



product
information

6232-BKE21397
POLYURETHANE
BLACK HAMMER

Cardinal's 6232-BKE21397 Black hammer is catalyzed with 340SG is a aliphatic-aromatic two-component polyurethane coating. This coating is suited for interior applications. 6232-BKE21397 is formulated to meet strict air quality regulations, while maintaining the application and performance benefits of a conventional polyurethane coating.

TYPICAL USES:

- Heavy equipment
- Top coat for decorative and protective use on metal
- Electronic enclosures
- Medical equipment

BENEFITS:

- Excellent chemical and solvent resistance
- RoHS / WEEE Compliant

CURED FILM PROPERTIES:

Testing conducted on 6232-BKE21397 black hammer catalyzed with 34SG at 2.0 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
Hardness	ASTM D3363	Pencil	H - 2H
Adhesion	ASTM D3359	Cross-hatch tape	0% failure
Impact	ASTM D2794	Direct Reverse	50 Direct, 20 Reverse
Humidity	ASTM D2247	500 hrs	No effect
Solvent Resistance	ASTM D4752	MEK 100 rubs	No effect
		IPA 200 rubs	No effect
Chemical & Stain Resistance	ASTM D1308 30 min. spot	A – IPA, hydrogen peroxide, cavicide, 409®, toluene, hydrochloric acid, textile spirits, amyl acetate, trichloroethylene, methanol, ethylene dichloride, lacquer thinner, xylene, ethanol, ammonia, tap water, Lanolin lotion, coffee, tea. B – Acetone, MEK. C – 50% sulfuric acid, 2.5N sodium hydroxide	A: No effect B: Slight dulling C: Moderate effect D: Discolored & softened

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.

Steel — A phosphate chemical conversion coating is highly recommended.

Aluminum — A chemical conversion coating is highly recommended. When this is not possible, a vinyl acid wash pretreatment primer is recommended such as Cardinal's 4860 series primers.

**FOR INDUSTRIAL USE ONLY
NOT FOR RESIDENTIAL USE**

TYPE: Polyurethane.

COMPONENTS: Two.

COLOR: Black Hammer.

GLOSS: Semi gloss

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

Mixed paint, 1.0 lbs/gal: 585 ft²/gal.

Calculation: 1604 ft²/gal x % volume solids x TE ÷ DFT

VOC MIXED: 187 grams/liter = 1.56 lbs/gal minimum.

106 grams/liter = 0.88 lbs/gal minimum.

See mix ratio table below.

VOLUME SOLIDS:

6232-BKE21397 31%

340SG..... 90%

Mixed to 0.88 lbs/gal 45%

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. Mix paint and catalyst thoroughly before adding HP-439 or Acetone for sprayability. 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	BLACK HAMMER
6232-BKE21397	3
340SG catalyst	1

VISCOSITY: Will vary depending on color and gloss at a given VOC. At 1.0 lbs/gal, most colors will be in the 25"-35" #2 Zahn range.

SPRAY-able Pot Life: 2-3 hrs. at 1.0 lbs. VOC/gal

RECOMMENDED DFT: 1.5 – 2.5 mils (depending on color)

CURE:	<u>Air Dry</u>	<u>Force Dry *</u>
Tack free	2 hrs.	1 hr at 120° F
Dry to handle	24 hrs.	30 min at 140° F
Dry hard	72 hrs.	15 min at 180° F
(At 1.5 mils dry film thickness, 78° F, 50% RH)		

* Some Air quality regulations require a maximum temp. of 194° F to qualify as an "air dry" system which generally have higher VOC limits than baking systems.

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Galvanized — Cardinal's W-303-A surface preparation solution helps improve adhesion followed by a vinyl acid wash pretreatment primer such as Cardinal's 4860 series primers.

Stainless Steel — Brush-off or blast clean per SSPC-SP 7 to a uniform profile of 1.5 mils. Cardinal's W-303-A surface preparation solution can help improve adhesion followed by a vinyl acid wash pretreatment primer such as Cardinal's 4860 series primers.

Plastic — All mold release should be completely removed. 6200 series polyurethane is compatible with a variety of plastics, however, since there are numerous different formulations of plastic, a trial sample should be painted and checked before running production. If 6200 attacks or weakens the plastic, a barrier coat of 3777-1 clear waterborne acrylic enamel may help.

PRIMER SELECTION:

PRODUCT NO.	DESCRIPTION	FUNCTION
3P60-	Polyurethane Gray	some surfacing
6W60-	W/B Primer Gray	some surfacing

TROUBLE SHOOTING:

PROBLEM	CAUSE	REMEDY
Blisters, pin holes or solvent pop	In air line: 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.	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 acetone and oil traps.

EQUIPMENT CLEAN-UP: Acetone 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: Refer to the product's Material Safety Data Sheet (MSDS) 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 MSDS for TLV information.

Contents are FLAMMABLE. Keep from heat, sparks or open flame.

Allergic reactions are possible. Avoid use by persons with respiratory problems.

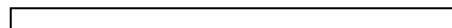
Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

FIRST AID:

Eye contact: flush immediately with plenty of water for at least 15 min. and get medical attention.

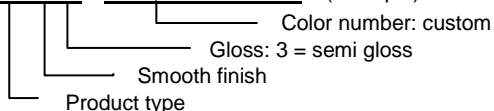
Skin contact: wash thoroughly with soap and water for 5 minutes.

If swallowed, do not induce vomiting and get medical attention immediately.



PRODUCT IDENTIFICATION

6 2 3 2 - B K E 2 1 3 9 7 (example)



G12TL

IMPORTANT: Warranty and Disclaimer — The performance characteristics of these products vary according to product application, operating conditions, materials applied to or with and use. Since these factors can affect results, we strongly recommend that you make your own test to determine to your satisfaction whether the product is of acceptable quality, has not been affected by storage or transport and is suitable for your particular purpose under your own operation conditions prior to using any product in full scale production. Seller warrants the products to be free from defects in materials and workmanship. SUCH WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. No representative of ours has authority to waive or change this provision, which applies to all sales of these products.