KEROX
CHEMICALS PRIVATE LTD.

ISO9001 REGISTERED COMPANY
UKAS QUALITY MANAGEMENT 015
ANSI-RAB QMS ACCREDITED

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Kerox ME-50 MEKP Catalyst
Kerox C-20 Accelerator

Kerox ME-50 MEKP Catalyst

Composition	:	Methyl Ethyl Ketone Peroxide in phthalate plasticizer.
Appearance	:	Clear, colorless, slightly viscous liquid.
Odor	:	Sharp, pungent.
Peroxide Content (%)	:	50 ± 3
Active Oxygen (%)	:	9 ± 0.5
Specific Gravity at 25° C	:	1.08
Critical Temperature	:	80° C
Flash Point	:	Above 60° C
Solubility	:	Slightly soluble in water; freely soluble in most organic solvents.
Shelf Life	:	Not less than 3 months if stored below 25° C.
Storage Conditions	:	Store in a cool place and do not expose to direct sunlight; keep in original containers and vent periodically; avoid contamination; store large quantities in an isolated building.
Standard Packing	:	1 Liter, 5 Liter, 30 Liter, 35 Liter Plastic Containers.

Kerox C-20 Accelerator

Composition	:	Cobalt Octoate dissolved in a hydrocarbon solvent.
Appearance	:	Violet colored, volatile liquid.
Specific Gravity at 25° C	:	0.8
Flash Point	:	45° C
Shelf Life	:	More than 12 months if stored in closed metal containers.
Storage Conditions	:	Do not store along with peroxide containers.
Standard Packing	:	1 Liter, 5 Liter, 30 Liter, 35 Liter Plastic Containers.

ROOM TEMPERATURE (25° - 45° C) CURING OF POLYESTERS

The quantity of Kerox ME-50 required for room temperature curing of unsaturated polyester resins depends on (1) Reactivity of the resin (2) Quantity of Kerox C-20 Accelerator (3) Temperature of processing and (4) Fillers and Pigments.

For most formulations, the optimum quantity of Kerox ME-50 varies from 1% to 3% by volume on the weight of the resin, although a minimum of 0.5% can be used if a slow rate of polymerization is required, as in casting applications. Any quantity below 0.5% may cause permanent under cure of the resin.

SAFETY INSTRUCTIONS

Review MSDS documents: *Kerox-MSDS-ME-50 and Kerox-MSDS-C-20*. Never add Kerox ME-50 directly to Kerox C-20, metals, acids, or bases, since the mixture is flammable.

Effect of Concentration

The table below shows the effect of varying quantities of Kerox ME-50 and Kerox C-20 on the gel time of polyester resins.

Kerox ME-50 by Volume on weight of resin	*Gel Time in Minutes at 25° C		
	Kerox C-20 by Volume on weight of resin		
	1.0 %	1.5 %	2.0 %
1.0 %	60	36	24
1.5 %	40	24	16
2.0 %	30	18	12

Effect of Temperature

The table below shows the effect of temperature on gel time of the polyester resin.

Kerox ME-50 by Volume on weight of resin	Kerox C-20 by Volume on weight of resin	*Gel Time in Minutes at			
		25° C	30° C	35° C	40° C
1.0 %	1.0 %	60	45	30	22
1.5 %	1.5 %	24	18	12	9

FRP MOULDING BY WET LAY-UP

Kerox ME-50 is the most widely used catalyst for curing unsaturated polyester resins in the fabrication of Fiberglass Reinforced Plastics (FRP), since 1968.

For gel coat formulations, in FRP molding, the quantity of Kerox ME-50 and Kerox C-20 should be so adjusted that the resin gels to a tacky condition within about 20-30 minutes after application. Prolonged gel time may cause under cure of the resin due to styrene loss. At an ambient temperature of 25° C, 2-3% Kerox ME-50 with 2-3% of Kerox C-20 will give satisfactory gel time with most types of resins. At higher temperatures, the quantity of Kerox C-20 may be reduced to improve pot life of the resin. Because gel coats are relatively thin, it is important that the quantity of catalyst should not be reduced below 2% to ensure proper curing, especially when it is pigmented.

For laminating applications, 1-1.5% Kerox ME-50 with 1-1.5% Kerox C-20 will give satisfactory gel time at 25° C. At higher temperatures, the quantity of Kerox C-20 should be reduced to obtain a convenient pot life of the resin for processing. An ideal balance of Kerox ME-50 / Kerox C-20 is obtained when the resin gels within 40-60 minutes after application, which will give a neat 20-30 minutes pot life for the resin.

MIXING INSTRUCTIONS

Recommended practice is to first add Kerox C-20 to the resin, along with fillers and Kerox Pigments, and then to mix well. Small convenient lots of the pre-accelerated resin can then be catalyzed using Kerox ME-50 prior to use.

* Data was obtained under controlled laboratory conditions and is intended to serve as a guide line only. Results may vary in real world conditions.

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