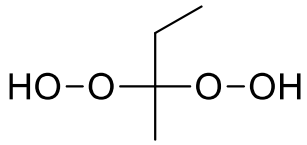
CUROX®M-102

Methyl ethyl ketone peroxide
CAS#1338-23-4
Colourless liquid mixture

Structural Formula



Description

Colorless liquid consisting of methyl ethyl ketone peroxides, phlegmatized with an aliphatic ester. This ketone peroxide is suitable as a radical initiator for curing unsaturated polyester resins.
Main application: Curing of large moulded parts at ambient temperature in combination with cobalt accelerators.

Technical Data

Appearance	Colourless liquid
Desensitising agent	Aliphatic ester
Active oxygen (AO)	ca. 8.6 % w/w
Density at 20 °C	ca. 1.01 g/cm^3
Viscosity at 20 °C	ca. 13 mPa·s
Miscibility	Immiscible with water; miscible with ester and UP/VE-resins
Critical temperature (SADT)	ca. 60 °C
Cold storage stability	Liquid to below -25 °C
Recommended storage temperature	below 30 °C ●
Storage stability as from date of delivery	6 months

Standard Packaging

22.5 kg in HDPE canisters

Application

POLYESTER CURING:

Curing agent for mainly vinyl ester resins, but also UP resins (*e.g. ortho*- and *iso*-phthalic acid resins) at ambient temperature in combination with cobalt or cobalt/amine accelerators. The "storage time" (gel time of resin + peroxide) is usually only a few hours and depends on temperature and resin type. The "pot life" (gel time of resin + peroxide + accelerator) is relatively short, but can be extended by adding an inhibitor (*e.g.* Inhibitor TC 510).
This product does not contain any diacetone alcohol, which is particularly undesirable in drinking water applications.

CURING PERFORMANCE:

The moderate heat development results in a stress-relieved curing. Despite this, the residual styrene and TOC content are low. At temperatures below 20 °C, the curing times increase significantly. This product has the lowest H_2O_2 content in our MEKP portfolio. Therefore, it is recommended for vinyl ester resins. In UP resins the curing performance is very slow and it should be use a more active grades (*e.g.* CUROX®M-312 or CUROX®M-402).

PROCESSING METHODS:

The product can be used in many different applications and is suitable for curing molded parts after different working processes, *e.g.* hand lamination, spray lay-up, centrifugal casting, filament winding, casting of resins, and surface coatings (putties, fillers, gelcoats and topcoats).

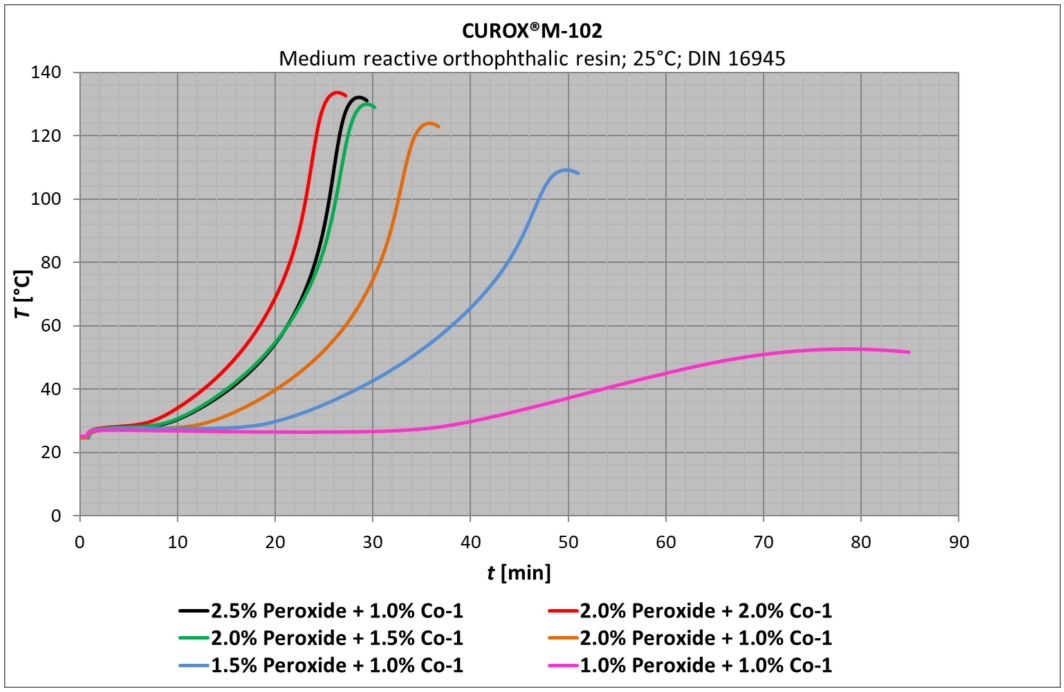
Decomposition Products

Possible detectable decomposition products: Methyl ethyl ketone, ethane, acetic acid

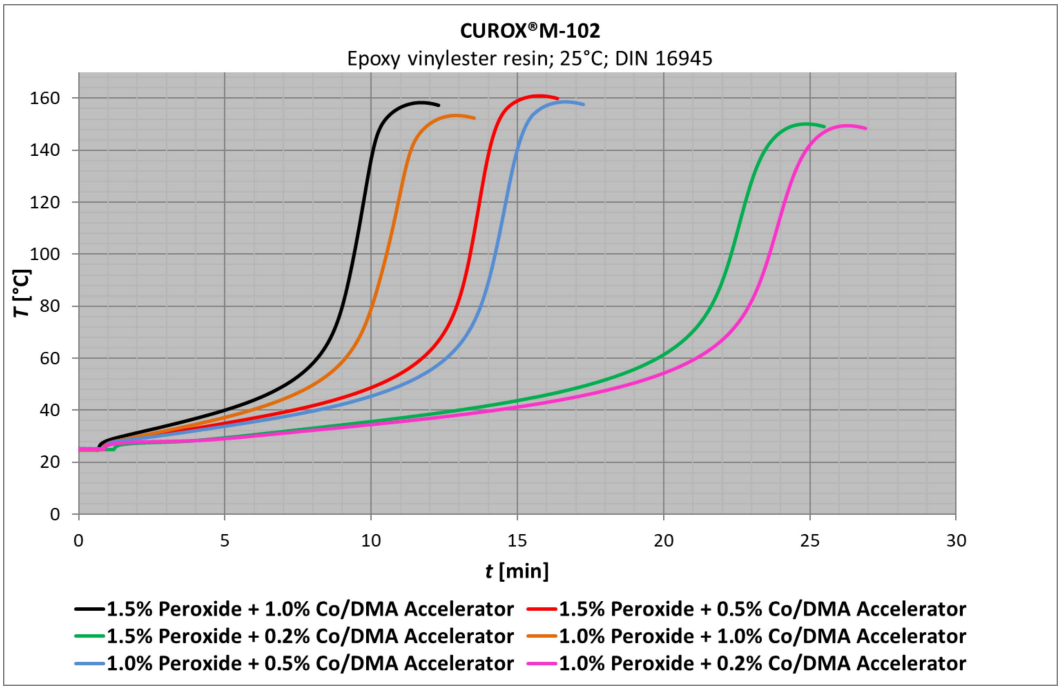
Storage

Avoid any source of heat, light, humidity and protect the product from impurities. Keep within safe temperature limits.

Measurements



Formulation (parts per weight)							
Resin		100	100	100	100	100	100
CUROX®M-102	[Vol-%]	2.5	2.0	2.0	2.0	1.5	1.0
Co-1	[Vol-%]	1.0	2.0	1.5	1.0	1.0	1.0
Curing Data							
Gel time 25 - 30 °C t_{gel}	[min]	9.7	7.5	9.4	13.6	20.3	40.4
Gel time 25 - 35 °C t_{gel}	[min]	12.9	10.5	12.6	17.3	24.9	47.2
Curing time t_{max}	[min]	28.6	26.4	29.4	35.8	49.7	78.6
Peak temperature T_{max}	[°C]	132	133	130	124	109	52



Formulation (parts per weight)							
Resin		100	100	100	100	100	100
CUROX®M-102	[Vol-%]	1.5	1.5	1.5	1.0	1.0	1.0
Co/DMA Accelerator	[Vol-%]	1.0	0.5	0.2	1.0	0.5	0.2
Curing Data							
Gel time 25 - 30 °C t_{gel}	[min]	1.5	2.3	5.5	2.1	2.7	5.9
Gel time 25 - 35 °C t_{gel}	[min]	3.4	5.0	9.5	4.2	5.6	10.4
Curing time t_{max}	[min]	11.7	15.7	24.8	12.9	16.6	26.3
Peak temperature T_{max}	[°C]	158	160	150	153	159	149

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