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Marketing, Inc.

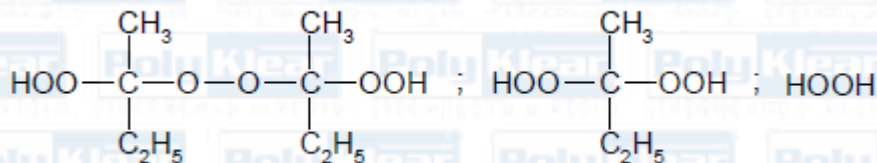
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Poly Klear
FIBERGLASS + RESIN

TECHNICAL DATA SHEET

KLEARNOX-100

PRODUCT DESCRIPTION Methyl ethyl ketone peroxide, in solvent mixture



CAS No. : 1338-23-4

SPECIFICATIONS
Appearance : Clear and colorless liquid
Total active oxygen : 9.8-10.0%

CHARACTERISTICS
Density, 20°C : 1.120 g/cm³
Flash point: : 37°C (closed cup)
 > 63°C (open cup)

STORAGE Due to the relatively unstable nature of organic peroxides, a loss of quality can be detected over a period of time. To minimize the loss of quality, it is recommended that the maximum storage temperature (T_{max}) be:

For Klearnox-100 $T_{\text{max}} = 25^\circ\text{C}$
 $T_{\text{min}} = -10^\circ\text{C}$

When stored under the recommended storage conditions, Klearnox-100 will remain within the specifications for a period of at least 3 months after delivery.

THERMAL STABILITY Organic peroxides are thermally unstable substances, which may undergo self-accelerating decomposition. The lowest temperature at which self-accelerating decomposition of a substance in the original packaging may occur is the Self-Accelerating Decomposition (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

For Klearnox-100 SADT = 55°C

The Heat Accumulation Storage Test is a recognized test method for the determination of the SADT of organic peroxides (see Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria – United Nations, New York and Geneva).

MAJOR DECOMPOSITION PRODUCTS Carbon dioxide, water, acetic acid, formic acid, propanoic acid, methyl ethyl ketone

PACKAGING AND TRANSPORT The standard packaging is a 20L HDPE can for 20kg peroxide solution.

Both packaging and transport meet the international regulations. For the availability of other packed quantities, contact your sales representative.

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Klearnox-100 is classified as Organic Peroxide Type D; liquid; Division 5.2; UN 3105, PG II.

SAFETY AND HANDLING

Keep containers tightly closed. Store and handle Klearnox-100 in a dry well-ventilated place away from sources of heat or ignition and direct sunlight. Never weigh out in the storage room.

Avoid contact with reducing agents (e.g. amines), acids, alkalis and heavy metal compounds (e.g. accelerators, driers, and metal soaps).

Please refer to Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of Klearnox-100. This information should be thoroughly reviewed prior to acceptance of this product.

APPLICATIONS

Klearnox-100 is general-purpose methyl ethyl ketone peroxide (MEKP) for the curing of unsaturated polyester resins in the presence of a cobalt accelerator at room or elevated temperatures.

The curing system of Klearnox-100/cobalt accelerator is developed for general-purpose GRP- and non-GRP applications such as the curing of laminating resins and castings.

Practical experience throughout the years has proven that for marine applications, a special MEKP with low water content and without polar compounds is demanded in order to prevent from osmosis and other problems. Klearnox-100 is the MEKP advised for this application.

For room temperature application, it is necessary to use Klearnox-100 together with a cobalt accelerator.

Dosing

Depending on working conditions, the following peroxide and accelerator dosage levels are recommended:

Klearnox-100	1-4%
Accelerator	0.5-1%

Cure characteristics

In a high reactive standard orthophthalic resin in combination with accelerator, the following application characteristics were determined:

Gel times at 20°C

2% Klearnox-100 + 0.5% Accelerator	13 minutes
2% Klearnox-100 + 1% Accelerator	7 minutes

Cure at 4mm laminates at 20°C

4mm laminates have been made with 450 g/m² glass chopped strand mat. The glass content in the laminates is 30% (w/w)

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The following parameters were determined:

- Time-temperature curve
- Speed of cure expressed as the time to achieve a Barcol hardness (934-1) of 0-5 and 25-30, respectively.
- Residual styrene content after 24 hours at 20°C and a subsequent postcure of 8 hours at 80°C

	Gel time (min)	Time to peak (min)	Peak Exotherm (°C)
2% Klearnox-100 + 0.5% Accelerator	14	30	51
2% Klearnox-100 + 1.0% Accelerator	6	21	74

	Barcol		Res. Styrene	
	0-5 (h)	25-30 (h)	24h 20°C (%)	+ 8h 80°C (%)
2% Klearnox-100 + 0.5% Accelerator	<1	4	6.5	0.5
2% Klearnox-100 + 1.0% Accelerator		<1	4.9	0.3

Pot life at 20°C

2% Klearnox-100	22h
4% Klearnox-100	13h

Solubility

Klearnox-100 is miscible with phthalates and slightly miscible with water.

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