



POLYCOR®

960SW Series ISO/NPG Gel Coats for the Swimming Pool Industry

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Description

POLYCOR® 960SW Series gel coats are ISO/NPG products formulated for the swimming pool industry.

POLYCOR® 960SW Series 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 POLYCOR® 960SW gel coat has 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, Polynt recommends that these gel coats be backed by IMEDGE® HPB210 High Performance Barrier Coat, Polynt's ArmorGuard® vinyl ester barrier coat products, or Polynt's ArmorStar® VSX 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 Polynt Composites 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 Polynt POLYCOR® products.

Features and Benefits

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

Typical Liquid Properties (at 77°F)

The liquid properties of POLYCOR® 960SW Series gel coats are shown below. These values may or may not be manufacturing control criteria; they are listed as 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 results. Products outside of these readings can perform acceptably. Final suitability of this product is in the end use performance.



	POLYCOR®	POLYCOR®	POLYCOR®	POLYCOR®
	960LK171SW	960WK433SW	960LF214SW	960W016SW
Test	(Blue)	(White)	(Baby Blue)	(White)
Flash Point	88°F	88°F	82°F	82°F
Volatile Organic Compound	33.1%	31.5%	38.6%	37.2%
Viscosity ⁽¹⁾	12,000 cps	17,000 cps	12,000 cps	18,000 cps
Thixotropic Index (2/20)	6.0	5.0	6.5	6.5
Gel Time ⁽²⁾	13.5 minutes	13.5 minutes	13.5 minutes	13.5 minutes
Lay-up Time	45-60 minutes	45-60 minutes	45-60 minutes	45-60 minutes
Sag Resistance	Good at 20 mils	Good at 20 mils	Good at 20 mils	Good at 20 mils
Hide (Complete at)	7-11 mils	7-11 mils	9-13 mils	7-11 mils
Color Match (CMC max ΔE)	0.3	0.3	0.3	1.0
Weight per Gallon	10.3 lbs	11.3 lbs	10.2 lbs	10.5 lbs

⁽¹⁾ Brookfield RVF #4 Spindle @ 4 rpm

⁽²⁾ 100 g mass at 77°F, 1.8% Arkema Luperox® DDM-9

Polynt Composites recommends only the products listed above for use in pools, water slides, and other products where continuous water contact is anticipated. Polynt requires that a disclaimer be signed by any and all parties who intend to use non-recommended products for these applications.

Application

POLYCOR® 960SW Series gel coats should be mixed prior to use. Use mixing equipment with 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 sized for the container and must allow for uniform mixing regardless of the liquid level in the container. Air bubbling should not be used for mixing. It is not effective and only serves as a potential source of water or oil contamination. Do not overmix POLYCOR® 960SW Series gel coats. Overmixing can break down the viscosity, increasing the tendency to sag.

POLYCOR® 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 Polynt's Composites Applications 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. Polynt does not recommend fluid lines longer than 50 feet or pumps smaller than 20:1 ratio. Polynt 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 20-24 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.

The cure rate depends on a number of factors including the product's age, temperature, catalyst type, catalyst level and ambient humidity. All data referencing gel or cure refers specifically to Arkema Luperox® DDM-9 catalyst. United Initiators NOROX® MEKP-9 and NOROX® MEKP-9H, Akzo Nobel CADOX® L-50a and CADOX® D-50 are expected to yield similar performance. Arkema Luperox® DHD-9, United Initiators NOROX® MEKP-925 and NOROX® MEKP-925H, and Pergan HP®-90 may yield slightly shorter gel and cure times.

The recommended catalyst range is 1.2-3.0%, with 1.8% at 77°F being ideal. Normally, the gel coat film is ready for lamination in 45-90 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® 960SW Series 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 the recommended methyl ethyl ketone peroxide, to this product without the advice of a representative of the Polynt Composites.

Related Products

Polynt Composites recommends the use of PATCHAID® when patching POLYCOR® 960SW Series gel coats. Please see the technical data sheets for Polynt's PATCHAID® 970XJ037, 970X900, 970XJ166 and 970XA014 products.



Related Documents

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

POLYNT-19-CBU-FRM-02 Pool Disclaimer Form

Storage Limitations

Uncatalyzed, POLYCOR® 960SW Series gel coats have a shelf life of 120 days from date of manufacture when stored at 73°F or below, in a closed, factory-sealed, opaque container, and out of direct sunlight. Fast cure gel coats (gel time less than 9.0 minutes) are stable for 60 days. Shelf life is cut in half for every 20°F over 73°F. Totes of product can have even shorter shelf life – 66% of that for drums.

SDS / Data Sheets

SDS and data sheets can be obtained by contacting your Polynt representative or Polynt Customer Service at 800-322-8103.

POLYNT SAFETY INFORMATION

All sales of products manufactured by Polynt Composites USA Inc. and described herein, are made solely on condition that Polynt Composites USA 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 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 12th Report on Carcinogens issued by the National Toxicology Program lists styrene as a "reasonably anticipated" carcinogen, but the Report cautions that the NTP listing does not mean that styrene presents a risk to persons in their daily lives. The Styrene Information and Research Center does not agree with the classification as it did not include a review of all available data. SIRC states: "HHS included styrene in the 12th RoC despite the fact that European Union regulators have determined styrene does not represent a human cancer concern. E.U. scientists reviewed the full styrene database, weighing all of the available data in reaching their conclusion."

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 workplace 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 Safety Data Sheet for each product (identified by product number) before using. If unavailable, these can be obtained, free of charge, from your Polynt Composites representative or from: Polynt Composites USA Inc., 99 East Cottage Avenue, Carpentersville, IL 60110, 800-322-8103.

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.

LIMITED WARRANTY AND LIMITATION OF LIABILITY

LIMITED WARRANTY.

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 for the product; 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 ADDITIONAL REPRESENTATIONS OR SUGGESTIONS REGARDING THE PRODUCT OR ITS POSSIBLE USES ARE BASED UPON SELLER'S GOOD FAITH OPINION AND BELIEF, BUT ARE NOT TO BE CONSTRUED AS AFFIRMATIONS OF FACT, PROMISES, OR DESCRIPTIONS, AND SHALL IN NO WAY BE DEEMED PART OF THE SALE OF PRODUCT.** In particular, and without limiting the foregoing, because of environmental and use conditions beyond Seller's control, Seller offers no warranty and makes no promise concerning the results that may be obtained by the Buyer (or the Buyer's customer) with the product or the performance of the product. Each user should satisfy itself, by adequate testing, of the suitability of the product for its particular application.

LIMITATION OF LIABILITY.

- (a) Seller's total liability for any claim arising out of or in connection with this contract, including for breach of contract, warranty, statutory duty, or for other tort, including seller's negligence, shall not exceed the purchase price 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 LIMITATION LOSS OF PROFITS, CAPITAL OR BUSINESS OPPORTUNITY, DOWNTIME COSTS, OR CLAIMS OF CUSTOMERS OR EMPLOYEES OF BUYER, WHETHER IN AN ACTION UNDER CONTRACT, NEGLIGENCE OR ANY OTHER THEORY, ARISING OUT OF OR IN CONNECTION WITH THIS CONTRACT, OR THE USE, INABILITY TO USE, OR PERFORMANCE OF THE PRODUCT.**
- (b) If Seller furnishes technical or other advice to Buyer, whether or not at Buyer's request, with respect to processing, further manufacture, other use or resale of the products, Seller shall not be liable for, and Buyer assumes all risk of, such advice and the results thereof.

The information provided is believed to be accurate at the time of preparation, or prepared from sources believed to be reliable, but it is the responsibility of user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use.