



product  
information

**6G89-WHE22423**

HIGH SOLIDS 1# VOC TUFF-TUB WHITE  
REGLAZING POLYURETHANE

**Cardinal's 6G89-WHE22423** Tuff-Tub white catalyzed with 6GHP is a high-solids aliphatic two-component polyurethane coating. The 6G89-WHE22423 was formulated to meet air quality regulations, while maintaining the application and performance benefits of a conventional polyurethane coating.

**TYPICAL USES:**

- Top coat for decorative and protective uses

**BENEFITS:**

- Low VOC – 120 gms/gal
- Very high gloss
- Excellent chemical and solvent resistance

**CURED FILM PROPERTIES:**

Testing conducted on 6G89-WHE22423 gloss white catalyzed with 6GHP at 1.5 mils DFT (Dry Film Thickness) over 20 gauge Bonderite 1000® test panels, cured 30 minutes at 180°F and air dried 14 days.

TEST	METHOD	PARAMETERS	RESULT
Adhesion	ASTM D3359	Cross-hatch tape	0% failure
Impact:	ASTM D2794	Direct Reverse	130 in. lbs. 60 in. lbs
Flexibility:	ASTM D1737	1/8" mandrel	No cracking
Hardness	ASTM D3363	Pencil	H - 2H
Abrasion	ASTM D4060	CS-17 wheels, 1 kg, 1000 cycles	Less than 100 mg loss
Humidity	ASTM D2247	168 hrs	No effect
Salt Spray	ASTM B117	1000 hrs 95%, 5% salt solution	Less than 3/16" creep - along scribe, otherwise, no effect
UV Light	ASTM G53	1000 hrs	90.3% gloss retention
Solvent Resistance	ASTM D4752	MEK 100 rubs IPA 200 rubs	No effect No effect
Chemical & Stain Resistance	ASTM D1308 30 min. spot	A – 0.1N HCl, 30 wt. motor oil, ammonia, butyl carbitol, butyl cellosolve, Cascade®, Clorox®, Coca Cola®, coffee, diethyl ether, Drano®, Fantastic®, fiber pen ink, floor stripper, gasoline, IPA, Ivory® Liquid, lanolin lotion, lemon juice, Snap®, Spic & Span®, tap water, vegetable oil, water base ink, WD-40®. B – ball point pen ink, carbon disulfide, correction fluid, Freon TF®, MEK, nail polish. C – chloroform. D – solvent base ink.	A: No effect B: Slight dulling C: Moderate effect D: Discolored & softened

**THIS COATING MUST BE USED  
ONLY IN A WELL VENTILATED  
AREA!**

**KEEP THIS COATING AWAY  
FROM ANY AND ALL SOURCES  
OF IGNITION!**

**TYPE:** Aliphatic polyester / acrylic polyurethane.

**COMPONENTS:** Two.

**COLORS:** Tuff-Tub White

**GLOSS:** High

**COVERAGE:** At 1.0 mil DFT, 65% transfer efficiency(TE)

Mixed paint, 1.00 lbs/gal: 525 ft<sup>2</sup>/gal.

Calculation: 1604 ft<sup>2</sup>/gal x % volume solids x TE ÷ DFT

**VOC MIXED:**

120 grams/liter = 1.00 lbs/gal excluding exempt

75 grams/liter = 0.62 lbs/gal including exempt

See mix ratio table below.

**VOLUME SOLIDS:**

6G89-WHE22423 ..... 40%

6GHP ..... 87%

Mixed to 1.00 lbs/gal ..... 50%

**FLASH POINT:** -4°F TCC

**SHELF LIFE:** 1 year from date of manufacture in factory sealed container.

**APPLICATION:** After preparing the surface, thoroughly mix component 1 before adding catalyst. Mix only the amount of material needed. The base to catalyst proportion must be measured accurately, by volume only, to obtain optimum film properties. Do not use reducers that contain water or alcohol; these react with the catalyst and can cause a variety of problems. Be aware of spray-able pot life. Brushing, rolling and dipping are not recommended.

**MIX RATIOS:** Two components must be mixed properly to obtain coating performance.

Parts are by volume	COLORS GLOSS
6G89-WHE22423	4
6GHP catalyst	1
HP-439	0 to 1

**VISCOSITY:** 20"-30" #2 Zahn range.

**SPRAY-able Pot Life:** 2-3 hrs. at 1.00 lbs. VOC/gal

**RECOMMENDED DFT:** 1.5 – 2.5 mils

**CURE:** Air Dry

Tack free 2 hrs.

Dry to handle 24 hrs.

Dry hard 72 hrs.

(At 1.5 mils dry film thickness, 78° F, 50% RH)

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**SURFACE PREPARATION AND PRIMING:** The most important steps in a successful coating process are cleaning, pretreatment and priming. The following is a brief outline of some basics for unpainted substrates. It is not intended to be all-inclusive. For more information on your particular application contact Cardinal.

**Cleaning the substrate:** All surfaces to be coated, must be free of dirt, grease, oil, oxidation, mill scale, and all other contaminants. The surface must be thoroughly dry before painting. Air quality regulations have limited the allowable emissions from cleaning operations.

**PRIMER SELECTION:**

PRODUCT NO.	DESCRIPTION	FUNCTION
6G61-WHE12426	Polyurethane White Primer	Corrosion resistance, some surfacing

**RELATED PRODUCTS:**

PRODUCT NO.	DESCRIPTION
SB-17	Medium exempt reducer
Quick Dry	Accelerator. Speeds up dry time (and shortens pot life).
6SLA100	Surfactant. Helps eliminate blisters, bubbles, pin holes, solvent-pop.

**TROUBLE SHOOTING:**

PROBLEM	CAUSE	REMEDY
Blisters, pin holes or solvent pop	Water contamination. Entrapped air. Entrapped solvent	Eliminate water – Check air lines. Use fresh catalyst. Use urethane grade thinners. Increase atomization, decrease film build.
Craters	Contaminated ambient air, e.g., silicone mist, dust.	Locate and eliminate source of contamination.
Fish-eyes	Substrate contamination.	Clean and prepare substrate.
Not drying	Alcohol in reducer. Wrong catalyst ratio.	Use Cardinal's 1600 series or urethane grade reducers only. Double check mix ratio.
Poor adhesion	Improper surface preparation.	See surface preparation section.
Gloss variation	Variation in application, cure schedule, catalyst ratio, humidity.	Consistent gloss depends upon consistent process.

**APPLICATION EQUIPMENT:** Most air quality regulations require the paint application transfer efficiency to be 65% or better. This generally means using electrostatic or high volume low pressure (HVLP) spray guns. Otherwise, conventional pressure feed, airless or air assisted airless spray equipment can be used. Air supply lines need water and oil traps.

**EQUIPMENT CLEAN-UP:** Clean up should be done as soon as possible keeping in mind the pot life of the mixed paint. Avoid leaving catalyzed paint in the lines. Air quality regulations have limited the allowable emissions from cleaning operations.

**PRODUCT LIMITATIONS:**

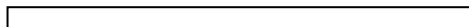
- Catalyst reacts with water. Air supply should be dry. Containers should be kept tightly closed. Use urethane grade thinners only.
- Alcohols and glycols interfere with curing chemistry and should be avoided. They can be found in some lacquer thinners and certain synthetic reducers.
- Optimum film properties are dependent upon proper mixing of paint and catalyst.

**SAFETY: DANGER: FLAMMABLE LIQUID AND VAPOR**

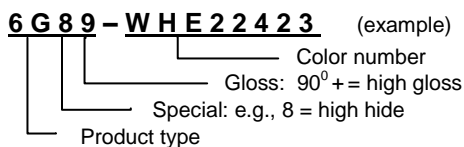
Refer to the product's Safety Data Sheet (SDS) for complete safety information. Contains organic solvents. Use with adequate ventilation. Do not breathe vapors or spray mists. If component TLVs are exceeded, a NIOSH approved air supplied respirator is advised. See SDS for TLV information. Contents are FLAMMABLE. Keep from heat, sparks or open flame. Allergic reactions are possible. Avoid use by persons with respiratory problems. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**FIRST AID:**

Eye contact: flush immediately with plenty of water for at least 15 min. and get medical attention.  
Skin contact: wash thoroughly with soap and water for 5 minutes. If swallowed, do not induce vomiting and get medical attention immediately.



**PRODUCT IDENTIFICATION**



K16TL