

POLYCOR®

944 Series Isophthalic Gel Coats

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Description

POLYCOR® 944 isophthalic gel coats are high quality coatings developed for the fiberglass industry. These gel coats provide quality finishes, which deliver good chemical/water resistance, gloss retention, weatherability, and resiliency.

These gel coats are formulated to meet the rigid requirements of transportation, boating, and sanitary applications. They have enabled customers to meet and surpass all requirements of the American National Standard for plastic bath tubs, shower receptors and shower stalls, ANSI Z124.1, .2 -1995, Sec. 6.1.1.

944 gel coats are ready to use, easy to spray, sag resistant, fast curing and require only the addition of the proper amount of an appropriate methyl ethyl ketone peroxide to cure.

POLYCOR® 944 isophthalic gel coats are available in a wide range of eye-appealing colors. Customer color matching is available on request. See CCP Composites 944-W-005 data sheet for standard white isophthalic gel coat.

Typical Liquid Properties (77°F)

These values may or may not be manufacturing control criteria; they are listed for 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 the test results. Gel coats with properties outside of these ranges can perform acceptably.



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Test	944 Series
Viscosity, Brookfield RVF #4 Spindle @ 4rpm	
<ul style="list-style-type: none"> • White and Off-Whites 	16,000-20,000 cps
<ul style="list-style-type: none"> • Colors 	11,000 - 16,000 cps
Thixotropic Index(2/20)	5.5 - 7.5
Flash Point	82 - 88°F
Hazardous Air Pollutants	(See MSDS for Amounts)
Volatile Organic Compounds	35 - 42%
Weight per Gallon	9.0 - 11.0 depending on color
Gel Time at 1.8% MEKP	10 - 17 minutes
Lay-up Time	45 - 60 minutes
Sag Resistance	Good at 20 mils
Hide (Most Formulations)	Complete at 10 mils

Reds, yellows and dark blues may have low hiding power. Ask a CCP Composites representative whether the red, yellow or blue selected requires a special application procedure (which would be increased film thickness in multiple applications).

Refer to the MSDS for handling precautions. MSDS's will be supplied automatically with the first order for material, and are available by product code upon request from CCP Composites Regulatory Department, or on CCP Composites website at www.ccpcompositesus.com.

Application

CCP Composites 944 gel coats are generally formulated for both airless and conventional spray applications. Neither brushing nor rolling is recommended. Refer to PB-16 (Application Guide) and PB-3 (Equipment Selection) Bulletins for additional specific recommendations.

CCP Composites recommends a gel coat 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.

Batch mixing is recommended to achieve the best catalyst mix and cure because even with the equipment properly calibrated, potential problems can occur due to: poorly atomized catalyst; surging problems (gel coat or catalyst); poor tip alignment (catalyst to gel coat 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 gel coat. Ask about and adhere to all equipment manufacturers' recommendations.

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

For best overall performance properties, a wet film thickness of 18±2 mils is recommended as ideal. Films less than 12 mils may not cure properly, may be hard to patch, have more print-through, and are more susceptible to water blisters. Films above 24 mils may pre-release, trap porosity, or crack, and are more subject to weathering discoloration. If water blisters are of a great concern (boat hulls), 20 to 24 mils would perform better than a thinner film, but resistance to sag, porosity and cracking could suffer. If weathering (yellowing from sunlight, decks) is of great concern, then thinner films (12 to 16 mils) would perform better, but patchability and resistance to print-through and blistering could suffer.

Proper mold maintenance is important. Although CCP Composites 944's have excellent patching properties, minimal repair work is always desirable. Sanding and compounding can hasten the chalking and loss of gloss of all gel coats.

Cure

It is recommended that gel time be 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® 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® DHD-9, NOROX MEKP-925 and 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. Recommended range is 1.2% to 3.0% with 1.8% at 77°F being ideal. Normally, the gel coat film is ready for lamination in 45 to 60 minutes. This time element is dependent on material temperature, room temperature, humidity, air movement, and catalyst concentration. Special fast-cure versions are available but must be requested. These products offer lay-up times of 30 minutes or less depending on gel times. Fast cure products have shorter stability and should not be inventoried over 45 days.

These products (standard or fast-cure) should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

Caution

Isophthalic gel coats are not compatible in the liquid state with ISO/NPG gel coats or ISO/NPG resins. Spray and pumping equipment must be completely clean of these gel coats or resins before isophthalic's can be used.

Do not over-mix gel coats. Over-mixing breaks down gel coat viscosity, increasing tendencies to sag, and causes styrene loss, which could contribute to porosity. Gel coats should be mixed once a day for 10 minutes. The gel coat 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.

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Do not add any material, other than a recommended methyl ethyl ketone peroxide, to this product without the advice of a representative of the Cook Composites and Polymers Co.

Storage

Un-catalyzed, standard cure gel coats 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 gel coats (gel times less than 9.0 minutes) are stable for 45 days. The usage life is cut in half for every 20°F over 73°F. Totes of product can have even shorter usage life (66.0% of that for drums).

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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.

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