

# POLYCOR<sup>®</sup>

## 968HG Series High Gloss Enamel Gel Coats

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### Description

POLYCOR<sup>®</sup> 968HG series enamel gel coats are formulated to be used as *topcoats* on fiberglass laminates such as boat and camper shell interiors. Enamels are very similar to gel coats except that they cure tack-free. Enamels are used like paint in that a topcoat is used to seal and hide a substrate. Normally enamels are used as interior finishes or to cover a laminate, yielding a colored surface. Enamels in the 968HG series produce a hard, tough, durable, finish with good water resistance characteristics when applied correctly. Standard enamels should **not be used for water immersion service** due to potential water spotting and water blistering. Contact a CCP sales representative for a recommendation if water immersion is required.

The 968HG series meet the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for both Marine Manufacturing and Reinforced Composites Production.

### Features and Benefits

- Reduced monomer losses into the air (lower HAP content)
- Cured film thickness can be 5 to 7% more than other enamels providing a higher yield value
- Less odor versus non-MACT compliant enamels
- Smoother sprayed film (less orange peel)
- High gloss finish

Enamels in the 968HG series were primarily developed for *marine* applications; however, they can be used in any FRP application where high performance characteristics are desired. The 968HG series enamels provide durable, reduced maintenance products.

Enamels require only the addition of the proper amount of the appropriate methyl ethyl ketone peroxide to cure.

The 968HG enamels are currently available in white (high gloss white base 968WK858HG) and off-white.

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**Typical Properties (77°F, 25°C)**

These values may or may not be manufacturing control criteria; they are listed as a reference guide only. Particular batches may not conform exactly to the numbers listed because storage conditions, temperature changes, age, testing equipment (type and procedure) can each have a significant effect on test results. Enamels with properties outside of these ranges can perform acceptably.

Test	POLYCOR <sup>®</sup> 968HG Series
Viscosity <sup>(1)</sup>	16,000 cps
Thixotropic Index (2/20)	5.5
Flash Point	88°F
Hazardous Air Pollutants	See MSDS
Volatile Organic Compounds	22%
Weight per Gallon	12.6 lbs
Gel Time <sup>(2)</sup>	13 min.
Tack Free	45-60 min.

<sup>(1)</sup> Brookfield RVF #4 Spindle @ 4 rpm.

<sup>(2)</sup> 1.8% DDM-9.

Refer to the MSDS for handling precautions. A MSDS will automatically be supplied with the first order of material. The MSDS is also available by product code on the CCP website at [CCP Composites website](#).

**Application**

Enamels should NOT be applied when the temperature is below 70°F, or an inadequate cure may result.

Enamels should be sprayed after the laminate has cured and while the surface is still tacky. Glossy laminates may cause the enamel to separate, sag, and have poor adhesion. Be sure that glossy areas are well sanded followed by removing (blowing) all sanding debris out of the area, and cleaning with solvent.

Laminates containing a “wax surface” or “mold release” should be sanded before coating with enamel. Sand the surface with rough sandpaper to remove all indications of wax or mold release, and then wash the part with solvent.

## 968HG Series- Copyright 2012

If a *fleck coat* or *cob-webbing* of enamel is desired over the base coat of enamel, it should be applied while the base coat is wet.

The recommended application for enamels is spraying, but they can also be rolled. Brushing is not recommended due to poor flow and leveling. Refer to CCP's Composites Application Guide ("Cookbook") for equipment and application recommendations. Equipment, settings, and techniques for spraying gel coats are the same for enamels.

CCP recommends a delivery rate of no more than 2.5 pounds per minute with conventional air atomized equipment, and no more than 4 pounds per minute with airless equipment.

For optimum results, a uniform catalyst mix must be achieved. Even with the equipment properly calibrated, potential problems can occur due to: poorly atomized catalyst, surging problems (enamel or catalyst), poor tip alignment (catalyst to enamel mix), contamination, and poor application procedures, which will quickly negate all benefits of calibration. The equipment and application procedures must be monitored on a routine basis to ensure proper application and cure of the enamel. Ask about and adhere to all equipment manufacturers' recommendations.

Avoid over-spray settling on other surfaces by beginning the spray pattern closest to the vapor/air exhaust and progressing to the opposite end. Maintain recommended spray distances.

For best overall performance properties, a wet film thickness of  $18 \pm 2$  mils is ideal. Films less than 12 mils may not cure properly, may be hard to patch, and are more susceptible to water blisters. Films above 24 mils may trap porosity, crack and are more subject to weathering discoloration.

One gallon of enamel will cover approximately 60 to 80 square feet, depending on the film thickness of the coating.

## Cure

It is recommended that the gel time is checked in the customer's plant because age, temperature, humidity and catalyst will produce varied gel times. All data referencing gel or cure refers specifically to ATOFINA Luperox<sup>®</sup> DDM-9 catalyst. Norac NOROX MEKP-9 and NOROX MEKP-9H, Akzo Nobel CADOX L-50a and CADOX D-50 are expected to yield similar performance. ATOFINA Luperox<sup>®</sup> DHD-9, NOROX MEKP-925, NOROX MEKP-925H, and Crompton HP-90 may yield slightly shorter gel and cure times.

The catalyst level should not exceed 3.0% or fall below 1.2% for proper cure. The recommended range is 1.2% to 3.0% with 1.8% @ 77°F being ideal. Cure characteristics are dependent on material temperature, room temperature, humidity, air movement, and catalyst concentration.

## 968HG Series- Copyright 2012

Special fast-cure versions are available but must be requested. These products offer shorter tack-free times. Fast cure products have shorter stability and should not be inventoried over 45 days.

Enamels (whether standard or fast cure) should not be used when temperature conditions are below 70°F, as curing may be adversely affected.

### Caution

Enamels in the 968HG series are not compatible in the liquid state with gel coats or resins. Spray and pumping equipment must be completely free (cleaned) of gel coats or resins before enamels can be used.

Do not over-mix enamels. Over-mixing breaks down viscosity, increasing the tendency to sag and causing styrene loss which may contribute to porosity issues. Enamels should be mixed once a day for 10 minutes. The enamel should be mixing to the sides and bottom of the container with the least amount of turbulence possible. Air bubbling should not be used for mixing. It is not effective, and only serves as a potential for water or oil contamination.

Do not add any material, other than the recommended methyl ethyl ketone peroxide, to the products without the advice of a CCP representative.

### Storage

Un-catalyzed, POLYCOR® 968HG enamels have a usage life of 90 days from date of shipment, when stored at 73°F or below in a closed, factory-sealed, opaque container, and out of direct sunlight. Fast-cure enamels (gel times less than 9 minutes) are stable for 45 days. The usage life is cut in half for every 20° over 73°F. Totes of product can have a shorter shelf life--66% of that for drums.

### MSDS / Data Sheets

CCP Composites data sheets and MSDSs are available in printable format at [www.ccpcompositesus.com](http://www.ccpcompositesus.com).

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**COMPOSITES SAFETY INFORMATION  
(October 2011)**

All sales of products manufactured by CCP Composites US (CCP), and described herein, are made solely on condition that CCP's customers comply with applicable health and safety laws, regulations and orders relating to the handling of our products in the workplace. Before using, read the following information, and both the product label, and Material Safety Data Sheet pertaining to each product.

Most products contain styrene. Styrene can cause eye, skin and respiratory tract irritation. Avoid contact with eyes, skin and clothing. Impermeable gloves, safety eyewear and protective clothing should be worn during use to avoid skin and eye contact. Wash thoroughly after use.

Styrene is a solvent and may be harmful if inhaled. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Extended exposure to styrene at concentrations above the recommended exposure limits may cause central nervous system depression causing dizziness, headaches or nausea and, if overexposure is continued indefinitely, loss of consciousness, liver and kidney damage.

Do not ingest or breathe vapor, spray mists or dusts caused by applying, sanding, grinding and sawing products. Wear an appropriate NIOSH/MSHA approved and properly fitted respirator during application and use of these products until vapors, mists and dusts are exhausted, unless air monitoring demonstrates vapors, mists and dusts are below applicable exposure limits. Follow respirator manufacturer's directions for respirator use.

The International Agency for Research on Cancer (IARC) reclassified styrene as Group 2B, "possibly carcinogenic to humans." This revised classification was not based on new health data relating to either humans or animals, but on a change in the IARC classification system. The Styrene Information and Research Center does not agree with the reclassification and published the following statement: Recently published studies tracing 50,000 workers exposed to high occupational levels of styrene over a period of 45 years showed no association between styrene and cancer, no increase in cancer among styrene workers (as opposed to the average among all workers), and no increase in mortality related to styrene.

Styrene is classified by OSHA and the Department of Transportation as a flammable liquid. Flammable products should be kept away from heat, sparks, and flame. Lighting and other electrical systems in the work place should be vapor-proof and protected from breakage.

Vapors from styrene may cause flash fire. Styrene vapors are heavier than air and may concentrate in the lower levels of molds and the work area. General clean air dilution or local exhaust ventilation should be provided in volume and pattern to keep vapors well below the lower explosion limit and all air contaminants (vapor, mists and dusts) below the current permissible exposure limits in the mixing, application, curing and repair areas.

Some products may contain additional hazardous ingredients. To determine the hazardous ingredients present, their applicable exposure limits and other safety information, read the Material Safety Data Sheet for each product (identified by product number) before using. If unavailable, these can be obtained, free of charge, from your CCP representative or from: CCP Composites US, P.O. Box 419389, Kansas City, MO 64141-6389; 816-391-6053.

**FIRST AID:** In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention; for skin, wash thoroughly with soap and water. If affected by inhalation of vapors or spray mist, remove to fresh air. If swallowed, get medical attention.

Those products have at least two components that must be mixed before use. Any mixture of components will have hazards of all components. Before opening the packages read all warning labels. Observe all precautions.

Keep containers closed when not in use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Emptied containers may retain hazardous residue. Do not cut, puncture or weld on or near these containers. Follow container label warnings until containers are thoroughly cleaned or destroyed.

**FOR INDUSTRIAL USE AND PROFESSIONAL APPLICATION ONLY. KEEP OUT OF REACH OF CHILDREN.**

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**CCP COMPOSITES US  
WARRANTIES, DISCLAIMERS AND LIMITATION OF LIABILITY (Rev. 10/11)**

Seller warrants that: (i) Buyer shall obtain good title to the product sold hereunder, (ii) at Shipment such product shall conform to Seller's specifications; and (iii) the sale or use of such product will not infringe the claims of any U.S. patent covering the product itself, but Seller does not warrant against infringement which might arise by the use of said product in any combination with other products or arising in the operation of any process. **SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO SELLER. ANY APPLICATION INFORMATION OR ASSISTANCE WHICH SELLER MAY FURNISH TO BUYER IS GRATUITOUS AND SHALL IN NO WAY BE DEEMED PART OF THE SALE OF PRODUCT HEREUNDER OR A WARRANTY OF THE RESULTS OBTAINED THROUGH THE USE OF SUCH PRODUCT.**

Without limiting the generality of the foregoing, if any product fails to meet warranties mentioned above, Seller shall at Seller's option either replace the nonconforming product at no cost to Buyer or refund the Buyer the purchase price thereof. The foregoing is Buyer's sole and exclusive remedy for failure of Seller to deliver or supply product that meets the foregoing warranties. Seller's liability with respect to this contract and the product purchased under it shall not exceed the purchase price of the portion of such product as to which such liability arises. Seller shall not be liable for any injury, loss or damage, resulting from the handling or use of the product shipped hereunder whether in the manufacturing process or otherwise. In no event shall Seller be liable for special, incidental or consequential damages, including without limitations loss of profits, capital or business opportunity, downtime costs, or claims of customers or employees of Buyer. Failure to give Seller notice of any claim within thirty (30) days of shipment of the product concerned shall constitute a waiver of such claim by Buyer. Any product credit received by Buyer hereunder, if not used, shall automatically expire one (1) year from the date the credit was granted. Notwithstanding any applicable statute of limitations to the contrary, any action by Buyer relation to a claim hereunder must be instituted no later than two (2) years after the occurrence of the event upon which the claim is based. All the foregoing limitations shall apply irrespective of whether Buyer's claim is based upon breach of contract, breach of warranty, negligence, strict liability, or any other legal theory.