

Product Data



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MGS SERIES SolarShield7

HIGH PERFORMANCE GEL COATS

The HK Research laboratories have developed a new family of marine gel coats based on leading edge hybrid polymer technology that permits the formulation of high performance marine grade gel coats that exhibit very little color change upon extended ultraviolet light exposure. These MGS SolarShield[®] gel coats are particularly suited for the manufacture of FRP parts such as boat decks that are continually subjected to ambient weather conditions including prolonged sunlight exposure. They are characterized by the following features:

- * Outstanding Color and Gloss Retention *
- * Acrylic Modified to Further Enhance Durability *
- * UV Light Stabilized *
- * Outstanding Buff-Back Characteristics *
- * High Hiding *
- * Significantly Reduced Styrene Emissions *

The MGS-Series SolarShield[®] High Performance Gel Coats are especially formulated pigmented polyester polymers that are designed for use in the manufacture of marine craft, building components and other applications where the gel coat surface will be continually exposed to ambient weather conditions. The UV Light-Stabilized, Acrylic Modified hybrid polymer used in the manufacture of these high performance gel coats provides superb exterior durability to the FRP component with virtually no color change due to UV light degradation. These gel coats are also distinguished by their excellent leveling and fast, even film cure rates.

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Typical properties of this family of High Performance Gel Coats are as follows:

	MGS SERIES White & Pastel Colors	MGS SERIES Translucent & Deep Colors
Weight/Gallon @ 77°F:	10.5 lbs.	9.5 lbs
Specific Gravity @ 77°F:	1.26 lbs	1.14 lbs
Viscosity, Brookfield @ 77°F, 6 rpm: 60 rpm:	14,000 cps 2,300 cps	14,000 cps 2,300 cps
Shelf Life @ 77°F: Uncatalyzed:	3 months minimum	3 months minimum
Catalyzed, 2% MEKP*:	12-16 minutes	12-16 minutes

*RCI Superox 46-702 or Equivalent

APPLICATION

HK Research Corporation's MGS Series Hybrid Polymer Gel Coats are formulated for standard conventional spray application, as well as "air-less" application. These high performance gel coats require careful application in order to maximize the properties in the cured gel coat film.

The MGS High Performance Gel Coats are especially formulated to produce outstanding color stability over normal outdoor use. Proper catalyzation, following good spraying procedures and application of an adequately thick uniform film of gel coat all contribute to the high performance properties of this gel coat.

The MGS High Performance Gel Coats do offer the added advantage of reduced Styrene emissions during typical spray procedures. Calculations of Styrene emissions using the method outlined in EPA's Air Pollution Handbook, AP-42, indicate that the Styrene emissions of the MGS-Series Gel Coats would be about 50% less than those of most conventional gel coats.

The formulations of the MGS High Performance Gel Coats offer the additional feature of outstanding buff-back properties. This gel coat will polish out to an excellent high gloss finish without discoloration or "halo" effects.

PERFORMANCE PROPERTIES

Laboratory tests on FRP panels produced using the MGS Series gel coats have shown virtually no color change and maximum gloss retention when exposed to QUV-B bulb weatherometer exposure.

MIXING

Prior to removal from the shipping container and catalyzation, it is recommended that the materials be mixed thoroughly to reincorporate any settled or stratified material. It is further recommended that the material in the shipping container be mixed at least once a week during its use period. This mixing procedure would assure the most uniform properties during application of the gel coat. Mechanical mixing is recommended and should be sufficient to "turn" the material 10 times. Most common gel coat mixing equipment will accomplish an adequate blend in less than 1/2 hour.

We strongly caution gel coat users not to try mixing gel coats by bubbling air through the container. This practice is very harmful to the gel coat as well as being a significant safety hazard. We also consider mixing by rolling a drum of gel coat across the floor an unsafe practice as well as a very inefficient method of mixing.

DO NOT MIX MATERIAL CONTINUOUSLY!---As this may cause loss of thixotropic properties. If gel coat is inadvertently over mixed, hold material for 4 hours without agitation before application.

It is suggested that the catalyst concentration used in the application of MGS Series Gel Coats not exceed 3.0% or fall below 1.5% to retain maximum properties. The recommended range for the catalyst concentration within the applied film is 1.8 to 2.2% at 77°F.

Under normal conditions the gel coat is ready to laminate upon in 30 to 45 minutes. The "time to laminate" is dependent on the room temperature, humidity and air movement, as well as the catalyst concentration and the film thickness. A wet film thickness of at least 18 to 20 mils is recommended for proper hiding, cure, and performance properties. These products should not be used when the temperature conditions, both mold and ambient, are below 65°F as the curing may be adversely affected.

SAFETY CONSIDERATIONS

MGS Series Hybrid Polymer Gel Coats are based on a resin, which contains styrene monomer, which is a flammable liquid. Keep away from sparks, heat and open flame (including pilot lights). Electrical equipment should be vapor-proof and protected from breakage.

Styrene vapors are heavier than air and will tend to concentrate in the low areas of molds and in pockets immediately above the floor area. To keep vapors within a safe limit in all areas, adequate ventilation or suction fans should be used that will remove these styrene monomer vapors.

All equipment must be grounded - including spray guns and molds.

Both the polyester gel coat and the catalyst may cause burns to eyes and skin. Do not get in the eyes! Avoid breathing vapors! Gel coat applicators should wear a NIOSH approved respirator effective for vapors, spray mist and dust. In case of accidental contact, remove contaminated clothing and wash affected skin areas with soap and copious quantities of water. Contact a physician if persistent skin irritation occurs. For eyes, immediately flush with plenty of water for at least 15 minutes; call a physician immediately. Wash contaminated clothing before using.