WARREN, MI



HPU 747 VOC is a two component polyester/aliphatic polyurethane coating that exhibits excellent characteristics for abrasion resistance, chemical resistance, flexibility, weathering, and UV stability. This product meets the VOC requirements for the newly enacted VOC laws of New York, Pennsylvania, New Jersey, Maryland, Connecticut, Massachusetts, California and other states as an industrial maintenance coating. It is recommended for auto service centers, warehouses, computer rooms, laboratories, aircraft hangers, cafeterias, exterior tanks, indoor or outdoor service and chemical exposures areas.

SOLIDS BY WEIGHT:

64% (clear) (+/- 2%)

SOLIDS BY VOLUME:

60% (clear) (+/- 2%)

VOLATILE ORGANIC CONTENT:

VOC content is less than 2.8 pounds per gallon (mixed)

RECOMMENDED FILM THICKNESS:

3-5 mils per coat wet thickness (yields 2-3 mils dry)

COVERAGE PER GALLON:

320 to 500 square feet @ 3-5 mils wet thickness

PACKAGING INFORMATION:

.75 gallon kit, 3 gallon and 15 gallon kits. 3 gal kit = 2 gallons part A (weight varies by color) and 1 gallon part B (8.5#) (weights and volumes approximate)

MIX RATIO:

2 parts A to 1 part B by volume (approximate)

SHELF LIFE:

1 year in unopened containers

FINISH CHARACTERISTICS:

high-gloss (>70 at 60 degrees @ Erichsen glossmeter)

IMPACT RESISTANCE:

Gardner Impact, direct & reverse=160 in lb (passed)

ABRASION RESISTANCE:

Taber abrasor CS-17 calibre wheel with 1000 gram total load and 500 cycles= 22.0 mg loss

ADHESION:

350 psi @ elcometer (concrete failure, no delamination)

VISCOSITY:

Mixed= 200-600 cps (typical)

DOT CLASSIFICATIONS:

Part A "FLAMMABLE LIQUID N.O.S., 3, UN1993, PGIII"
Part B "FLAMMABLE LIQUID N.O.S., 3, UN1993, PGIII"

HARDNESS:

Shore D= 62

FLEXIBILITY:

No cracks on a 1/8" mandrel

CURE SCHEDULE: (70°F)

pot life – (1 1/2 gallon volume).....2-4 hours
tack free (dry to touch).....3-5 hours
recoat or topcoat.....5-9 hours
light foot traffic.....14-24 hours
full cure (heavy traffic).....3-5 days

APPLICATION TEMPERATURE:

45-90 degrees F.

CHEMICAL RESISTANCE:

REAGENT	RATING
acetic acid 5%	B
xylene	D
mek	A
methyl alcohol	B
gasoline	D
10% sodium hydroxide	E
50% sodium hydroxide	D
10% sulfuric	D
10% hydrochloric acid	C
20% nitric acid	B
ethylene glycol	D

Rating key: A - not recommended, B - 2 hour term splash spill, C - 8 hour term splash spill, D - 72 hour immersion, E - long term immersion. NOTE: extensive chemical resistance information is available through your sales representative.

PRIMER:

Recommend, Urethane is designed as a topcoat but not directly to concrete. For best results primer with epoxy.

TOPCOAT:

None recommended

LIMITATIONS:

- *Colors or clarity for clear may be affected by high humidity, low temperatures, or chemical exposure.
- *For best results use a high quality 3/8" nap roller.
- *Slab on grade requires moisture barrier.
- *Substrate temperature must be 5°F above dew point.
- *All new concrete must be cured for at least 30 days.
- *Colored Version of HPU that are Light or bright colors (white, safety yellow, etc.) may require multiple coats or a suitable color coordinated primer to achieve a satisfactory hide.
- *Colors may vary from batch to batch, therefore, use only product from the same batch for an entire job.



HPU CLEARCOAT

APPLICATION INSTRUCTIONS

PRODUCT STORAGE: Store product in an area as to bring the material to normal room temperature before using. Continuous storage should be between 60 and 90 degrees F.

SURFACE PREPARATION: Surface preparation will vary according to the type of complete system to be applied. For a one or two coat thin build system (3-10 mils dry) we recommend either mechanical scarification or acid etching until a suitable profile is achieved. For a complete system build higher than 10 mils dry, we recommend a fine brush blast (shot blast) All dirt, oil, dust, foreign contaminants and laitance must be removed to assure a trouble free bond to the substrate. A test should be made to determine that the concrete is dry; this can be done by placing a 4'X4' plastic sheet on the substrate and taping down the edges. If after 24 hours, the substrate is still dry below the plastic sheet, then the substrate is dry enough to start coating. The plastic sheet testing is also a good method to determine if any hydrostatic pressure problems exist that may later cause disbonding.

PRODUCT MIXING: This product has a two to one mix ratio by volume- merely mix two gallons of part A with 1 gallon part B. After the two parts are combined, mix well with slow speed mixing equipment such as a jiffy mixer until the material is thoroughly mixed and streak free. Avoid whipping air into the coating. Improper mixing may result in product failure.

PRODUCT APPLICATION: The mixed material can be applied by brush or roller. Maintain temperatures within the recommended ranges during the application and curing process. Properly prime the substrate. It is best to maintain a wet edge to avoid roller marks. Direct sunlight or high temperatures may cause visible roller marking during application. Too thick of an application may result in product failure. Exposure to certain types of lighting such as sodium vapor lights may cause the product to discolor.

RECOAT OR TOPCOATING: Multiple coats of this product are acceptable. If you opt to recoat this product, you must first be sure that all of the solvents have evaporated from the coating during the curing process. The information on the front side are reliable guidelines to follow. However, it is best to test the coating before recoating or topcoating. This can be done by pressing on the coating with your thumb to verify that no fingerprint impression is left. If no impression is created, then the recoat can be started. Always remember that colder temperatures will require more cure time for the product before recoating can commence. Before recoating or topcoating, check the coating to insure no contaminants exist. If a blush or contaminants are present on a previous coat, remove with a standard detergent cleaner. When recoating this product with subsequent coats of the urethane, it is advisable to apply the recoat before 24 hours passes. Also, it is advisable to degloss the previous coat to insure a trouble free bond. You can also tack-rag the floor for best possible results. Basically what you'll want to do is degloss the urethane coating by light sanding, then use a rag dipped in thinner (m.e.k., Xylol Xylene, etc) (call tack ragging) and rub over the entire surface and allow to evaporate. This will soften up the coating and allow the subsequent urethane coating to adhere properly

CLEANUP: Use ketone solvents

FLOOR CLEANING: Caution! Some cleaners may affect the color of the floor installed. Test each cleaner in a small area, utilizing your cleaning technique. If no ill effects are noted, you can continue to clean with the product and process tested.

RESTRICTIONS: Restrict the use of the floor to light traffic and non-harsh chemicals until the coating is fully cured (see technical data under full cure). It is best to let the floor remain dry for the full cure cycle.

NOTICE TO BUYER: DISCLAIMER OF WARRANTIES AND LIMITATIONS ON OUR LIABILITY

We warrant that our products are manufactured to strict quality assurance specifications and that the information supplied by us is accurate to the best of our knowledge. Such information supplied about our products is not a representation or a warranty. It is supplied on the condition that you shall make your own tests to determine the suitability of our product for your particular purpose. Listed physical properties are typical and should not be construed as specifications. NO WARRANTY IS MADE, EXPRESSED, OR IMPLIED, REGARDING SUCH OTHER INFORMATION, THE DATA ON WHICH IT IS BASED, OR THE RESULTS YOU WILL OBTAIN FROM ITS USE. NO WARRANTY IS MADE, EXPRESSED OR IMPLIED, THAT OUR PRODUCT SHALL BE MERCHANTABLE OR THAT OUR PRODUCT SHALL BE FIT FOR ANY PARTICULAR PURPOSE. NO WARRANTY IS MADE THAT THE USE OF SUCH INFORMATION OR OUR PRODUCT WILL NOT INFRINGE UPON ANY PATENT. We shall have no liability for incidental or consequential damages, direct or indirect. Our liability is limited to the net selling price of our product or the replacement of our product, at our option. Acceptance of delivery of our product means that you have accepted the terms of this warranty whether or not purchase orders or other documents state terms that vary from this warranty. No representative is authorized to make any representation or warranty or assume any other liability on our behalf with any sales of our products. Our products contain chemicals that may CAUSE SERIOUS PHYSICAL INJURY. BEFORE USING, READ THE MATERIAL SAFETY DATA SHEET AND FOLLOW THE PRECAUTIONS TO PREVENT BODILY HARM.