Technical Data Sheet

55 X SERIES GELCOAT

DESCRIPTION :

Polynt Composites 55X series gelcoats are formulated specifically for the fibreglass industry where reduced burn characteristics are needed. When properly applied, 55X series gelcoats meets particular flame retardant requirements.

Physical properties such as U.V. resistance and water resistance are certainly reduced when using 55X series gelcoats vs other Polynt Composites gelcoats. When these properties are of consideration to the finished part we caution against the use of 55X gelcoats.

Since the flame properties of 55X series gelcoats in the cured state will vary depending on catalyzation, ultimate cure, thickness, and the laminating materials used, it is suggested that the user submit samples of the entire composite for testing by an independent lab.

TYPICAL PROPERTIES (at 25°C or 77ºF) :

- Easy to spray as a regular isophtalic gelcoat
- Only requires the addition of the proper amount of MEKP catalyst
- Wide range of color and also customer color-matching available on request

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 test results. Gel coats with properties outside of these ranges can perform acceptably.

PHYSICAL CHARACTERISTICS (at 25°C or 77ºF) :

Test	Values
Viscosity	Brookfield RVF rotor#4 @ 4 rpm
Colors	11,000 – 16,000 cps
White & Off white	15,000 – 20,000 cps
Thix Index (2/20)	> 5.5
Specific gravity	1,27 – 1,32 Kg/litre
Gel time@ 1.8% MEKP925	7 – 17 minutes
Tack free	45 – 60 minutes
Sagging resistance	Good @ 20 mils
Opacity (most formulation)	Complete @ 12 mils

ASTM requirements
55X series gelcoat when properly applied, may meet ASTM E-162, E-662, E-1354 et SMP-800 requirements.

MACT Compliance
55 series gelcoat meet the EPA National Standard Emission Standards for Hazardous Air Pollutants
(NESHAP) for Reinforced Plastic Industry.

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Docket 90-A
Flame spread results may enable us to meet the requirements of Docket 90-A, from American Department of Transportation.
Reds, Yellows and dark blues may have low hiding power. Ask a Polynt Composites representative whether the selected red, yellow or blue requires special application procedure.

Refer to the MSDS for handling precautions. MSDS's are supplied upon request from Polynt Composites 's Regulatory Department.

Flame test

55X series gelcoat
reinforced with:

IFR Resin series	40 parts
Aluminium tri-hydrate	40 parts
Fiberglass	20 parts

Bombardier SMP800-C	meets requirements
ASTM E 162	flame spread = 11
ASTM E 662 – opened burner	Ds 1,5 min. = 10
	Ds 4,0 min. = 120
ASTM E 662 – closed burner	Ds 1,5 min. = 1

Tested by :

Bodycote©

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 UNITED INITIATORS MEKP 925 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. NOROX MEKP-925H, and Witco HP-90 may yield slightly shorter gel and cure times.

The catalyst level should not exceed 3.0% or fall below 1.2% for proper cure. Recommended range is 1.2% to 3"0% with 1.8% at 77°F being ideal. Normally, the gelcoat film is ready for lamination in 60 to 90 minutes. This time element is dependant on material temperature, room temperature, humidity, air movement, and catalyst concentration. This product should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

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APPLICATION :

55X series gelcoats are generally formulated for both airless and conventional spray applications. Neither brushing nor rolling is recommended. Refer to PB-16 (application Guide) and PB-3 (Equipment selection) bulletins for additional specific recommendations. Polynt Composites recommends a gelcoat 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.

Batch mixing is recommended to achieve the best catalyst mix and cure because even with the equipment properly calibrated, potential problems can occur due to: poorly atomized catalyst; surging problems (gelcoat or catalyst); poor tip alignment (Catalyst to gelcoat 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 gelcoat. Ask about and adhere to all equipment manufacturer's recommendations.

Avoid over-spray settling on mold surfaces by beginning spray pattern closest to the vapor/air exhaust and progressing to the opposite mold end. Maintain recommended spray distances from the mold surface.

For best overall 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, have more print-trough, and are more susceptible to water blisters. Films above 24 mils may pre-release, trap porosity, or crack, and are more subject to weathering discoloration. If water blisters are of a great concern (boat hulls), 20 to 24 mils would perform better than a thinner film, but resistance to sag, porosity and cracking could suffer. If weathering (yellowing from sunlight, decks) is of great concern, then thinner films (12 to 16 mils) would perform better, but patchability and resistance to print-trough and blistering could suffer.

Proper mold maintenance is important. Although Polynt Composites 55X series gelcoats have good patching properties, minimal repair work is always desirable. Sanding and compounding can hasten the chalking and loss of gloss of all gelcoats.

PRECAUTION :

Do not over-mix gelcoats. Over-mixing breaks down gelcoat viscosity, increasing tendencies to sag, and causes styrene loss, which could contribute to porosity. Gelcoats should be mixed once a day for 10 minutes. The gelcoat should be mixing to the sides and bottom of the container with the least amount of turbulence possible. Air bubbling should not be used for mixing. It is not effective and only serves as a potential for water or oil contamination.

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

STORAGE LIMITATIONS :

Gelcoat has a shelf life of 45 days from date of manufacture when stored at 22° (73°F) or below, in a closed, factory sealed, opaque container, and out of direct sunlight. Fast cure (gel times less than 9.0 minutes) is stable for 30 days. The shelf life is cut in half for every 11°C (20°F) over 22°C (73°F). Totes of product can have even shorter shelf life (66.0% of that for drums).

SHIPPING :

Shipment is normally in lined 205 liters (45 imp. gallon) and/or 20 liters (4.4 imp. gallon) containers.

DISPOSAL :

Dispose of in accordance with local and provincial regulations. Do not incinerate closed containers. Incinerate in approved facilities only.

Safety information

All sales of products manufactured by Polynt Composites Canada Inc. and described herein, are made solely on condition that Polynt'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.

Most polyester/vinylester products contain 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 identifier) before using. If unavailable, these can be obtained from your Polynt representative or from: Polynt Composites Canada Inc. 905 495-0606

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FOR INDUSTRIAL USE AND PROFESSIONAL APPLICATION ONLY.
KEEP OUT OF REACH OF CHILDREN.

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Disclaimer and limitation of liability

The products sold hereunder shall meet seller's applicable specifications at the time of shipment. Seller's specifications may be subject to change at any time without notice to buyer. Buyer must give seller notice in writing of any alleged defect covered by this warranty (together with all identifying details, including the product code(s), description and date of purchase) within thirty (30) days of the date of shipment of the product or prior to the expiration of the shipment's quality life, whichever occurs first.

The warranty described herein shall be in lieu of any other warranty, express or implied, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose, there are no warranties that extend beyond the description on the face hereof.
The buyer's sole and exclusive remedy against seller shall be for the replacement of the product or refund of the purchase price in the event that a defective condition of the product should be found to exist by seller. No other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available to the buyer.
The sole purpose of this exclusive remedy shall be to provide buyer with replacement of the product or refund of the purchase price of the product if any defect in material or workmanship is found to exist. This exclusive remedy shall not be deemed to have failed its essential purpose so long as seller is willing and able to replace the defective products or refund the purchase price.
To the best of our knowledge, the information contained herein is accurate. Final determination of the suitability of the material for the use contemplated, the manner of use and whether the suggested use infringes any patents is the sole responsibility of the buyer.