

# POLYCOR®

960-LK-171SW Blue

960-WK-433SW White

960-LF-214SW Light “Baby” Blue

960-W-016SW White

## ISO/NPG Gel Coats for the Swimming Pool Industry

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### Description

These POLYCOR® gel coats are ISO/NPG products formulated for the swimming pool industry. Unique benefits of these POLYCOR® gel coats are:

- Excellent resistance to water blistering
- Resistant fading caused by swimming pool chemicals
- Durable, reduced maintenance products

These POLYCOR® gel coats meet the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastic Composites Production – Corrosion Resistant/High Strength or High Performance gel coat.

Use of these POLYCOR® gel coats have enabled customers to meet certain requirements of the American National Standard for plastic bathtubs, shower receptors and shower stalls, IAPMO/ANSI Z124.1 .2-2005, Section 6.1.

For swimming pool applications CCP recommends that these gel coats be backed by IMEDGE® PBT200 polymer barrier technology, CCP's Armorguard® vinyl ester barrier coat products, or CCP's ArmorStar® vinyl ester skin resins. Use of these materials will create a durable osmotic blister resistant composite that is ideal for swimming pool manufacture.

These gel coats are intended and recommended only for the original manufacture of swimming pools; they should not be used for post application (other than patching on the original units). These gel coats are not recommended for the manufacture of spas or saunas.

While offering these benefits, these POLYCOR® gel coats have retained the important construction and application qualities expected from CCP gel coats, such as resistance to tearing and color separation, resistance to porosity, sag resistance, consistent liquid properties, and more. These all add up to higher quality appeal in swimming pools made with CCP POLYCOR® products.



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### Typical Properties (at 77°F)

Typical properties of POLYCOR® swimming pool gel coats are shown below. These values may or may not be manufacturing control criteria; they are listed for a reference guide only. Particular batches will 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.

Test	Value			
	960-LK-171W	960-WK-433SW	960-LF-214SW	960-W-016SW
Viscosity, Brookfield RVF #4 Spindle @ 4 rpm	9,000 – 14000	15,000 – 19,000	9,000 – 14,000	16,000 – 19,000
Thixotropic Index (2/20)	5.0 – 7.0	4.0 – 6.0	5.5 – 7.5	5.5 – 7.5
Flash Point	88°F	88°F	82°F	82°F
Hazardous Air Pollutants	See MSDS for amounts			
Volatile Organic Compound	32.4 – 35.4%	30.7 – 33.7%	37.3 – 39.3%	36.2 – 38.2%
Weight per Gallon (lbs.)	10.05 – 10.35	11.08 – 11.38	9.97 – 10.27	10.29 – 10.59
Gel Time with 1.8% MEKP (minutes)	10.5 – 16.5	10.5 – 16.5	10.5 – 16.5	1.0 – 16.0
Lay-up Time (minutes)	45 – 60			
Sag Resistance	Good at 20 mils			
Hide (Complete at)	6 – 11 mils	8 – 13 mils	8 – 13 mils	6 – 11 mils
Color Match (CMC max DE)	0.3	0.3	0.3	1.0

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's Regulatory Department and at [www.ccpcompositesus.com](http://www.ccpcompositesus.com).

### Application

POLYCOR® gel coats must be mixed prior to use. This includes prior to production spray application and when obtaining material for patching or any material that has been set aside for patching. Several suitable types of mixing equipment and styles of agitators are available for both pails and drums. Regardless of the specific type used, the equipment must have sufficient horsepower (relative to container size) to achieve thorough circulation from top to bottom and out to the sides of the container. The agitator must be properly

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sized for the container and must allow for uniform mixing regardless of the liquid level in the container.

Do not over mix POLYCOR<sup>®</sup> gel coats. Over mixing can break down the polymer coating viscosity increasing the tendency to sag. Over mixing can also result in styrene loss which could contribute to porosity. Air bubbling should not be used for mixing. It is not effective and only serves as a potential source of water or oil contamination.

POLYCOR<sup>®</sup> swimming pool gel coats are formulated for spray application. Brushing or rolling is not recommended. To maximize the performance of these coatings, the spray equipment must be

well maintained and regularly calibrated. Application procedure recommendations should be followed carefully. Poorly maintained equipment or poor application will quickly negate the beneficial properties of these gel coats. Refer to CCP's Composites Application Guide, for equipment and application recommendations.

When establishing the fan pattern for the spray equipment, use the lowest pump pressure needed to achieve a good fan pattern (no fingers or tails, uniform particle size of about 1/16"). Use of higher pressures can lead to a porosity or overspray. Overspray can result in a leathery or chicken skin texture if it falls on the part surface) CCP does not recommend fluid lines longer than 50 feet, or pumps smaller than 20:1 ratio. CCP 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.

For optimum results, uniform catalyst mix must be achieved. 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. Inquire about and adhere to all equipment manufacturers' recommendations.

For best overall end performance properties, a wet film thickness of 20 to 24 mils is recommended. The film should be applied in multiple passes with each pass having a thickness of 6 mils. More rapid film build could result in some sag and porosity. Films less than 12 mils may not cure properly, may be hard to patch, have more print-through, and be more susceptible to water blisters.

Films above 24 mils may pre-release, trap porosity, crack and are more subject to weathering discoloration. Avoid overspray settling on mold surfaces by beginning the spray pattern closest to the

vapor/air exhaust and progressing to the opposite mold end. Maintain recommended spray distances from the mold surface.

Delamination can occur if the gel coat is left in the mold overnight without being laminated. It is essential that the gel coat at least be *skinned* within 8 hours of being sprayed.

## Cure

It is recommended that gel time be checked in the customer's plant because age, temperature, humidity and

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catalyst will produce varied gel times. All data referencing gel or cure refers specifically to Arkema Luperox<sup>®</sup> DDM-9 catalyst. Syrgis NOROX<sup>®</sup> MEKP-9 and NOROX<sup>®</sup> MEKP-9H, Akzo Nobel CADOX L-50a and CADOX D-50 are expected to yield similar performance. Arkema Luperox<sup>®</sup> DHD-9, NOROX<sup>®</sup> MEKP-925 and NOROX<sup>®</sup> MEKP-925H, and Chemtura HP-90 may yield slightly shorter gel and cure times.

The recommended catalyst range is 1.2% to 3.0% with 1.8% at 77°F being ideal. Normally, the gelcoat film is ready for lamination in 45 to 90 minutes. This time element is dependent on material temperature, room temperature, humidity, air movement, and catalyst concentration. If lay-up time is checked by the finger method, slight pressure and rubbing should be used.

These products should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

### Caution

POLYCOR<sup>®</sup> swimming pool gel coats are not compatible in the liquid state with isophthalic gel coats or resins. Spray and pumping equipment must be completely clean of these products before they can be used.

Do not add any material, other than a recommended methyl ethyl ketone peroxide, to these products without the advice of a representative of CCP Composites US. **Under no circumstances should glycerin be added.**

### Storage Limitations

Uncatalyzed, POLYCOR<sup>®</sup> swimming pool gel coats have a usage life of 90 days from date of shipment from CCP when stored at 73°F or below, in a closed, factory-sealed, opaque container, and out of direct sunlight. The usage life is cut in half for every 20° over 73°F. Totes of product can have even shorter usage life (66% of that for drums).

### Data Sheets/MSDS

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

Additional information on POLYCOR<sup>®</sup> swimming pool gel coats is available in MB-338 Performance of Swimming Pool Coatings. Please contact CCP for more information.

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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.

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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.**