Product Data

TOOLING GEL COATS

Isophthalic Tooling Gel Coats are designed to provide the hard, durable, high-gloss surface required in a superior grade polyester tool. The toughness and chemical resistance of these tooling gel coats will develop within 24 - 48 hours after lamination and removal from the master or plug. This rapid development of physical properties allows the mold builder to develop the high-gloss, mirror-like finish required in polyester molds.

Tooling Gel Coats are available in four standard colors--orange, red, black and gray, as well as clear.

TYPICAL PROPERTIES OF TOOLING GEL COATS
Weight per gallon, 77°F/25°C.: 8.9 – 9.2
Specific Gravity, 77°F/25°C.: 1.07 – 1.11
Viscosity, Brookfield, 77°F/25°C.,
6 rpm: 8,000 – 14,000cps
60 rpm: 1,500 – 2,600cps
Thixotropic Index: 5.0 – 6.5
Shelf Life: Minimum of 2 months
* Gel Time, 100 gram mass @ 77ºF/25°C
2% DDM-9 10 - 22 mins.
Barcol hardness, 1 hour
30 gram Qt. lid casting: 40 - 45
Heat Distortion Temperature (264psi) 220º F/104.4°C minimum
Recommended initiators are Cadox L-50a, and DDM-9.

Product Designation
Clear G-1322
Orange B-4002
Red B-4008
Black B-3005
Gray B-9005

APPLICATION

Polyester 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. Tooling Gel Coats are formulated to provide a rapid gel and cure time at a nominal 2% MEKP. At the present time we recommend that applicators use a "low water/ low hydrogen peroxide containing initiators" such as Cadox L-50a or DDM-9 to provide the optimum in porosity resistance. It is essential that the mold temperature and ambient air temperature, as well as the material temperature, be within a temperature range of 65°F/18.3°C to 80°F/26.6°C for best results.

It is suggested that the initiator concentration used in the application of Standard Series Isophthalic Based Tooling Gel Coats not exceed 2.5% or fall below 1.8% to retain maximum properties. The recommended range for the initiator concentration within the applied film is 1.8% to 2.2% at 77°F/25°C.

Under normal conditions the gel coat is ready to "lay up" in 1 to 2 hours. The "time to laminate" is dependent on the room temperature, humidity and air movement, as well as the initiator 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/18.3°C as the curing may be adversely affected.

MIXING
Prior to removal from the shipping container and initiation, 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
Isophthalic Tooling Gel Coats are based on a resin that 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 initiators may cause burns to eyes and skin. Avoid contact with 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.