

NOROX[®]PD-40 FRED

Acetyl Acetone peroxide
CAS#13784-51-5
Liquid mixture

Description

NOROX[®]PD-40 FRED is a clear solution of acetyl acetone peroxide (AAP), or 2,4-Pentanedione peroxide in a phlegmatizer. NOROX[®]PD-40 FRED is a very effective polymerization initiator for the room temperature cure of unsaturated polyester resins and gives exceptionally fast cures without significantly affecting gel times in most resin systems. NOROX[®]PD-40 FRED has the added advantage of being a low fire or explosion hazard.

Technical Data

| | |
|--|--|
| Appearance | Clear red liquid |
| Active oxygen | 4.1 ± 0.1% |
| Specific Gravity at 20°C | 1.07 – 1.10 g/cm ³ |
| Flash point (Seta closed cup) | > 65°C (> 149°F) |
| Critical temperature (SADT) | 60°C (140°F) |
| Soluble in | Water, ethers, ketones, alcohols, glycols |
| Slightly soluble in | Aromatic, chlorinated and aliphatic hydrocarbons |
| Recommended storage temperature | 10-25°C |
| Maintenance of activity at 25°C as from date of delivery | 12 months |

Application

NOROX[®]PD-40 FRED is a very effective polymerization initiator for the room temperature cure of unsaturated polyester resins and gives exceptionally fast cures without significantly affecting gel times in most resin systems. Due to the very fast cure of NOROX[®]PD-40 FRED, the exotherm development is most often higher than common MEKP-cobalt curing system, and therefore, not recommended to cure thick laminates in one step. This performance characteristic is especially beneficial in resin transfer moulding (RTM), cast polymers, and other applications requiring fast mould turnaround for production efficiencies.

It is not advisable to use NOROX[®]PD-40 FRED or any other AAP with gelcoats because of risk of yellowing on white gelcoats and due to the polar property of AAP which can cause osmosis effects.

NOROX[®]PD-40 FRED is best suited for singly promoted resins using cobalt promotion alone. Levels of cobalt (naphthenate or octoate in 6% solutions) should be in the range of 0.1 to 0.5%. In some cases, the addition of 0.1% to 0.3% diethyl- or dimethylaniline speeds the curing further and gives extremely high exothermic temperature. The resin inhibitor type and level also has an important effect on the performance of NOROX[®]PD-40 FRED. In general,

high inhibitor levels are usually not desirable, and use of some quaternary ammonium salts can cause significant yellowing of the resin. Also, quaternary ammonium compounds can have an inhibiting effect on the resin system gel- and cure properties.

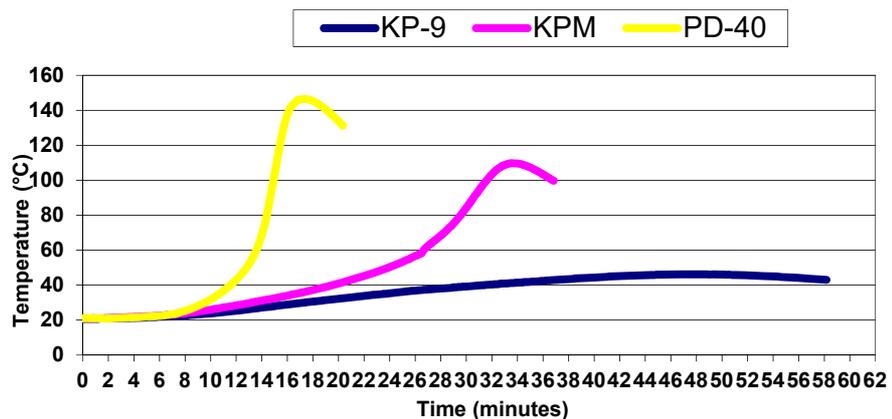
Measurements

A reactivity test with an unsaturated polyester resin gave the following results:

Resin: Orthophthalic polyester Temperature: 21°C
Initiator %:1.0 Accelerator % 1% (1% cobalt)

| Initiator | Gel time min | Time to peak min | Peak exotherm temp °C |
|-------------------------|--------------|------------------|-----------------------|
| NOROX®PD-40 FRED | 8 | 17 | 147 |
| NOROX®KPM | 9 | 34 | 110 |
| NOROX®KP-9 | 11 | 48 | 47 |

Reactivity of Norox® Initiators:



Standard Packaging

The standard package sizes of NOROX®PD-40 FRED are 5 kg (8 lb) and 25 kg (40 lb) polyethylene bottles.

Disclaimer

This information and all further technical advice are reflecting our present knowledge and experience based on internal tests with local raw materials with the purpose to inform about our products and applications. The information should not be construed as guaranteeing specific properties of products described or their suitability for a particular application, nor as providing complete instructions for use. The information implies no guarantee for product and shelf life properties, nor any liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. We reserve the right to make any changes according to technological progress or further developments.

Application and usage of our products based on our technical advice is out of our control and sole responsibility of the user. The user is not released from the obligation to conduct careful inspection and testing of incoming goods in order to verify the suitability for the intended application.

United Initiators
EU
T: +49 89 74422 237
F: +49 89 74422 6237
cs-initiators.eu@united-in.com

United Initiators
Nafta
T: +1 800 231 2702
F: +1 440 323 0898
cs-initiators.nafta@united-in.com

United Initiators
China
T: +86 20 6131 1370
F: +86 139 2503 8952
cs-initiators.cn@united-in.com

United Initiators
Australia
T: +61 2 9316 0046
F: +61 2 9316 0034
cs-initiators.au@united-in.com

www.united-initiators.com