



General Industrial Coatings

CC-B45

Permaclad® 4000 Enamel

High Gloss Black	G78BC61	High Gloss White.....	G78WC216	Yellow Buff.....	G78YC32
Low Gloss Black	G78BC60	Low Gloss White.....	G78WC215	Light Yellow	G78YC33
High Gloss Clear.....	G78CC11	Red Oxide (Y/S)	G78RC28	Yellow Oxide.....	G78YC35
Low Gloss Clear	G78TC3	Red Oxide (B/S)	G78RC29	Catalyst.....	V66VC146
				Custom Blend Series	G78DX

DESCRIPTION

Permaclad® 4000 is a 2.8 VOC compliant, single component, thermoset baking enamel. It offers outstanding exterior durability and performance properties for the aluminum market. It is an excellent product for architectural aluminum products such as extrusions, windows, doors, railings, solariums, store and building facades, and other building components. This is also recommended for exterior applications on iron or zinc phosphated steel.

Advantages:

- Complies with 2.8 VOC solvent emissions.
- Excellent exterior color and gloss retention
- Excellent physical and chemical resistance properties.
- Excellent adhesion to treated aluminum – no primer required.
- Can be applied over approved non-chrome pretreatment.
- Excellent recoatability.
- Application by conventional and HVLP spray, electrostatic guns, bells and disc.
- Free of lead and chromate hazards.

* VOC Compliance limits vary from state to state; please consult local Air Quality rules and regulations.

An Environmental Data Sheet is available from your local Sherwin-Williams facility or at www.PaintDocs.Com.

CHARACTERISTICS

60° Gloss:	15-85+
Volume Solids: Varies by color	47 ± 2 %
Weight Solids: Varies by color	58 ± 2 %
Viscosity (at 77° F):	15-20 secs., #3 Zahn Cup
Recommended Film Thickness:	
Mils Wet	2.6-3.0
Mils Dry	1.2-1.4
Cure:	
Flash:	5 mins. at room temperature
Bake:	10 mins. at 350° F, metal temperature or equivalent
	Depending on the cure time and temperature, V66VC146 catalyst can be add from 1-3% by weight to improve cure speed.
Flash Point (Pensky Martens Closed Cup):	42° F
Air Quality Data:	
Photochemically Reactive	
Volatile Organic Compounds (VOC) (admixed, maximum)	2.8 lb/gal, 336 g/L
Recommended Storage:	Inside, sealed container, 40-120° F, no freeze hazard. Protect from moisture.
Package Life:	2 years, unopened, inside storage

SPECIFICATIONS

General: All substrates should be free of mold release, oil, grease, dirt, fingerprints, drawing compounds, surface passivation treatments and any other contaminants to ensure optimum adhesion and coating performance. Consult Metal Preparation brochure CC-T1 for additional details.

Aluminum: A minimum of a 5 stage chrome phosphate metal treatment, or equivalent, is required for good adhesion and optimum coating performance properties.

Steel: Remove rust, mill scale, and oxidation products. A minimum of a 3 stage iron or zinc phosphate metal treatment, or equivalent, is required for good adhesion and optimum coating performance properties.

Testing: The information, data, and recommendations set forth in this Product Data Sheet are based upon test results believed to be reliable. However, due to the wide variety of substrates, substrate properties, surface preparation methods, equipment and tools, application methods, and environments, the customer should test the complete system for adhesion, compatibility and performance prior to full scale application.

Application

Typical Setups

Reduction: Reduce with R6K9 (acetone) or R2KS1 (parachlorobenzotrifluoride, Oxsol® 100) as needed. **Caution: acetone is extremely flammable.**

May be applied by: Conventional
Electrostatic bells, guns & discs
HVLP

Surface Preparation:

Aluminum: Surface must be clean and free of dirt, grease, oil, fingerprints and oxidation. A minimum of a 5-stage amorphous chromium phosphate type or approved non-chrome type pretreatment is required. See AAMA 2604 spec.

Spray Viscosity:

Air Spray 15-20 secs., #3 Zahn Cup
Bells & Discs 15-20 secs., #3 Zahn Cup

Cleanup: Clean tools/equipment immediately after use with ketone or aromatic solvents.

Follow manufacturer's safety recommendations when using any solvent.

ADDITIONAL INFORMATION

To increase paint viscosity, thixotropy and orange peel on application, add up to 5% Sag Control Additive V80VC43 and reduce the percent reduction by a comparable percent to maintain 3.0 VOC at application.

PRODUCT LIMITATIONS

1. **Settling may occur during storage. Shake or mix well before using.**
2. Substrate cleaning and pretreatment is critical to obtaining expected performance.
3. Proper cure - reaching required peak metal temperature (PMT) is critical to proper cure. Use temperature tapes or pyrometer and check cure.
4. Do not add any other materials to Permaclad 4000 products because they may affect performance properties.
5. Do not apply to anodized or "hard coat" aluminum because of adhesion concerns.
6. Applicators must be pre-qualified by a Sherwin-Williams Technical Service Rep, Engineer or Technical person to confirm proper metal treatment, application and cure to assure the long term performance of Permaclad 4000.
7. Compatible with Phoenix, Opticolor Express and GIS colorants. Do not add more than 10% (vol.) of colorant per gallon of base.

Performance Tests

The following performance results are achieved over aluminum with chrome phosphate treatment.

DFT:	1.2-1.4 mils
60 Gloss	15-85+
Pencil Hardness:	F-2H
100 MEK Rubs:	Pass
Mar Resistance:	No Permanent Mar

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CAUTIONS

FOR INDUSTRIAL SHOP APPLICATION ONLY

Thoroughly review the product label and Safety Data Sheet (SDS) for safety information and cautions prior to using this product.

To obtain the most current version of the Environmental Data Sheet (EDS), Product Data Sheet (PDS), or Safety Data Sheet (SDS) please visit your local Sherwin-Williams facility or www.PaintDocs.Com.

Please direct any questions or comments to your local Sherwin-Williams facility.

Note:

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