



## Technical Data

LAMINATING  
EPOXY

# M1019/224

Black Epoxy Surface Coat

ADHESIVES

PROCESS  
EQUIPMENT

The M1019/224 epoxy surface coat is formulated for use as a mold surface coat. This coating has very good hardness and can be buffed to provide a glossy mold surface. This combination can be applied with a brush or roller and exhibits good hiding characteristics with one 8 to 12 mil coating. A minimum of 6 to 8 mils is necessary to prevent fisheyes on the plug surface. This product is formulated to work with polymer mold release systems as well as traditional mold wax. Test the surface coat on the wax you intend to use as there will be some differences in surface energy and resistance to surface imperfections. Additional coats can be applied if desired once the first coat has cured to a stable tacky state, usually within 45 minutes at room temperature.

### MIXING

Combine the M1019 Resin with PRO-SET 224 Hardener following the ratios by weight or volume shown in the table. Stir the mixture thoroughly and transfer to a roller pan or brush apply directly to the plug or mold surface.

### APPLICATION

The M1019/224 mixture will get progressively more tacky so any rolling or tipping should be completed within 15 minutes at room temperature. A laminate skin coat can be applied between 1.5 hours and 3 hours at room temperature (72°F) with no surface prep necessary. If this overcoat window is exceeded and the surface is hard, scrub the surface with a Scotchbright® pad and water, then wipe dry with paper towel before continuing with the laminate process.

### COVERAGE

Coverage at 10 mils is approximately 150 sq. ft. per mixed gallon of resin and hardener.

### CURING

The mixture will initially cure to a slightly brittle B-stage. The mixture will reach an acceptable degree of cure for some applications with a room temperature cure for 2 weeks. Lower temperatures extend cure times and higher ambient temperatures shorten cure time. Elevated temperature post cure of 100° to 180°F is recommended for the mixture to reach the higher properties available.

We recommend building sample panels using proposed materials and manufacturing processes to confirm working and curing characteristics under your shop conditions.

### HANDLING CHARACTERISTICS *(Not for specification purposes)*

Property	Mixed Resin/Hardener
Density .....	10 lb/gal
Viscosity @ 72°F (ASTM D-2393-80) .....	7850 cps

Mix Ratio (M1019 Resin:224 Hardener)	Target	Acceptable Range
by weight .....	100:26.8	100:28.3 to 100:24.0
by volume .....	100:30.7	100:32.3 to 100:27.4

<b>Pot Life (ASTM D-2427-71)</b>	<b>100g</b>
@72°F .....	20 min

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## LAMINATING EPOXY – PHYSICAL PROPERTIES

# M1019 Resin/224 Hardener

Physical Property	Test Method	RT x 15 hr +	RT x 15 hr +
		125°F x 16 hr	180°F x 8 hr
Hardness (Shore D)	ASTM D-2240	87	88
Compression Yield (psi)	ASTM D-695	18,253	18,344
Tensile Strength (psi)	ASTM D-638	9,249	8,835
Tensile Elongation (%)	ASTM D-638	1.5	1.5
Tensile Modulus (psi)	ASTM D-638	8.26E+05	7.63E+05
Flexural Strength (psi)	ASTM D-790	15,648	16,883
Flexural Modulus (psi)	ASTM D-790	6.91E+05	6.36E+05
Heat Deflection Temperature (HDT) (°F)	ASTM D-648	164	198
Onset of Tg by DSC (°F) **		164	195
Ultimate Tg by DSC (°F) **		195	195
Izod Impact, notched (Ft-lb/in)	ASTM D-256	0.46	0.46

\*\* Determined using a Differential Scanning Calorimeter (DSC).

Value reported is the onset of the glass transition

Test Specimens were neat epoxy (without fiber reinforcement)

Typical Values; not to be construed as specification

November 2008