PRODUCT BULLETIN

October 2021

ArmorStar® VE IVSX Series

VE MC • VE SX • VE BX

Vinyl Ester Blend Infusion Resins

DESCRIPTION

ArmorStar® IVSX Series resins are pre-promoted, vinyl ester blended resins containing styrene monomer. They are formulated for building reinforced plastic parts using closed molding processes and specifically infusion processes such as vacuum bagging, SCRIMP®, and resin injection.

BENEFITS & FEATURES

- Low viscosity for good fiber wetting and mold filling performance
- Rapid fill times
- Excellent strength and toughness for crack resistance
- High heat distortion temperature (HDT)
- Superior blister resistance
- Good surface cosmetics
- Compatible with standard MEKP initiators and CHP/MEKP blends
- IVSXC160 is for manufacture of thicker parts requiring reduced exotherm
- IVSXH210 is for rapid cure and Barcol development for quick demold

PROPERTIES – LIQUID

Property(1)	Unit	IVSXC160	IVSXH210
Viscosity(2)	cps	100	100
Gel Time	minutes	16(3)	20(4)
Weight per Gallon	lbs/gal	9.0	9.0

1) All properties at 25°C/77°F unless otherwise noted
2) Brookfield Viscometer LV Spindle # 2 at 60 RPM
3) 1.75% United Initiators MCP-75
4) 1.50% Arkema Luperox® DDM-9

PROPERTIES – PHYSICAL

Property[1]	Unit	Neat Resin Casting[2]	Laminate[3]	Test Method
Tensile Strength	psi	10,000	16,000	ASTM D 638
Tensile Modulus	psi	580,000	1,460,000	ASTM D 638
Tensile Elongation	%	2.4	1.6	ASTM D 638
Flexure Strength	psi	16,000	31,000	ASTM D 790
Flexure Modulus	psi	590,000	1,290,000	ASTM D 790
Glass Transition Temperature, Tg	°C/°F	110/230	-	ASTM D 695

1) Physical properties were determined using internal Polynt test methods that are similar to those listed above.
2) IVSXH210 neat resin casting catalyzed with 1.5% Arkema Luperox® DHD-9. The casting cured for 16 hours at room temperature and was post cured for 4 hours at 150°F.
3) Laminate – IVSXH210 resin initiated with 1.5% Arkema Luperox® DHD-9. The laminate schedule was 2 plies of 1.5 oz. CSM. Glass content was 35-37%. The panel was cured for 16 hours at room temperature and post cured for 4 hours at 150°F.

APPLICATION

ArmorStar® IVSXH210 is quality control tested using Arkema Luperox® DDM-9 but can be used with a variety of peroxide initiators. When making thin laminates (< 150 mils) Luperox® DDM-9 or an equivalent catalyst such as NOROX® MEKP-9, NOROX® MEKP-9H, Akzo Nobel CADOX L-50a and CADOX® D-50 are recommended. Arkema Luperox® DHD-9, United Initiators NOROX® MEKP-925, NOROX® MEKP-925H and Chemtura HP-90 may also be used, but gel and cure times may vary.

For thicker laminates cumene hydroperoxide/methyl ethyl ketone peroxide blends such as Arkema's Luperox® KC-70 and KC-50 can be used to reduce exotherm without negatively affecting the final cure of the composite.

ArmorStar® IVSXC160 is designed to have reduced exotherm for fabrication of thicker laminates. It is quality controlled, tested with United Initiators MCP-75. Arkema Luperox® 730 or KC-70 can also be used with similar performance.

MEKP catalyst levels should not exceed 2.4% or fall below 0.9% for proper cure. Contact your initiator supplier or your Polynt Composites representative for acceptable catalyst ranges for MEKP/CHP blends. This product should not be used when temperature conditions are below 60°F as curing may be adversely affected.

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

Refer to Polynt's Composites Applications Guide ("Cookbook") for equipment and application recommendations. Each user must determine the suitability of this product to his/her particular mode of operation and intended end-use application. A Polynt representative will be available to assist in the proper selection of all Polynt-Reichhold products available for commercial use.

SHELF LIFE & STORAGE

The shelf life of the ArmorStar® VE IVSX Series is 120 days from the date of manufacture from Polynt. To maximize usage life and maintain optimum properties, resins and gel coats should be stored in the original closed container at temperatures below 23°C/73°F and away from ignition sources and sunlight. Keep containers sealed to prevent moisture pick-up and monomer loss.

SAFETY & WARRANTY

To receive a copy of our safety and warranty information, please email safetyandwarranty@polynt.com.