

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: Use as a filler for 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.

SPECIFICATION DATA

Color: Off White, ready-mixed & custom colors,

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 Paints' Representative 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.)

FEATURES

Advantages:

- Excellent corrosion protection
- 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
- 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.

Substrate Temperature	40°F (4°C)	60°F (16°C)	70°F (21°C)	80°F (27°C)
Minimum Recoat	20 Hours	8 Hours	6 Hours	3 Hours
Dry Hard	42 Hours	16 Hours	9 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 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
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 4585) – 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% 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 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. DEVVRAN® 224HS was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 (ISO-S12); 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 DEVVRAN 224HS.

New Surfaces: Steel – New steel surfaces should be initially blasted to near-white metal surface cleanliness in accordance with SSPC-SP10 or ISO-Sa21/2 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 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 or TRU-GLAZE® 4010. **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. **Galvanized Steel** – Remove dirt and oils by solvent cleaning or with DEVPREP® 88 Cleaner followed by a thorough water rinsing. Prime with DEVVRAN 205 Epoxy Primer for non-immersion. For immersion or severe moisture condition, abrasive blasting is recommended before priming with DEVVRAN 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.

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

Mixing: DEVVRAN 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. DEVVRAN 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 060A000 may be added. Two pint containers of 060A000 may be added to the converter portion of a 10 gallon kit of DEVVRAN 224HS.

Thoroughly mix the 060A000 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 (060A000)

	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

DANGER! COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE 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 EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE LUNG CANCER AND OTHER LUNG DAMAGE IF INHALED. OVEREXPOSURE MAY CAUSE 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. 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.**

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)

224FNXXXX/224GN0908 (8/03)
Ad Stock #68634C

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HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.

Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, chest pain, blurred vision, coughing, choking, difficulty with speech, apathy, central nervous system depression, intoxication, tightness of chest, metallic taste, anesthetic effect or narcosis, difficulty of breathing, allergic response, fever and chills, dehydration, tremors, abnormal blood pressure, liver damage, kidney damage, pulmonary edema, pneumoconiosis, loss of consciousness, cyanosis, respiratory failure, asphyxiation, death. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, blistering, allergic response, severe skin irritation, severe skin irritation or burns. Possible sensitization to skin.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation, severe eye irritation or burns, corneal injury.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, mucous membrane irritation, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, visual disturbances, apathy, central nervous system depression, anesthetic effect or narcosis, burns of the mouth, throat, stomach, liver damage, kidney damage, pulmonary edema, loss of consciousness, respiratory failure, death.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders, nervous system disorders, respiratory disorders, allergies.

FIRST-AID MEASURES**(ANSI Section 4)**

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use. Dispose of contaminated leather items, such as shoes and belts. If irritation occurs, consult a physician.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES**(ANSI Section 5)**

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors may ignite explosively at ambient temperatures. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. Closed containers may burst if exposed to extreme heat or fire. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus. Self-contained breathing apparatus recommended.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, acid fumes, oxides of sulfur, aldehydes, toxic gases, barium compounds, smoke and soot. Phenolics cyanides.

ACCIDENTAL RELEASE MEASURES**(ANSI Section 6)**

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Spills may be collected with absorbent materials. Use non-sparking tools. Evacuate all unnecessary personnel. Place collected material in proper container. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE**(ANSI Section 7)**

Handling and storage : Store below 100F (38C). Keep away from heat, sparks and open flame.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure control/personal protection. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION**(ANSI Section 8)**

Respiratory protection : Control environmental concentrations below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian z94.4) Approved elastomeric sealing- surface facepiece respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilters. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 For selection of respirators (Canadian z94.4).

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield, apron.

STABILITY AND REACTIVITY**(ANSI Section 10)**

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, bases, aldehydes, amines, nitric acid, combustible materials, mineral acids, Nitrates.

Conditions to avoid : Elevated temperatures, contact with oxidizing agent, storage near acids, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur may polymerize in presence of aliphatic amines.

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material. Complies with OSHA hazard communication standard 29CFR1910.1200.

TOXICOLOGICAL INFORMATION

(ANSI Section 11)

Supplemental health information: Contains a chemical that is moderately toxic by ingestion. Contains a chemical that may be absorbed through skin. Notice - 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. Other effects of overexposure may include toxicity to liver, kidney, central nervous system, blood.

Carcinogenicity: Inhalation of non-asbestos form cosmetic grade tale for 2 years at 6 and 18 mg/m³ produced clear evidence of carcinogenicity in female rats (lung and adrenal tumors) and some evidence of carcinogenicity in male rats (adrenal tumors). No evidence of carcinogenicity was demonstrated in male and female mice exposed under the same conditions. Microscopic examination of the lungs of rats and mice exposed to tale revealed additional exposure related effects primarily associated with the inflammatory response. Contains crystalline silica which is considered a hazard by inhalation. IARC has classified crystalline silica as carcinogenic to humans (group 1). Crystalline silica is also a known cause of silicosis, a noncancerous lung disease. The national toxicology program (NTP) has classified crystalline silica as a known human carcinogen. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2 year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Physical Data

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMS	DOT, proper shipping name
224F3501N	devran 224lbs high build epoxy coating white base p	13.01	91.43	31.21	100 f	208-208	*320	UN1263, paint, combustible liquid, PGII
224G0908	devran 224lbs high build epoxy coating, neutral con	11.74	125.83	27.62	100 f	208-415	*320	UN2924, flammable liquid, corrosive, n.o.s.,(resin solution, alkyphenols), 3(B), PGIII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	224F3501N	224G0908
benzene, ethyl-	ethylbenzene	100-41-4	.1-1.0	.1-1.0
1,2-ethanediamine, n,n'-bis(2-aminoethyl)-	triethylenetetramine	112-24-3		1-5
antigorite	antigorite	12135-86-3	1-5	1-5
benzene, dimethyl-	xylene	1330-20-7	1-1.0	1-5
titanium oxide	titanium dioxide	13463-67-7	20-30	
tremolite, nonasbestiform	tremolite	14567-73-8	5-10	1-5
talc	talc	14807-96-6	1-5	1-5
quartz	quartz	14808-60-7	10-20	5-10
anthophyllite, nonasbestiform	anthophyllite	17066-78-9	1-1.0	1-1.0
oxirane,2,2'-(1-methylethyldiene)bis(4,1-phenyleneoxymethylene))bis, homopolymer	epoxy resin	25085-99-8	30-40	
acetic acid, 1,1-dimethylethyl ester	tert-butyl acetate	540-88-5	10-20	5-10
solvent naphtha (petroleum), light aromatic	light aromatic solvent naphtha	64742-95-6		1-5
fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	polyamide resin	68410-23-1		20-30
1-butanol	n-butanol	71-36-3	1-5	
sulfuric acid, barium salt	barium sulfate	7727-43-7		20-30
phenol, 4-nonyl-, branched	4-nonylphenol, branched	84852-15-3		10-20
benzene, 1,2,4-trimethyl-	pseudocumene	95-63-6		1-5

Reproductive effects: High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Mutagenicity: No mutagenic effects are anticipated

Teratogenicity: No teratogenic effects are anticipated

ECOLOGICAL INFORMATION

(ANSI Section 12)

No ecological testing has been done by ICI paints on this product as a whole.

DISPOSAL CONSIDERATIONS

(ANSI Section 13)

Waste disposal: Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

REGULATORY INFORMATION

(ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product contains 10% or greater of a chemical classified by DOT as a marine pollutant (see Chemical Hazard Data table). This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

Chemical Hazard Data

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV			OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	I	O
		8-Hour TWA	STEL	C	8-Hour TWA	STEL	C								
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	not est.	not est.	not est.	n	y	n	y	n	n	n	
triethylenetetramine	112-24-3	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
antigonite	12135-86-3	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
xylene	1330-20-7	100 ppm	150 ppm	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	
titanium dioxide	13463-67-7	10 mg/m3	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	y	n	
lremolite	14567-73-8	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
talc	14807-98-6	2 mg/m3	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
quartz	14808-60-7	.025 mg/m3	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
anthophyllite	17066-78-9	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	y	n	
epoxy resin	25085-99-8	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
tert-butyl acetate	540-88-5	200 ppm	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
light aromatic solvent naphtha	64742-95-6	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
polyamide resin	68410-23-1	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
n-butanol	71-36-3	20 ppm	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
barium sulfate	7727-43-7	10 mg/m3	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n	n	n	
4-nonylphenol, branched	84852-15-3	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	
pseudocumene	95-63-6	25 ppm	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n	n	n	

Footnotes:
 C= Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/e=not applicable
 not est=not established
 CC=CERCLA Chemical
 ppm=parts per million
 mg/m3=milligrams per cubic meter
 Sup Cont=Supplier Confidential
 S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard
 H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, y=yes, n=no



DEVTHANE[®] 379UVA

Aliphatic Urethane Gloss Enamel

(White, Ready-Mixed & Custom Colors)

Cat. # 379KXXXX

PRODUCT DESCRIPTION

Generic: Aliphatic Acrylic Polyurethane

General Description: A high performance, two-component chemically-cured aliphatic urethane gloss enamel for use in areas where maximum gloss & color retention are required.

Typical Uses: For use on properly prepared and primed steel, concrete or steel floors, masonry, drywall, plaster, metal, concrete block, galvanized, aluminum, poured concrete, and glazed brick. Ideal for use on exterior or interior structural steel, piping, metal buildings, control cabinetry, conveyors, pumps, storage tanks, motors, machinery, and transportation vehicles. Can also be used in the hard service areas of food processing plants, dairies, schools, restaurants, hospitals, correctional facilities, factories, stadiums, arenas, and amusement parks.

SPECIFICATION DATA

Color: White (tintable), ready-mixed & custom colors

Finish: Gloss (90 units @ 60°)

Reduction Solvent: T-9 or T-17 Thinner – see Thinning

Clean-up Solvent: T-9 Thinner

Weight/Gallon: 11.0 lbs./gal. (1.32 kg/L) – varies with color

VOC (EPA 24): 2.60 lbs./gal. (311 g/L) – varies with color

Solids By Volume (ASTM 2697-7 days): 63%

Theoretical Coverage at 1.0 Mil (25 microns) Dry: 1011 sq. ft./gal. (24.9 m²/L)

Recommended Film Thickness: 2.0-3.0 mils (50-75 microns) dry – 3.2-4.8 mils (80-120 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.

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

Minimum Dry Time (ASTM D 1640): 2 mils (50 microns) DFT

Substrate Temperature	40°F (4°C)	60°F (16°C)	80°F (27°C)
Minimum Recoat	10 Hours	6 Hours	3 Hours
Dry Hard	>32 Hours	24 Hours	16 Hours
Maximum Recoat			
Self	2 Weeks	2 Weeks	2 Weeks

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 12 months at 77°F (25°C) – unopened.

Hardness (ASTM D 3363, 7 day cure @ 77°F (25°C): 4H

Mix Ratio By Volume: 4 (base): 1 (converter) – see mixing instructions.

Induction: None – see mixing instructions.

Pot Life: 4 hours @ 77°F (25°C)

FEATURES

Advantages:

- Exceptional gloss and color retention
- Excellent abrasion and chemical resistance
- Higher solids and higher film build than typical urethane finishes
- VOC Compliant Urethane
- Easily applied by brush, roller or spray
- Wide color selection, including safety colors
- Excellent resistance to marring, chipping, and scratching
- Contains ultraviolet light absorber

Graffiti Resistance:

Excellent resistance to most graffiti materials such as spray paint, magic markers and lipstick. Contact your ICI Paints' Representative for more information on the graffiti removing cleaner to service your needs.

Limitations of Use: Color may change as temperature approaches 250°F (121°C) limit, but the film will remain intact.

PERFORMANCE DATA

Adhesion: (ASTM D 4541) – Excellent

Salt Spray Resistance: (ASTM B 117) – Excellent

Abrasion Resistance: (ASTM D 4060) – Excellent

Humidity Resistance: (ASTM D 4585) – Excellent

Exterior Exposure: 45° South Florida – Excellent

Chemical Resistance: (ASTM D 1308 – 24 hour contact) resists splash and spillage of alkalis, salts, moisture, oils, greases, foodstuffs and detergents.

Stain Resistance: (ASTM D 1308 – 1 week contact) Excellent. Resists stains such as crayon, lipstick, coffee, soil medium, shoe polish, grape juice, ink pen, marker, and spray paint.

DANGER! FLAMMABLE. HARMFUL OR FATAL IF SWALLOWED. Read Label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF3-0696

9 FINISHES HIGH PERFORMANCE COATINGS (09960)



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09960

GENERAL SURFACE PREPARATION

All surfaces must be sound, clean, dry, and free of oil, grease, mildew, form release agents, laitance, and foreign matter. To insure the best appearance, the primer or undercoat should be smooth and free of any surface defects such as runs, dry spray or heavy orange peel.

New Surfaces: Steel – Clean and prime with DEVTRAN® 205, DEVTRAN 220, DEVTRAN 224HS, BAR-RUST® 231, BAR-RUST 233H, BAR-RUST 235, or TRU-GLAZE-WB™ 4030 Epoxy. **Concrete Block** – Fill with DEVTRAN 205, DEVTRAN 220, DEVTRAN 224HS, BAR-RUST 231, BAR-RUST 235, BAR-RUST 233H, TRU-GLAZE-WB 4030 Epoxy, or BLOXFIL® 4000. **Fiberglass** – Solvent wipe, scuff sand and solvent wipe again. Prime with DEVTRAN 224HS. **Concrete Floors, Poured Concrete** – Cure at least 30 days. pH must be 10.0 or lower before painting. Acid etch or abrasive blast slick, glazed concrete or concrete with laitance. Prime with DEVTRAN 205, DEVTRAN 220, DEVTRAN 224HS, BAR-RUST 231, BAR-RUST 233H Epoxy, BAR-RUST 235, or TRU-GLAZE-WB 4030 thinned 25% with recommended thinner or use PRE-PRIME™ 167 or 168LTC

Penetrating Sealer. Galvanized Steel and Aluminum – Remove dirt and oils by solvent cleaning or with DEVPREP® 88 Cleaner followed by a thorough water rinsing. Prime with DEVTRAN 205 or 201 Epoxy Primer.

Previously Painted Surfaces: Remove loose and peeling paint. Scuff sand glossy areas. Old coatings should be tested for lifting and bleeding. If they lift or bleed, remove them. Prime bare areas with a 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 or other colorants.) Add colorants to only the base portion. Mix thoroughly before adding the converter portion.

Thinning: Thinning is not normally required or desired, and excessive thinning can adversely affect application and appearance properties. However, at lower temperatures, small amounts (5% or less) of T-9 Thinner may be added depending on local VOC and air quality regulations. Small amounts (5% or less) of T-17 Thinner may improve roller, brush or spray application on hot substrates. For end uses such as transportation vehicles where the smoothest, orange peel-free appearance is desired, additional thinning may be needed.

Mixing: DEVTHANE® 379UVA Enamel is a two component product supplied in 5 gallon or 1 gallon kits which contain the proper ratio of ingredients. 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. 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 4 hours at 77° (25°C). Higher temperatures will reduce working life of the coating; lower temperatures will increase it.

Application: Apply by airless spray, air spray, roller or brush. For airless spray, any air, electric, or gas operated airless sprayer capable of 3,000 psi (207 bars) and able to support a .011" to .017" tip sizes can be used. Multiple guns and long fluid lines require pumps with adequate capacity. For air spray application, use a Graco #800 gun; a .070" or larger fluid tip. Adjust fluid and air pressure to get a good spray pattern.

Note: Be sure all spray equipment and fluid lines are clean, and free of water or solvents. For brush application, use good quality, dry, clean brushes. For roller application use new, short nap mohair rollers. Do not apply over wet surfaces or under very humid conditions where condensation or fog could settle on the coating during the cure process. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

Spreading Rate: For maximum protection in corrosive areas, apply at 335 sq. ft. per gallon (8.2 m²/L) or 3.0 mils (75 microns) dry-4.8 mils (120 microns) wet. In mild to moderate exposures, apply at 500 sq. ft. per gallon (12.25 m²/L) or 2.0 mils (50 microns) dry-3.2 mils (80 microns) wet. Make allowance for any losses due to overspray or surface irregularities.

Dry Time: At 80°F (27°C) & 50% R.H., dries to recoat in 3 hours and dries hard in 16-24 hours.

Clean-up: Use T-9 Thinner.

Cure Acceleration: DEVTHANE Cure Accelerator 070A0000 may be used to accelerate cure of this urethane at or below 40°F (5°C). 070A0000 is prepackaged (5 fluid ounces in a one-half pint container) for field addition. The addition of one to two ounces per gallon of urethane (one to two containers per five gallons of urethane) will decrease the dry hard time approximately one-third to one-half respectively. The pot life will be reduced one-half to three-fourths.

Ultraviolet Light Absorbers (UVA): DEVTHANE Ultraviolet Light Absorber 080A0000 is already contained in DEVTHANE 379UVA Aliphatic Urethane Enamel. Additional Ultraviolet Light Absorber is not required nor desired.

PRECAUTIONS

DANGER! FLAMMABLE LIQUID AND VAPOR. 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 EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. 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. 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.**

DS174-1100

SHIPPING

Flash point:	80°F (27°C)	
Packaging:	1 gallon kit (3.785L)	5 gallon kit (18.925L)
	0.80 gallon base	4.00 gallon base
	0.20 gallon converter	1.00 gallon converter

Shipping Weight:	1 gallon kit - 12 lbs. (5.4 kg)
	5 gallon kit - 59 lbs. (26.8 kg)

379KXXX (9/03)
Ad Stock #68659F

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ICI Paints
Cleveland,
Ohio, U.S.A.
800-654-2616
www.devoecoatings.com

LIMITATION OF LIABILITY: To the best of our knowledge, the technical data contained herein are true and accurate at the date of issuance but are subject to change without prior notice. We guarantee our product to conform to the specifications contained herein. WE MAKE NO OTHER WARRANTY OR GUARANTEE OF ANY KIND EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. Liability, if any, is limited to replacement of the product or refund of the purchase price. LABOR OR COST OF LABOR AND OTHER CONSEQUENTIAL DAMAGES ARE HEREBY EXCLUDED.

HAZARDS IDENTIFICATION (ANSI Section 3)

Primary route(s) of exposure : Inhalation, skin contact, eye contact, ingestion.

Effects of overexposure :

Inhalation : Irritation of respiratory tract. Prolonged inhalation may lead to. Inhalation of spray mist may cause irritation of respiratory tract. Mucous membrane irritation, fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, coughing, central nervous system depression, intoxication, anesthetic effect or narcosis, difficulty of breathing, allergic response, tremors, liver damage, kidney damage, pulmonary edema, pneumoconiosis, loss of consciousness, death. Possible sensitization to respiratory tract.

Skin contact : Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting, allergic response, severe skin irritation. Possible sensitization to skin.

Eye contact : Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, blurred vision, tearing of eyes, redness of eyes, severe eye irritation, corneal injury.

Ingestion : Ingestion may cause lung inflammation and damage due to aspiration of material into lungs, mouth and throat irritation, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, diarrhea, gastro-intestinal disturbances, abdominal pain, central nervous system depression, anesthetic effect or narcosis, difficulty of breathing, pulmonary edema, convulsions, loss of consciousness.

Medical conditions aggravated by exposure : Eye, skin, respiratory disorders, asthma-like conditions, kidney disorders, liver disorders.

FIRST-AID MEASURES**(ANSI Section 4)**

Inhalation : Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort. Get medical attention if discomfort or irritation persists.

Skin contact : Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use. If irritation occurs, consult a physician.

Eye contact : Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

Ingestion : If swallowed, obtain medical treatment immediately.

FIRE-FIGHTING MEASURES**(ANSI Section 5)**

Fire extinguishing media : Dry chemical or foam water fog. Carbon dioxide. Closed containers may explode when exposed to extreme heat or fire. Vapors may ignite explosively at ambient temperatures. Vapors are heavier than air and may travel long distances to a source of ignition and flash back. Vapors can form explosive mixtures in air at elevated temperatures. Closed containers may burst if exposed to extreme heat or fire. Dust explosion hazard. May decompose under fire conditions emitting irritant and/or toxic gases.

Fire fighting procedures : Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus.

Hazardous decomposition or combustion products : Carbon monoxide, carbon dioxide, oxides of nitrogen, oxides of sulfur, ammonia, toxic gases, barium compounds, acrylic monomers.

ACCIDENTAL RELEASE MEASURES**(ANSI Section 6)**

Steps to be taken in case material is released or spilled : Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Ventilate area with

explosion-proof equipment. Spills may be collected with absorbent materials. Use non-sparking tools. Evacuate all unnecessary personnel. Place collected material in proper container. Spilled material is extremely slippery. Complete personal protective equipment must be used during cleanup. Vacuum with grounded equipment. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

HANDLING AND STORAGE**(ANSI Section 7)**

Handling and storage : Store below 80F. Store below 100F (38c). Keep away from heat, sparks and open flame. Store in original container. Keep away from direct sunlight, heat and all sources of ignition. Keep container tightly closed in a well-ventilated area.

Other precautions : Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure controls/personal protection. Empty containers may contain hazardous residues. Ground equipment when transferring to prevent accumulation of static charge.

EXPOSURE CONTROLS/PERSONAL PROTECTION (ANSI Section 8)

Respiratory protection : Respiratory protection is required for use in isocyanate containing environments. Consider type of application and environmental concentrations when selecting respiratory protection. Observe governmental regulations for respirator use. (29 CFR 1910.134)(OSHA)(Canadian 291.4) The use of positive pressure supplied air respirator is mandatory when the airborne isocyanate concentrations are not known. Note: isocyanate based materials have been determined to cause allergic sensitization in humans. Avoid inhalation and dermal (skin) contact with the uncured material.

Ventilation : Provide dilution ventilation or local exhaust to prevent build-up of vapors. Use explosion-proof equipment. Use non-sparking equipment.

Personal protective equipment : Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing, face shield, apron, boots.

STABILITY AND REACTIVITY**(ANSI Section 10)**

Under normal conditions : Stable see section 5 fire fighting measures

Materials to avoid : Oxidizers, acids, reducing agents, bases, halogens, amines, water, peroxides, nitric acid, alcohols, combustible materials, caustics, Nitrates.

Conditions to avoid : Elevated temperatures, moisture, contact with oxidizing agent, sparks, open flame, ignition sources.

Hazardous polymerization : Will not occur

TOXICOLOGICAL INFORMATION**(ANSI Section 11)**

Supplemental health information : Contains a chemical that may be absorbed through skin. Free diisocyanate may cause allergic reaction in susceptible persons. Notice - 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. Contains iron oxide, repeated or prolonged exposure to iron oxide dust may cause siderosis, a benign pneumoconiosis. Other effects of overexposure may include toxicity to liver, kidney, lungs, central nervous system, blood.

The information contained herein is based on data available at the time of preparation of this data sheet which ICI Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. ICI Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material. Complies with OSHA hazard communication standard 29CFR1910.1200.

Carcinogenicity : The international agency for research on cancer (IARC) has classified carbon black as possibly carcinogenic to humans (group 2b) based on sufficient evidence in animals and inadequate evidence in humans. The international agency for research on cancer (IARC) has evaluated ethylbenzene and classified it as a possible human carcinogen (group 2b) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. In a 2-year inhalation study conducted by the national toxicology program (NTP), ethylbenzene vapor at 750 ppm produced kidney and testicular tumors in rats and lung and liver tumors in mice. Genetic toxicity studies showed no genotoxic effects. The relevance of these results to humans is not known. In a lifetime inhalation study, exposure to 250 mg/m³ titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Reproductive effects : High exposures to xylene in some animal studies, often at maternally toxic levels, have affected embryo/fetal development. The significance of this finding to humans is not known.

Physical Data

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMIS	DOT, proper shipping name
37981000	devthane 379 aliphatic urethane gloss enamel -white high-hiding base	10.55	363.83	42.40	80 f	212-595	330	UN1263, paint, 3, PGIII
37983501	devthane 379 aliphatic urethane gloss enamel -white base	10.59	374.61	42.89	80 f	212-595	230	UN1263, paint, 3, PGIII
37988557	devthane 379 aliphatic urethane gloss enamel -signal yellow base	8.70	402.06	46.22	80 f	212-450	230	UN1263, paint, 3, PGIII
37989000	devthane 379 safety red	8.98	366.58	42.51	80 f	212-595	330	UN1263, paint, 3, PGIII
37989200	devthane 379 aliphatic urethane gloss enamel safety orange base	8.84	351.41	41.06	80 f	212-595	330	UN1263, paint, 3, PGIII
37989400	devthane 379 aliphatic urethane gloss enamel safety yellow base	10.32	370.49	43.50	80 f	212-595	330	UN1263, paint, 3, PGIII
37989501	devthane 379 aliphatic urethane gloss enamel - deep tint base	10.65	366.50	42.94	80 f	212-595	330	UN1263, paint, 3, PGIII
37989502	devthane 379 aliphatic urethane gloss enamel -neutral tint base	10.67	367.54	42.88	80 f	212-595	330	UN1263, paint, 3, PGIII
37989903	devthane 379 aliphatic urethane gloss enamel -black base	10.06	350.28	40.74	80 f	212-595	330	UN1263, paint, 3, PGIII
379C0910	devthane 379 hs converter	9.40	376.17	43.87	80 f	212-595	*330	UN1263, paint, 3, PGIII
			112.85	13.00	135 f	293-293	*321	UN1866, resin solution, combustible liquid, PGIII

Ingredients

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	379B1000	379B3501	379B8557	379B9000	379B9200	379B9400	379B9500	379B9501	379B9502	379B9903	379C0910
benzene, ethyl-	ethylbenzene	100-41-4			1-1.0	1-1.0							
2-heptanone	methyl amyl ketone	110-43-0	10-20	10-20	10-20	10-20		10-20	10-20	10-20	10-20		
quaternary ammonium compounds,	rheological additive	121888-68-4										1-5	
benzyl(hydrogenated tallow alkyl)dimethyl, stearates, salts with bentonite													
ethane, 1,1'-	ethyl orthoformate	122-51-0	1-5	1-5	1-5	1-5		1-5	1-5	1-5	1-5		
methylolacrylate													
acetic acid, butyl ester	butyl acetate	123-86-4	5-10	10-20	10-20	10-20		5-10	5-10	5-10	5-10	5-10	
benzene, dimethyl-	xylene	1330-20-7	1-1.0	1-1.0	1-1.0	1-1.0		1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	
carbon black	carbon black	1353-86-4											
titanium oxide	titanium dioxide	13463-67-7	20-30	20-30	5-10			5-10	10-20	5-10			
2-propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with ethylbenzene, 2-ethylhexyl 2-propenoate and methyl 2-methyl 2-naphthalenecarboxamide, 4-((4-aminocarbonyl) phenyl)azo)-n-(2-ethoxyphenyl)-3-hydroxyhexane, 1,6-diisocyanato-, homopolymer	acrylic polymer	26916-05-2	10-20					10-20	10-20	10-20	10-20	10-20	
monazo red pigment		2786-76-7											
aliphatic polyisocyanate		28182-81-2											90-95

Ingredients (Continued)

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	379B1000	379B3501	379B8557	379B9000	379B9200	379B9400	379B9500	379B9501	379B9502	379B9903	379C0910
tinted amine	light stabilizer	41556-26-7				1-5	1-5						
c.i. pigment yellow 42	yellow iron oxide	51274-00-1				1-5							
butanamide, 2-(2-methoxy-4-nitrophenylazo)-n-(2-methoxyphenyl)-3-oxo-	pigment yellow 74	6358-31-2		1-5			5-10	1-5					
solvent naphtha (petroleum), light aromatic	light aromatic solvent	64742-95-6											1-5
naphtha	naphtha												
butanamide, 2-(4-methoxy-2-nitrophenylazo)-n-(2-methoxyphenyl)-3-oxo-	yellow pigment	6528-34-3		1-5									
silica	amorphous silica	7631-86-9	1-5										
sulfuric acid, barium salt	barium sulfate	7727-43-7				5-10		20-30	10-20	20-30	30-40	20-30	
castor oil	castor oil, raw	8001-79-4	1-5	1-5		1-5	5-10	1-5	1-5	1-5	5-10	1-5	
stoddard solvent	mineral spirits	8052-41-3				1-5							
hexane, 1,6-diisocyanato-	hexamethylene diisocyanate	822-08-0											1-1.0
acetic acid, c6-8-branched alkyl esters	oxo-heptyl acetate	90438-79-2	1-5			1-5	1-5	1-5	1-5	1-5	1-5	1-5	
benzene, 1,2,4-trimethyl-	pseudocumene	95-63-6	1-1.0	1-1.0		1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-1.0	1-5
acrylic resin	substituted pyrrol	Sup. Conf.					1-5						
polyol reactive diluent	acrylic resin	Sup. Conf.	10-20	30-40	40-50	10-20	10-20	10-20	10-20	10-20	10-20	10-20	
orange pigment	polyol reactive diluent	Sup. Conf.											
block copolymer with pigment	orange pigment	Sup. Conf.		5-10									
affined groups	paint additive	Sup. Conf.	1-5										

Chemical Hazard Data

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV			OSHA-PEL			S.R.			H	M	N	I	O
		8-Hour TWA	STEL	C	8-Hour TWA	STEL	C	Std.	S2	S3					
ethylbenzene	100-41-4	100 ppm	125 ppm	not est.	not est.	not est.	100 ppm	not est.	not est.	not est.	n	y	y	n	n
methyl amyl ketone	110-43-0	50 ppm	not est.	not est.	not est.	not est.	100 ppm	not est.	not est.	not est.	n	est.	not est.	n	n
theological additive	121888-68-4	10 mg/m3	not est.	not est.	not est.	not est.	15 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
ethyl orthoformate	122-51-0	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
butyl acetate	123-86-4	150 ppm	200 ppm	not est.	not est.	not est.	150 ppm	not est.	not est.	not est.	n	n	not est.	n	n
xylene	1330-20-7	100 ppm	150 ppm	not est.	not est.	not est.	100 ppm	not est.	not est.	not est.	n	y	y	n	n
carbon black	1333-86-4	3.5 mg/m3	not est.	not est.	not est.	not est.	3.5 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
aliphatic polyisocyanate	13463-67-7	10 mg/m3	not est.	not est.	not est.	not est.	10 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
acrylic polymer	26916-05-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
monazo red pigment	2786-76-7	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
aliphatic polyisocyanate	28182-81-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
light stabilizer	41556-26-7	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
yellow iron oxide	51274-00-1	5 mg/m3	not est.	not est.	not est.	not est.	10 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
pigment yellow 74	6358-31-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
light aromatic solvent naphtha	64742-95-6	not est.	not est.	not est.	not est.	not est.	500x ppm	not est.	not est.	not est.	n	n	not est.	n	n
yellow pigment	6528-34-3	not est.	not est.	not est.	not est.	not est.	6 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
amorphous silica	7631-86-9	10 mg/m3	not est.	not est.	not est.	not est.	5 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
barium sulfate	7727-43-7	10 mg/m3	not est.	not est.	not est.	not est.	5 mg/m3	not est.	not est.	not est.	n	n	not est.	n	n
castor oil, raw	8001-79-4	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
mineral spirits	8052-41-3	100 ppm	not est.	not est.	not est.	not est.	500 ppm	not est.	not est.	not est.	n	n	not est.	n	n
hexamethylene diisocyanate	822-08-0	0.005 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	y	n	n
oxo-heptyl acetate	90438-79-2	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n
pseudocumene	95-63-6	25 ppm	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	n	n
substituted pyrrol	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	not est.	n	n

Footnotes:
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/a=not applicable
 not est.=not established
 CC=CERCLA Chemical
 ppm=parts per million
 mg/m3=milligrams per cubic meter
 Sup Conf=Supplier Confidential
 S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std =Supplier Recommended Standard
 H=Hazardous Air Pollutant, M=Mairne Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, Y=yes, n=no

Chemical Hazard Data (Continued) (ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV			OSHA-PEL			S.R. Std.	S2	S3	CC	H	M	N	I	O
		8-Hour TWA	STEL	C	S	8-Hour TWA	STEL									
polyol reactive diluent	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
orange pigment	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n
paint additive	Sup. Conf.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n

Footnotes:
 C=Ceiling - Concentration that should not be exceeded, even instantaneously.
 S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.
 n/a=not applicable
 not est.=not established
 CC=CERCLA Chemical
 ppm=parts per million
 mg/m³=milligrams per cubic meter
 Sup Conf=Supplier Confidential
 S2=Sara Section 302 EHS
 S3=Sara Section 313 Chemical
 S.R.Std.=Supplier Recommended Standard
 H=Hazardous Air Pollutant, M=Marine Pollutant
 P=Pollutant, S=Severe Pollutant
 Carcinogenicity Listed By:
 N=NTP, I=IARC, O=OSHA, y=yes, n=no