

## 53 series gelcoat

### DESCRIPTION:

The 53 series gelcoats are formulated with a particular mix of polyester resins, for use in applications where sun exposure and weather conditions are a factor. They are suitable for boats, truck cabs, water slides and environments with humidity and direct sun exposure.

### PHYSIC CHARACTERISTICS (at 25°C or 77°F):

- Very good resistance to yellowing and fading due to sun exposure
- Resist to thermal change and weathering
- May be used in submerged application
- Resistance to loss of gloss
- Minimal chalking effect over time

These values may or may not be manufacturing control criteria; they are listed for a reference guide only. Particular batches may 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.

### Test

### Value

Viscosity	
Brookfield RVF #4 Spindle @ 20 rpm	3300 - 5300 cps (colored) 3500 – 5500 cps (white and off white)
Thixotropic Index (2/20)	< 5
Weight per Gallon	1,20 – 1,35 Kg / litre
Gel Time at 1.8% MEKP**	10 - 18 minutes (may vary)
Lay-up Time**	40 - 60 minutes
Sag Resistance	Good at 20 mils
Hide (Most Formulations)	Complete at 12 mils.

\*\* tested @ 1,8% Norox MEKP 925 à 25°C

Reds, yellows and dark blues may have low hiding power. Ask a Progress representative whether the red, yellow or blue selected requires a special application procedure such an increase in film thickness and/or multiple applications).

Refer to the M.S.D.S. for safe use and manipulation. M.S.D.S. is available upon request from our sales department.

## 53 series gelcoat

### **APPLICATION:**

53 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.

Progress 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 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 (gel coat or catalyst); poor tip alignment (catalyst to gel coat 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 gel coat. Ask about and adhere to all equipment manufacturers' recommendations.

Avoid over-spray settling on mold surfaces by beginning the spray pattern closest to the vapour/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  $18 \pm 2$  mils is recommended as ideal. Films less than 12 mils may not cure properly, may be hard to patch, have more print-through, 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-through and blistering could suffer.

### **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 NOROX MEKP-925 catalyst. Norac NOROX MEKP-9, NOROX MEKP-9H, Akzo Nobel CADOX L-50a, ATOFINA Luperox® DDM-9 and CADOX D-50 are expected to yield similar performance. ATOFINA Luperox® DHD-9, NOROX MEKP-925H, and Crompton 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 gel coat film is ready for lamination in 45 to 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.

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

## 53 series gelcoat

### **PRECAUTION:**

ISO/NPG gel coats are not compatible in the liquid state with Isophthalic gel coats or Isophthalic resins. Spray and pumping equipment must be completely clean of these gel coats or resins before ISO/NPG can be used.

Do not over-mix gel coats. Over-mixing breaks down gel coat viscosity, increasing tendencies to sag, and causes styrene loss, which could contribute to porosity. Gel coats should be mixed once a day for 10 minutes. The gel coat 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 Progress Plastiques Cie.

### **STORAGE LIMITATIONS:**

Uncatalyzed, standard cure gel coats have a usage life of 90 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 are stable for 45 days. The usage life is cut in half for every 20°F over 73°F.

### **SHIPPING:**

Shipment is normally in open head, 55-gallon drums ( 204 litres) or 4,4 imperial gallons (20 litres).

## POLYESTER SAFETY INFORMATION

All sales of products manufactured by Progress Plastiques Cie, and described herein are made solely on condition that Progress'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 polyester 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 and dusts caused by applying, sanding, grinding and sawing polyester products. Wear an appropriate NIOSH/MSHA approved, 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.

## 53 series gelcoat

The International Agency for Research on Cancer (IARC) has reclassified styrene as Group 2B "possibly carcinogenic to humans." This new classification is 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 has 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 polyester 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.

If the label or Material Safety Data Sheet indicates lead or lead chromate is present, do not use on toys, furniture or surfaces that might be chewed by children. Wash hands thoroughly after using and before smoking or eating. Long-term overexposure by inhalation or ingestion of mists and dusts from products containing lead compounds and lead chromate can cause harmful effects to the urinary, blood, reproductive and nervous systems and may create risk of cancer. Use a respirator as explained in Paragraph 4 of this Information Sheet.

Some polyester 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 Progress representative.

Polyester 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 polyester 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.

DISCLAIMER AND LIMITATION of LIABILITY  
(08/14/95)

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

## 53 series gelcoat

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.

Progress Plastiques Cie, 2400, rue Canadien,  
Drummondville, Québec, J2C 7W3,  
(819) 477-4516.  
November 2008

[www.ppq.ca](http://www.ppq.ca)