

Technical Data Sheet (TDS)

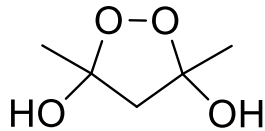
NOROX®PD-40
Thermoset (TS)



NOROX®PD-40

Acetylacetone peroxide
CAS#13784-51-5
Colourless liquid

Structural Formula



Description

Colorless liquid consisting of acetylacetone peroxides phlegmatized with diacetone alcohol. This ketone peroxide is suitable as a radical initiator for curing unsaturated polyester resins.

Main application: Curing of thin-walled molded parts at ambient temperature in combination with a cobalt accelerator.

Technical Data

| | |
|--|------------------------------------|
| Appearance | colourless liquid |
| Desensitising agent | glycols, diacetone alcohol |
| Active oxygen (AO) | approx. 4.1 % w/w |
| Density at 20 °C | approx. 1.1 g/cm ³ |
| Viscosity at 20 °C | approx. 37 mPa·s |
| Miscibility | miscible with alcohols, phthalates |
| Critical temperature (SADT) | approx. 60 °C |
| Cold storage stability | can crystallize below 10 °C |
| Recommended storage temperature | 10 °C to 25 °C ● |
| Storage stability as from date of delivery | 6 months |

Standard Packaging

5 kg and 25 kg in HDPE canisters

Application

CURING OF UNSATURATED POLYESTER RESINS:

Curing agent for UP resins (e.g. *ortho*- and *iso*-phthalic acid resins) at ambient temperature in combination with cobalt 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).

CURING CHARACTERISTICS:

This initiator introduces a strong evolution of heat into the curing system. This results in short demoulding times and a very good demolding factor. Even at temperatures below 20 °C, curing is still relatively quick, especially in combination with Accelerator CA 12 X. Some fillers, color pigments or stabilizers can interfere the curing or prevent it entirely.
NOROX®PD-40 is not suitable for vinyl ester resins.

PROCESSING METHODS:

The product can be used for curing of thin-wall moulded parts using various processes such as hand lay-up, spray lay-up, vacuum and injection moulding (RTM), wet press moulding, centrifugal casting (pipes) and continuous impregnating (corrugated sheets).

Decomposition Products

Possible detectable decomposition products: acetylacetone, carbon dioxide, aliphatic acids

Storage

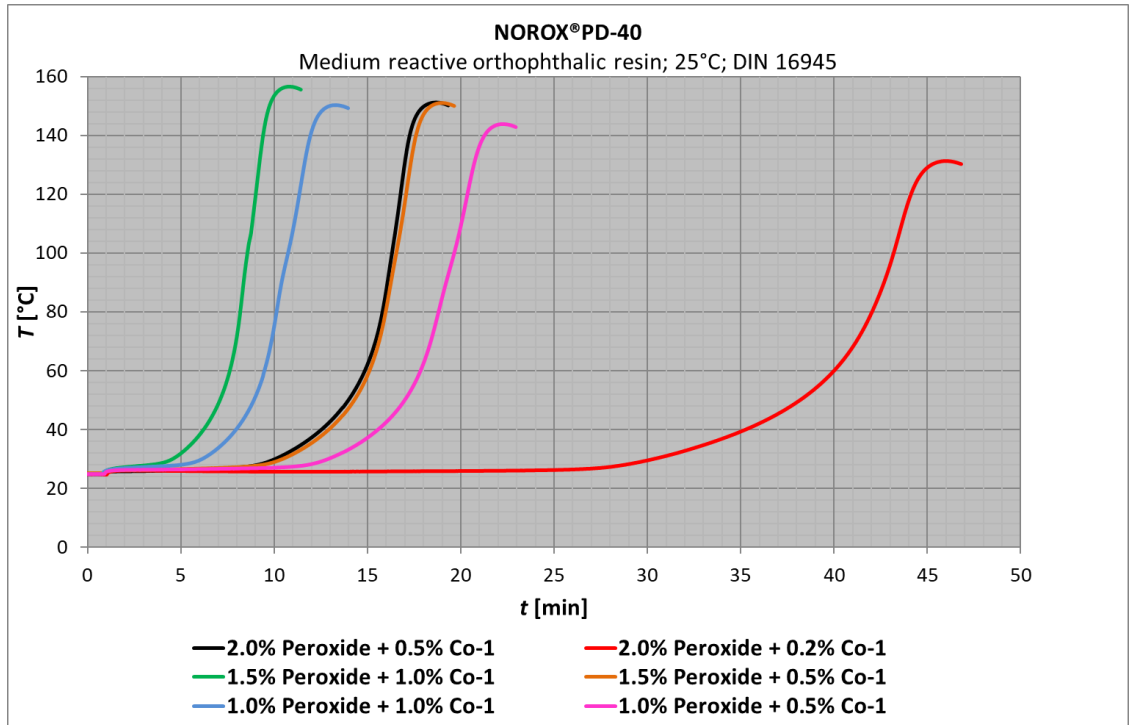
Avoid any source of heat, light, humidity and protect the product from impurities. Keep within safe temperature limits.

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Measurements



Formulation (parts per weight)

| | | | | | | | |
|-------------------------------|---------|------|------|------|------|------|------|
| Resin | | 100 | 100 | 100 | 100 | 100 | 100 |
| NOROX®PD-40 | [Vol-%] | 2.0 | 2.0 | 1.5 | 1.5 | 1.0 | 1.0 |
| Co-1 | [Vol-%] | 0.5 | 0.2 | 1.0 | 0.5 | 1.0 | 0.5 |
| Curing data | | | | | | | |
| Gel time 25 - 30 °C t_{gel} | [min] | 10.1 | 30.3 | 4.6 | 10.5 | 6.2 | 12.9 |
| Gel time 25 - 35 °C t_{gel} | [min] | 11.5 | 33.1 | 5.6 | 11.9 | 7.2 | 14.4 |
| Curing time t_{max} | [min] | 18.7 | 46.0 | 10.8 | 18.9 | 13.3 | 22.2 |
| Peak temperature T_{max} | [°C] | 151 | 131 | 157 | 151 | 150 | 144 |

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