



STANDARD MEKP PRODUCTS

Solutions of Methyl Ethyl Ketone Peroxide in Phlegmatizer

Norox® MEKP (Methyl Ethyl Ketone Peroxide) products are used primarily for the cure of promoted unsaturated polyester and vinyl ester resins at ambient temperatures. These standard products are formulated to meet the rigorous gel and cure performance demanded by even the most discriminating fabricators.

TYPICAL PROPERTIES

	NOROX®					
	MEKP-9	MEKP-9H	MEKP-900	MEKP-925	MEKP-925H	MEKP-30
Active Oxygen, %	8.9 - 9.0	8.9 - 9.0	8.9 - 9.0	8.9 - 9.0	8.9 - 9.0	5.4 - 5.5
Form	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Color	◀ Water white ▶					
Specific Gravity @ 25/4°C	1.1	1.1	1.1	1.1	1.1	1.15
Viscosity, cps @ 25°C	15 - 16	15 - 16	15 - 16	15 - 16	15 - 16	18
Flash Point (Seta C.C.), min	◀ 170°F ▶					
Hydrogen Peroxide, %	0.8 - 1.0	0.4 - 0.6	1.8 - 2.0	1.2 - 1.4	0.1 - 0.4	0.5 - 0.6
Monomer / Dimer Ratio	Hi / Lo	Hi / Lo	Hi / Lo	Med / High	Med / High	Hi / Lo
Soluble in	◀ Oxygenated Organic Solvents ▶					
Insoluble in	◀ Water ▶					

PRODUCT DESCRIPTIONS

NOROX® MEKP-9 — The workhorse of the Norac line. MEKP-9 gives consistent room temperature performance with both resins and gel coats. A reliable product of remarkable purity, MEKP-9 assures quality in almost every system.

NOROX® MEKP-900 — The high hydrogen peroxide level in this product can offer faster gel times at low ambient temperatures in most resin systems. MEKP-900 is not recommended for use with gel coats without extensive testing.

NOROX® MEKP-925 — High MEKP dimer content gives excellent performance in most vinyl ester resins. MEKP-925 also performs well when used with general purpose ortho- and isophthallic resins. MEKP-925 should be considered when one initiator is desired for use with most all resin types.

NOROX® MEKP-9H — This product features a reduced level of hydrogen peroxide. MEKP-9H is particularly useful in critical gel coat applications. Another area of application is in heated, continuous mixing systems for polymer concrete and cultured marble.

NOROX® MEKP-30 — A reduced strength version of MEKP-9, MEKP-30 provides the fabricator more accurate metering control in hot weather or with highly reactive resin systems.

NOROX® MEKP-925H — Specifically formulated to reduce gas generation in critical corrosion applications for vinyl ester resins in gel coats, barrier coatings, and corrosion resistant structures. The low hydrogen peroxide level in MEKP-925H often requires that the resin promotion system be modified for some resins to obtain reasonable gel times.

APPLICATION

Most resins are supplied prepromoted. However, if promoter (or accelerator) is required, it should be mixed thoroughly into the resin before the peroxide initiator is added. Generally, when MEKP is used, the primary resin promotion system will be an organometallic salt such as cobalt naphthenate or octoate at levels between 0.05 to 0.5% of 6% metal content solution (also available as 12% solutions). Tertiary amines, such as dimethyl aniline (DMA), can also be used in combination for enhanced promotion.

Typical use levels of MEKP vary between 1.0 and 2.5%, based on weight of resin. Gross under-use (less than .75%) or over-use (over 3.0%) can result in poorly cured resin and a less than optimum end product. All MEKP addition, whether measured by hand or mechanized methods, should be done accurately and carefully. When automated equipment is used, frequent calibration of the MEKP addition rate is highly recommended.

A single MEKP initiator formulation cannot provide optimum results in all resin systems. The interaction between the initiator and proprietary inhibitor/promoter systems used by the various resin manufacturers is complex and varies from resin to resin. As a result, the gel and cure characteristics provided by a particular initiator formulation can vary greatly even in resins of the same basic composition from different resin suppliers. Evaluation of each MEKP in each resin intended for use is absolutely essential before full-scale manufacturing is attempted. Norac and/or your Norac distributor will be happy to supply needed samples and technical assistance in choosing the Norox® MEKP product best suited to the intended application.

The following table illustrates the effects that various standard Norox® MEKP products have on the same resin system.

TABLE I
Effects of Different MEKP Formulations
 Resin: Standard ortho laminating @ 1.25% MEKP
 Temperature: 25°C/77°F
 Cure defined as 10 (935 Impressor)

Norox® Product	TIME TO		CURE DEVELOPMENT			
	Gel (min)	Cure (min)	2 hr.	3 hr.	4 hr.	24 hr.*
MEKP-9	11.0	68	36	55	1*	31
MEKP-9H	13.0	66	36	56	3*	31
MEKP-900	9.7	71	36	56	1*	31
MEKP-925	15.0	91	15	49	60	31
MEKP-925H	17.5	81	11	50	61	29
MEKP-30	19.5	124	0	35	64	29

* 934 Impressor Reading

APPLICATION CONSIDERATIONS

When using an MEKP, or any type of peroxide initiator, the fabricator should keep in mind that more than just the type and amount of initiator affects the gel, cure and ultimate quality of the finished part. Two very important considerations are the operating environment, primarily temperature, the size and thickness, or mass, of the part being fabricated.

TEMPERATURE

The temperature of the shop is not the only factor. Resin and mold temperatures will also affect gel and cure. Table II and Figure A demonstrate this temperature effect.