



product
information

4000 SERIES WATER REDUCIBLE ALKYD ENAMEL

Cardinal's 4000 series is a water reducible alkyd enamel. This product has an excellent balance of fast dry, tough film properties and economical and can be applied to properly prepared metal substrates. This material is formulated to meet strict air quality regulations.

TYPICAL USES:

- Top coat for decorative and protective use on metal
- Transportation equipment
- Farm Equipment
- General metal finishing
- Refurbishing

BENEFITS:

- Free of Hazardous Air Pollutants (HAPS)
- Low VOC content
- Hard abrasion resistant film
- Water clean up
- Ready to spray
- RoHS / WEEE Compliant

CURED FILM PROPERTIES:

Testing conducted on 4008-10 gloss white at 1.5 mils DFT (Dry Film Thickness) over 20 gauge Bonderite 1000® test panels, force dried 30 minutes at 180°F, then air dried for 14 days.

TEST	METHOD	PARAMETERS	RESULT
Impact:	ASTM D2794	Direct Reverse	80 in. lbs. 40 in. lbs.
Flexibility:	ASTM D1737	1/8" mandrel	No cracking
Hardness	ASTM D3363	Pencil	F - H
Solvent Resistance	ASTM D4752	MEK 25 rubs	No effect
		IPA 50 rubs	No effect

REPAIR OR REFINISHING: Clean surface to be repainted, remove dirt, grease, oil, and all other contaminants. Abrade surface if necessary. Tack surface clean. For exterior applications – prime any bare metal with 4060-31 primer.

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. When this is not possible, a vinyl acid wash pretreatment primer is recommended such as Cardinal's 4860 series primers.

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.

Galvanized — Remove all white rust, Cardinal's W-303-A surface preparation solution improves adhesion.

TYPE: Alkyd.

COMPONENTS: One.

COLORS: Full range including metallics.

GLOSS: High, semi and flat.

COVERAGE: At 1.0 mil DFT.

440 ft²/gal. at 100% transfer efficiency (TE)

300 ft²/gal. at 65% TE

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

VOC: (as supplied)

GLOSS:

340 grams/liter = 2.8 lbs/gal less water

144 grams/liter = 1.2 lbs/gal including water

SEMI GLOSS:

225 grams/liter = 2.3 lbs/gal less water

115 grams/liter = 0.95 lbs/gal including water

VOLUME SOLIDS: 28 – 31%

FLASH POINT: 120°F TCC

SHELF LIFE: 6 months from date of manufacture in factory sealed container.

APPLICATION: Thoroughly stir or agitate paint before applying. This material is designed for spray application. Brushing, rolling and dipping are not recommended. See surface preparation and priming section for further instructions.

Thinning: Ready for spray. If thinning is necessary, use water, 1% - 5%. Avoid over thinning.

VISCOSITY: 30 – 40" seconds, #3 Zahn cup at 78°F. Will vary depending on color.

RECOMMENDED DFT: 2.0 – 3.0 mils (depending on color)

Cure: Air Dry

Dust free 30-45 min.

Tack free 1-1/2 hrs.

Dry hard 48-72 hrs.

Full cure 7-10 days

Force Dry

Dry hard 1-1/2 hrs. at 140° F

30 min. at 180° F

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

FOR INDUSTRIAL USE ONLY
NOT FOR RESIDENTIAL USE

(Continued on page 2)

So. El Monte, CA 1329 Potrero Ave. 91733 (323) 283-9335 (626) 444-9274 Fax (626) 444-0382

www.cardinalpaint.com

NO WARRANTY EXPRESSED OR IMPLIED, ACCEPTABILITY TO BE DETERMINED BY USER, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

Primer Selection:

PRODUCT NO.	DESCRIPTION	FUNCTION
4063-	W/B Anti-Corrosion Alkyd	Corrosion inhibiting and adhesion.
6460-	Two Part Polyurethane	Tough surfacer.
7063-	Two Part Epoxy	Tough surfacer and high build.
7760-	2.3# VOC Epoxy	Corrosion resistance
4860-	Vinyl Wash Primer	Adhesion

Related Products:

PRODUCT NO.	DESCRIPTION
SB-16	Slow solvent
SB-27	Slow solvent, coalescing agent
Ammonia	Raises pH of paint.
T-2000-5	Flow Additive
T-2000-6	Surfactant Additive

Trouble Shooting:

PROBLEM	CAUSE	REMEDY
Too thin / low viscosity	Over reduced. pH too low (evaporation from open container).	Contact Cardinal representative
Dry spray	High atmospheric temperature. Over atomization Gun to part distance	Increase fluid pressure & decrease atomizing pressure. Reduce with water: 1% - 2%. Add SB-16 at rate of 1 oz./gal.
Flash rusting	Cold and/or humid weather. Cold substrate. Over reduced.	Warm paint and parts to 70° - 80°F. SB-27 at 1 oz./gal may help.
Mudcracking	Over reduced Film build too high.	SB-16 at 1 oz./gal may help. Lower film build.
Craters	Contamination of substrate, application equipment or environment.	Find and eliminate source of contamination. When craters persist, add ½ oz./gal of each T-2000-5 and T-2000-6 additives.
Poor adhesion	Improper surface preparation. Film too thin to coalesce properly.	See surface preparation section. Increase film build. A minimum of 1 mil dry film thickness is required.

APPLICATION EQUIPMENT: Electrostatic, high volume low pressure (HVLP), airless, air assisted or conventional spray guns may be used. CAUTION: Electrostatic equipment needs to be properly isolated for waterborne use.

Fluid and air hoses should be a minimum of 3/8" for fluid and 5/16" for air.

EQUIPMENT CLEAN-UP: Warm water. Water should always be used for primary cleaning. If something stronger is needed exempt solvents can be used for secondary cleaning, air quality regulations, in your area may have limited the allowable emissions from cleaning operations.

Product Limitations:

- AVOID FREEZING — Product contains water.
- Storage stability is limited to 6 months.

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.

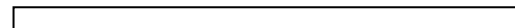
Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

FIRST AID:

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

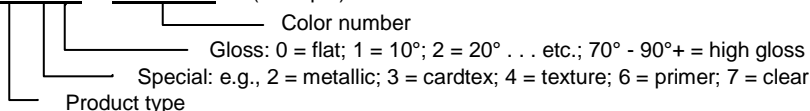
Skin contact: wash thoroughly with soap and water for 5 minutes.

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



PRODUCT IDENTIFICATION

4 0 0 8 - 1 5 1 0 2 (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.