POLYCOR®

949 Series
Sanding Gel Coats

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Description

POLYCOR® 949 Series sanding gel coats have been specifically formulated for use as a sanding substrate. Sanding gel coats are used for FRP parts that will be subsequently painted. They can be used for room temperature and heated molding (RTM) applications.

Customer experiences have proven that these products can be post-baked at temperatures up to 285°F for as long as two hours.

They may also be used for utility, noncritical exterior applications.

They are not intended (nor should they be used) as a surface coat for the marine, tub/shower or swimming pool industries. They should not be used for water immersion service (boat hull, swimming pool, spa, water tank, etc.), even if/when painted.

Features and Benefits

- Easy to spray
- Resistance to porosity and pinholing
- Easy to sand when cured

They are ready to use and require only the addition of the proper amount of an appropriate peroxide to cure.

Typical Liquid Properties (77°F)

The liquid properties of the POLYCOR® 949 Series sanding 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 may not conform exactly to the numbers listed because storage conditions, temperature changes, age, and 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. Final suitability of these products is in the end use performance.

Test	POLYCOR® 949 Series - Colors	POLYCOR® 949 Series - Whites	POLYCOR® 949 Series - Conductive
Viscosity (1)	11,000-16,000 cps	12,000-22,000 cps	11,000-20,000 cps
Thixotropic Index (2/20 rpm)	5.5-7.5	5.5-7.0	5.5-7.0
Gel Time (2)	9-14 minutes	9-19 minutes	4-22 minutes
Weight per Gallon	10.2-10.5 lbs.	11.0-11.5 lbs.	9.9-10.3 lbs.
Lay-up Time	45-60 minutes	45-60 minutes	45-60 minutes
Sag Resistance	Good @ 20 mils	Good @ 20 mils	Good @ 20 mils
Electrical Resistance	N/A	N/A	50 kΩ
Hide	Normally complete @ 10 mils	Normally complete @ 10 mils	Normally complete @ 4 mils
Color Match (CMC maximum ΔE)	1 unit	1 unit	1.5 units

(1) Brookfield RVF #4 Spindle @ 4 rpm

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

Properties will vary depending on the formulation. Ask a Polynt Composites representative about a specific formulation.

Application

POLYCOR® 949 Series 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 sized for the container and must allow for uniform mixing regardless of the liquid level in the container.

Mixing once a day for 10 minutes is typically sufficient. Do not overmix POLYCOR® 949 gel coats. Overmixing can break down the polymer coating viscosity increasing the tendency to sag. Overmixing 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.

These products are formulated for airless, air-assist airless and conventional spray application. Neither brushing nor rolling is recommended. Polynt 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 or air-assist airless equipment.

For the best end 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, and will have more print-through. Films above 24 mils may pre-release, trap porosity, and crack more easily.

For RTM, molds above 100°F require a high temperature mold release. The mold type and temperature will affect mold release selection. Refer to the mold release data sheets for proper selection. Note: Mold release transfer can affect paintability and must be evaluated with the final paint system.

Mold release agent(s) must be properly wiped off the mold before spraying gel coat. Residual mold release will cause wax spews when parts are sanded and baked. Parts should be washed, scuff-sanded to remove all gloss, and washed again with a suitable solvent. This should remove any mold release transfer and provide for mechanical adhesion of paint systems. Note: Parts should be inspected just before painting because they can pick up moisture and other contaminates if not properly stored.

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 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 MEKP-925H, and Pergan HP-90® may yield slightly shorter gel and cure times.

Room Temperature

The catalyst level should not exceed 3%, nor fall below 1.2% for proper cure. The recommended range is 1.2-3.0%, with 1.8% at 77°F being ideal. Normally, the gel coat film is ready for lamination in 45-60 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.

RTM

. The recommended catalyst level range for proper cure is 1.0-2.0%.

- The common RTM molding temperature is 140°F. At 140°F, the gel time is very fast (less than 3 minutes). Changes in catalyst levels will not greatly affect gel time at temperatures above 100°F but will affect the cure. For proper cure, DO NOT use less than 1.0% MEKP. Because of the heated molds, fewer promoters are typically used and gel and cure times at room temperature are longer.
- Temperatures above 180°F may require a specialized catalyst/promotion system.

Lay-up, glass placement and/or resin injection time will vary depending on temperature. At temperatures in the 140°F range, the injection window is between 5-10 minutes. Note: When heated molds are used, the gel coat must be processed as soon as possible to prevent pre-release and poor adhesion.

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

Caution

POLYCOR® 949 Series 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 949 Series gel coats can be used.

Do not add any material, other than a recommended peroxide, to this product without the advice of a representative of Polynt Composites.

Storage Limitations

Uncatalyzed, standard cure 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. The 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.

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