# Product Data

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# B-1809
# CLEAR VE HYBRID TOOLING GEL COAT

The B-1809 Clear VE Hybrid Tooling Gel Coat is designed for applications where the high HDT and extraordinary chemical/solvent resistance noted in this family of Gel Coats are required. It is often used as a surface coat over the B-9050 Aluminized VE Tooling Gel Coat to protect the surface from ammonia attack from the release agent system. The 150°C. HDT of the B-1809 Gel Coat coupled with the heat conductivity of the B-9050 Aluminized product provides a superior mold with a long life expectancy.

The superior air-release system makes this product extremely porosity resistant resulting in an almost impervious mold surface.

## TYPICAL PROPERTIES @ 77° F (25°C)

**UNCATALYZED**

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|---|---|
| Weight/Gallon: | 8.7-8.9 Pounds |
| Specific Gravity: | 1.05-1.07 |
| Viscosity, Brookfield, 6 RPM | 8,000 – 10,000 cps |
| 60 RPM | 1,600 - 2,000 cps |
| Shelf Life: | 2 months minimum in sealed container maintained at less than 80°F. |

**CATALYZED** (2% MEKP* @ 77°F.)

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|---|---|
| Gel time, 100 gram mass: | 20 – 25 Minutes |
| Gel time, 20-mil film: | < 45 Minutes |
| Cure to Laminate, 20-mil film: | < 60 Minutes |

*NORAC MEKP-925H, 100 gram mass

## APPLICATION

HK Research Tooling Gel Coats are pre-promoted and thixotropic as supplied. These gel coats should be applied only on properly prepared surfaces. All experienced mold makers understand that care in the preparation of the plug or pattern is essential to producing a good mold. We suggest that the gel coats be applied in multiple passes of the spray gun in order to slowly build up the desired thickness. It is recommended that only 3-5 mils be applied with the initial passes of the spray gun.

The "several passes" technique will keep air entrapment at a minimum and result in a "pin hole and porosity free" film. A film thickness of 20-25 mils should be applied in order to obtain maximum mold life. HK Research Tooling Gel Coats are formulated to provide a rapid gel and cure time at a nominal 2% MEKP. Vinylester resins do require special catalyst systems to avoid gassing and pinholing of the gel coat surface. Our experience has shown that a "low water/low hydrogen peroxide catalyst" such as NORAC MEKP-925H will provide the optimum in pinholing resistance. Typical gel time of B-1809 with 2% NORAC MEKP-925H @ 77$^{o}$F is 18-22 minutes.

It is essential that the mold temperature and ambient air temperature, as well as the material temperature, be within a temperature range of 65$^{o}$F to 80$^{o}$F for best results. Further assistance with particular problems and/or applications can be obtained from the HK Research Corporation Technical Service Laboratories at 1-800-334-5975.

It is suggested that the catalyst concentration used in the application of HK Research Tooling Gel Coats not exceed 2.5% or fall below 1.8% to retain maximum properties. The recommended range for the catalyst concentration within the applied film is 1.8% to 2.2% at 77$^{o}$F.

Under normal conditions the gel coat is ready to "lay up" in 1 hour or ready for the “second coat” of B-9050 or other tooling Gel Coat. 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 20 to 25 mils is recommended if a “second coat” is not being used, to provide for good cure, and performance properties. These products should not be used when the temperature conditions, both mold and ambient, are below 65$^{o}$F as the curing may be adversely affected.

## 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.

***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.***

## SAFETY CONSIDERATIONS

HK Research Tooling Gel Coats are based on a resin system, 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 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