



STYPOL®

040-9322, 040-9341 and 040-9343 High Performance Pultrusion Resins

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Type

STYPOL® 040-9322, 040-9341 AND 040-9343 are excellent high performance pultrusion resin. They exhibit high gloss and exceptional physical, electrical and mechanical properties. These products are specifically designed for the pultrusion process.

Distinguishing Characteristics

STYPOL® 040-9322, 040-9341 and 040-9343 offers the following features:

- High viscosity
- Good reactivity
- High viscosity

Typical Liquid Properties

Liquid properties of **STYPOL® 040-9322, 040-9341 and 040-9343** 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 have a significant effect on the testing. Products with properties outside of these readings can perform acceptably. Final suitability of this product is in the end use performance.

Test	Values		
	040-9322	040-9341	040-9343
Viscosity, 77°F (25°C)	2400 cps ¹	1450 cps ¹	600 cps ²
Non-Volatile Material	70%	66%	61%
Reactivity @ 180°F SPI 1.00% BPO-98 + 1.00% Styrene			
Gel Time	4 minutes	4 minutes	4 minutes
Gel to Peak	5 minutes	5 minutes	5 minutes
Peak Exotherm	430°F	430°F	435°F

¹Brookfield LVF #3 Spindle @ 30 rpm

²Brookfield LVF #2 Spindle @ 60 rpm



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Physical Properties

The physical properties of **STYPOL® 040-9341, 040-9322 and 40-9343** 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 a well cured casting. Castings at different stages of cure will have varying properties.

Test	Test Method ¹	Neat Resin Casting ²
Tensile Strength	ASTM D638	8,700 psi
Tensile Modulus		664,000 psi
Tensile Elongation		1.68%
Flexural Strength	ASTM D790	19,800 psi
Flexural Modulus		535,000 psi
Compression Strength	ASTM D695	14,900 psi
Heat Distortion Point at 264 psi	ASTM D648	186°F (86°C)

All tests are run per CCP internal test methods. These methods are based on the ASTM methods listed.

STYPOL® 040-9341 was promoted with 0.15% cobalt octoate (12% cobalt) and inhibited with 200 ppm hydroquinone.

Promoted mix was initiated with 1.2% DDM-9. Clear casting cured for 16 hours at room temperature and postcured for 1 hour at 86°C, then 2 hours at 120°C, then allowed to cool overnight. (Reference UP-06-2667).

Storage

Uncatalyzed, standard cure polyester products 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.

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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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