

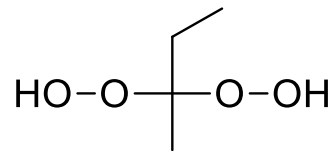
# Technical Data Sheet (TDS)

NOROX®ENP-90  
Thermoset (TS)

## NOROX®ENP-90

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

### Structural Formula



### Description

Colourless, mobile liquid, consisting of peroxides based on methyl ethyl ketone, essentially desensitised with aliphatic ester. This ketone peroxide is used as a radical initiator in the curing of unsaturated polyester resins.

**Main application:** Curing of moulded parts at ambient temperature in combination with cobalt accelerators.

**Advantages:** High efficiency with special pre-accelerated and stabilised resin types.

### Technical Data

Appearance	colourless liquid
Desensitising agent	aliphatic ester
Active oxygen (AO)	ca. 8.6 - 9.2 % w/w
Hydrogen peroxide	ca. 2.6 % w/w
Density at 20 °C	ca. 1.01 g/cm <sup>3</sup>
Viscosity at 20 °C	ca. 13 mPa·s
Refractive index at 20 °C	ca. 1.431
Flash point	ca. 57 °C
Critical temperature (SADT)	ca. 60 °C
Cold storage stability	ca. -25 °C
Recommended storage temperature	below 30 °C ●
Storage stability as from date of delivery	6 months

### Standard Packaging

5 kg and 22.5 kg in HDPE canisters

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## Application

### **POLYESTER CURING:**

Curing agent for all UP resins at ambient temperature in combination with cobalt accelerators. Especially suitable for resins based on *ortho*- and *iso*-phthalic acid respectively.

Standard dosage level: 1 - 3 % with additional use of 0.5 - 2 % of a 1 % cobalt solution.

"Shelf life" (gel time of resin + peroxide) usually only a few hours, depending on temperature and resin type.

"Pot life" (gel time of resin + peroxide + accelerator) relatively short, but maybe be prolonged by adding Inhibitor TC 510. Thus, the mould release factor ( $f_{MR} = t_{MR}/t_{gel}$ ) can be improved considerably.

### **CURING PERFORMANCE:**

Moderate evolution of heat. Relatively long mould release time, moderate mould release factors. Temperatures below 20 °C prolong curing times considerably, alternatively cobalt / amine accelerators should then be used.

### **PROCESSING METHODS:**

Particularly hand lay-up, spray lay-up, centrifugal casting, filament winding, casting of resins, and surface coatings (putties, fillers, gelcoats and topcoats).

### **SPRAY EQUIPMENT:**

Use spray equipment in accordance with manufacturer's instructions. Ensure all safety devices are operational. Do not clear gun by spraying MEKP into the air.

## Decomposition Products

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

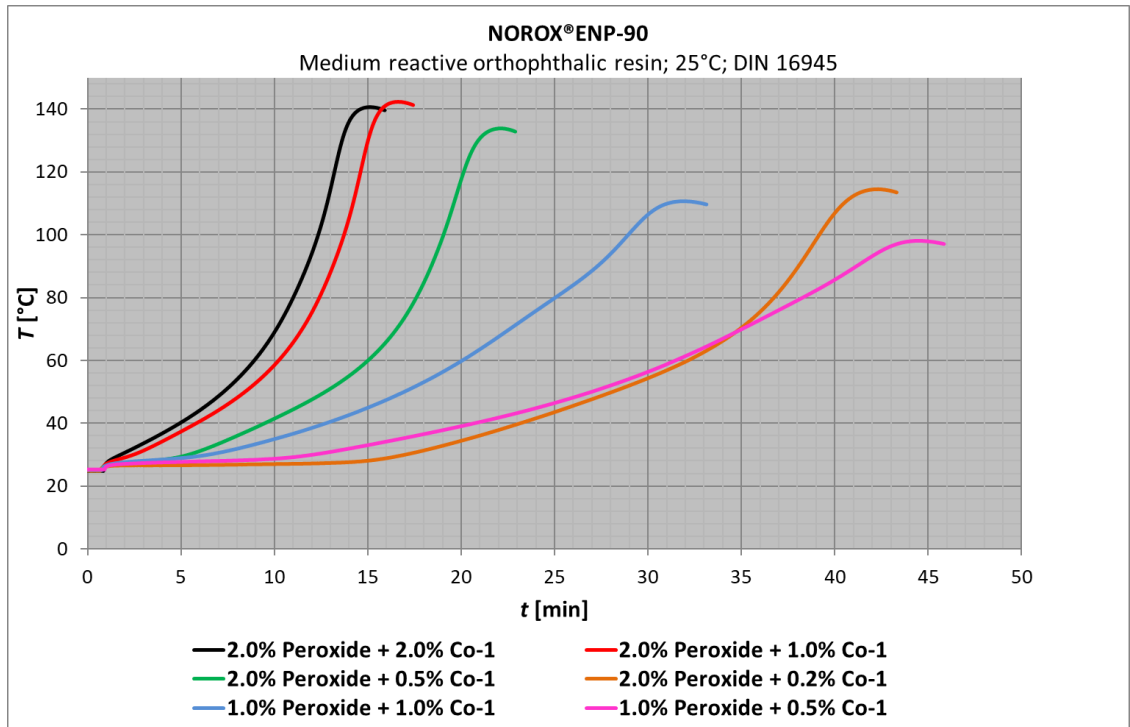
## Storage

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

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## Measurements



### Formulation (parts per weight)

Resin		100	100	100	100	100	100
<b>NOROX®ENP-90</b>	[Vol-%]	2.0	2.0	2.0	2.0	1.0	1.0
Co-1	[Vol-%]	2.0	1.0	0.5	0.2	1.0	0.5
<b>Curing Data</b>							
Gel time 25 - 30 °C $t_{gel}$	[min]	1.8	2.5	5.4	17.0	6.5	12.1
Gel time 25 - 35 °C $t_{gel}$	[min]	3.4	4.2	7.6	20.4	9.8	16.8
Curing time $t_{max}$	[min]	15.1	16.6	22.1	42.3	32	44.3
Peak temperature $T_{max}$	[°C]	140	142	134	115	111	98

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