



# POLYCOR®

941CJ018 (use with 941 Series Clear Gel Coats)

961CJ037 (use with 961 Series Clear Gel Coats)

963CA220 (use with 963 Series Clear Gel Coats)

## Patching Thinners for Marine Clear Gel Coats

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### Description

These thinners have been developed specifically for patching metal flake. They are to be used with their specific counterpart clear gel coat. Each thinner is a non-filled/thixotropic version of its counterpart clear gel coat, therefore being completely compatible.

The thinners contain no surfacing agent (which has a tendency to cause hazing when trapped within the metal flake film). Because these thinners are of the same base material as the counterpart clear, the thinner/gel coat mix can be of any ratio desired. A suggested starting point though, is 50:50. Advantages of using a thinner in the clear gel coat are:

- Same color and clarity as used for the part itself
- Better flow characteristics (less orange peel)
- No possibility of entrapping surfacing agent
- Better exposure characteristics

### Typical Properties (at 77°F)

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. Thinners with properties outside of these ranges can perform acceptably.

Test	941CJ018	961CJ037	963CA220
Viscosity	All products are thin, as "light syrup"		
Thixotropic Index	None	None	None
Flash Point	79°F	79°F	79°F
Hazardous Air Pollutants	See MSDS's for amounts		
Volatile Organic Compounds	49.3 - 51.3%	47.0 - 49.0%	45.5 - 47.5%
Weight/Gallon (in pounds)	8.36 - 8.66	8.42 - 8.72	8.47 - 8.77
Gel Time (minutes) at 77°F	7 - 10 @ 1.8%	6 - 10 @ 1.8%	7 - 11 @ 1.8%

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## Recommended Procedure

Dilute the appropriate clear gel coat with the counterpart thinner. Suggested starting point is 50:50, although this ratio can be altered to suit your individual needs.

Add the appropriate amount of metal flake to a portion of your mix. Catalyze, and then spray this metal flake mix onto the area to be patched.

Then spray catalyzed clear mix on top of the metal flake coat. For surface cure, a PATCHAID<sup>®</sup> (see DS-70D), catalyzed at 2.0%, can be sprayed on top of the clear coat. This overspray PATCHAID<sup>®</sup> will run if applied too thick. Correct thickness will be the thinnest film possible, somewhere around 1-2 mils. PATCHAID<sup>®</sup> contains a surfacing agent and fast cure additives which will help the clear coat cure tack-free and give a faster cure. Sanding time will be 60-90 minutes dependent upon ambient temperature.

PVA can be used on top of the clear coat (rather than PATCHAID<sup>®</sup>) as a barrier to give full surface cure. Patches using the PVA can be sanded in about 2 hours.

Also see PB-2, Patching Data Sheet.

## 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 Arkema Luperox<sup>®</sup> DDM-9 catalyst. Norac NOROX MEKP-9 and NOROX MEKP-9H, Akzo Nobel CADOX L-50a and CADOX D-50 are expected to yield similar performance. Arkema Luperox<sup>®</sup> DHD-9, NOROX MEKP-925 and NOROX MEKP-925H, and Chemtura HP-90 may yield slightly shorter gel and cure times.

The recommended catalyst range is 1.5% to 2.5%. Ideal catalyst level is 2.0% at 77°F. Do not exceed 2.5%, nor fall below 1.5% catalyst for proper cure.

A typical patch will be ready to sand in approximately 1-2 hours under ideal conditions. Factors that will affect sanding time include: age of materials; gel and cure of the gel coat used; temperature of air, part and material; humidity; air movement; and catalyst, both amount and type.

Do not make patches when temperature conditions are below 70°F, as curing may be adversely affected.

## Precautions

Always shake or mix before using. This assures a uniform mixture that will perform the same, from the first patch to last.

Secure the lid after each use. An open container will lose styrene and pick up contaminations.

Catalyzed masses get very hot as they cure. CCP therefore recommends excess catalyzed patching materials be placed in a bucket of water.

Using a heat source, such as heat gun or infrared lights, to speed cure takes special care:

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1. Use the heat source only where it will not be a fire hazard. Electrical appliances are an ignition source around flammable materials including acetone and styrene containing products.
2. The spray patch must be gelled and partially cured; wait approximately 15-30 minutes before applying heat. Ungelled patches are a fire hazard. In addition, the heat source will start gel and cure from the surface down. This can produce unacceptable results.
3. Heat will speed up cure, but it must be done right for best results. The patch needs to be heated slowly and evenly.
  - a. If heated too fast, only the surface will be cured. This can result in unacceptable patches.
  - b. If the temperature is too high, the color of the patch may be unacceptable. Generally, surface temperature should be just slightly warm to the touch. This is about 100-120°F and is sufficient to speed cure.
4. Use of heat can cause additional surface distortion and fiber pattern near the patched area.

### **Storage**

Uncatalyzed, these products have a usage life of 60 days from date of shipment from CCP when stored at 73°F or below in closed, factory-sealed, opaque containers and out of direct sunlight. The usage life is cut in half for every 20°F over 73°F.

### **Data Sheets/MSDS**

CCP data sheets and MSDS's are available in printable format at [www.ccpcompositesus.com](http://www.ccpcompositesus.com).

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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.

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