



STYPOL[®]

040-4985

Acrylic Modified Resin

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Type

STYPOL[®] 040-4985 is a clear, light colored, acrylic modified, chemical resistant NPG[®] isophthalic gel coat base.

Uses

STYPOL[®] 040-4985 is designed specifically for spray granite applications where the user incorporates granite effect fillers.

Distinguishing Characteristics

- Good sprayability
- Excellent non-sagging properties when filled with granite effect fillers
- High clarity
- Light stabilized
- Good color retention

STYPOL[®] 040-4985 should **not** be used as a marble clear gel coat without adding granite effect filler.

Typical Liquid Properties

Liquid properties of STYPOL[®] 40-4985 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 results. Products outside of these readings can perform acceptably. Final suitability of this product is in the end use performance.

Test	Stypol [®] 040-4985
Non-Volatile Matter ¹	55.5%
Viscosity ²	2,000 cps
Thixotropic Index	5.0



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Gel Time ³	12 minutes
Castable Time ⁴	40 minutes
Weight per Gallon	8.6 lbs
Specific Gravity	1.034

¹For HAP and Monomer content information please refer to the MSDS

²Brookfield RVF #3 Spindle @ 20 rpm

³100ass, 2.0% Arkema Luperox[®] DDM-9

⁴“Castable” refers to the point at which a gel coat film is ready to be cast upon

Physical Properties

The physical properties of STYPOL[®] 40-4985 are shown below. Properties are shown for a neat resins casting. These are typical values and are provided for reference only.

Note: The physical properties of thermoset resins evolve as the resin cures. The properties given below are for well cured castings and laminates. Resin and laminates at different stages of cure will have varying properties.

Test	Test Method ¹	Neat Resin Casting
Tensile Strength	ASTM D638	10,000 psi
Tensile Modulus		440,000 psi
Tensile Elongation		2.9%
Flexural Strength	ASTM D790	18,500 psi
Flexural Modulus		570,000 psi
Impact	ASTM D256	3.43 ft.-lb.
Barcol Hardness, Model #934	ASTM D2583	35
Heat Distortion Point at 264 psi	ASTM D648	83°C/181°F

¹All tests run per internal CCP test methods. These methods are similar to the ASTM Method listed above.

Application

STYPOL[®] 040-4985 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

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

Do not over mix STYPOL[®] 040-4985 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.

STYPOL[®] 040-4985 is an acrylic modified ISO/NPG resin designed for applications using spray granite fillers. It is formulated with a very high thixotropic index for excellent suspension of granite particulates. When properly mixed, catalyzed, sprayed, and cured, STYPOL[®] 040-4985 granite filled coating will give the same finished surface qualities as cast solid surface.

Follow the recommendations of the granite effect filler supplier for incorporating their filler into STYPOL[®] 040-4985.

The cure rate of polyester resins depends on a number of factors including the product's age, temperature, catalyst type, catalyst level and ambient humidity. When used in a laminating application the laminate cure rate also depends on reinforcement content and laminate thickness as well as other factors. For these reasons, we recommend that customer's check the cure rate in your plant.

STYPOL[®] 040-4985 is quality control tested using Arkema Luperox[®] DDM-9. Syrgis 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, NOROX[®] MEKP-925 and NOROX[®] MEKP-925H, and Chemtura HP-90 may also be used but gel times will vary.

The catalyst level (based on resin) should not exceed 1.5% or fall below 2.5% for proper cure. A catalyst level of 2.0% at 77°F is considered ideal. This product should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

STYPOL[®] 040-4985 filled with a granite effect filler can be sprayed behind a high quality clear marble gel coat such as STYPOL[®] 040-4917, or it can be sprayed as a solid surface coating to replicate solid surface appearance.

STYPOL[®] 040-4985 filled with granite effect filler should be applied to a total thickness of 30 to 60 mils to insure coverage. Gel time should be between 8 and 20 minutes on the part to allow the material to flow while minimizing problems with filler settling. To help avoid driving the granite effect fillers through the filled mix to the mold surface, spray at the minimum pressure. The filled mix can be sprayed through a cup gun using number 8 or number 9 tips.

Make sure catalyst is well dispersed in the resin. Cup gun pressure should be regulated at about 50 psi. Many marble manufacturers drill out the vacuum relief hole on the metal cap to 1/16 to 1/8 inch to reduce vapor lock.

The filled mix can also be sprayed through a pressure pot spray system. Generally, an internal mix gun is best to insure proper catalyst incorporation into the filled system. It is helpful to pre-wet and to purge the system when it will not be used for a long period (such as the end of the day) with STYPOL[®] 040-4985



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without the granite effect filler added. This will significantly reduce problems with line plugging.

Related Products

See CCP's Marble and Casting Product Line Guide, available at www.ccpcompositesus.com, for related products.

Caution

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

Storage Limitations

STYPOL[®] 040-4985 has a shelf life of three months 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°F over 73°F.

Data Sheet/MSDS

CCP data sheets and MSDS's are available in printable format at www.ccpcompositesus.com.

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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.

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