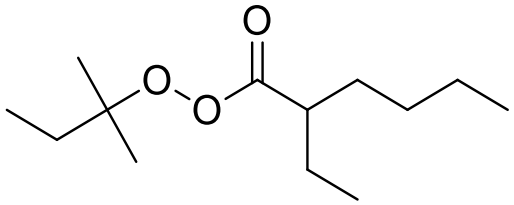
NOROX®411

***tert*-Amyl peroxy-2-ethylhexanoate**
CAS#686-31-7
Colourless liquid

Structural Formula



Description

Colourless, mobile liquid, consisting of technically pure *tert*-amyl peroxy-2-ethylhexanoate. This branched, aliphatic perester is used as a radical initiator in curing unsaturated polyester resins at 70 - 150 °C, possibly in combination with cobalt accelerators.

Technical Data

Appearance	colourless liquid
Assay	ca. 98 % w/w
Active oxygen (AO)	ca. 6.81 % w/w
Density at 20 °C	ca. 0.9 g/cm³
Viscosity at 20 °C	ca. 4.3 mPa·s
Refractive index at 20 °C	ca. 1.433
Flash point	ca. 59 °C
Vapour pressure at 25 °C	< 0.1 mbar
Critical temperature (SADT)	ca. 35 °C
Cold storage stability	below -25 °C
Recommended storage temperature	below 10 °C
Storage stability as from date of delivery	3 months

Standard Packaging

1 gallon bottle
5 gallon Unitainer

Half-life Data

10 h / 1 h / 1 min (benzene, 0.1 mol/L)	72 °C / 91 °C / 130 °C

Technical Data Sheet (TDS)

NOROX®411
Thermoset (TS)

UNITED INITIATORS
driving your success

Application

POLYESTER CURING:
Curing agent for UP resins, possibly in combination with cobalt accelerators.
Temperature range: 70 - 150 °C
Dosage: 1 - 2 %, possibly together with 0.5 - 1 % accelerator Co-1
"Shelf life" (gel time of resin + peroxide) at ambient temperature several weeks, depending on resin type, filler, pigment.
"Pot life" (gel time of resin + peroxide + accelerator) up to several days, depending on temperature and peroxide dosage.
Shelf or pot life can be prolonged considerably by adding 0.1 - 0.3 % inhibitor BC-510.

CURING CHARACTERISTICS:
In the range of 65 - 75 °C ("kick-off" temperature) the curing rate is not very high unless there is a reaction exotherm (*e.g.* within a heat-retaining mould). Short cure times of a few minutes can be achieved only in the optimum temperature range for wet press moulding at 110 - 130 °C.
NOROX®411 reacts faster compared to NOROX®410 (please refer the point measurements).

PROCESSING METHODS:
In particular continuous impregnating (paper laminates), wet or hot press moulding, surface coating with wood varnishes, dripping electrical insulating varnishes with infrared heating.

Decomposition Products

Possible detectable decomposition products: acetone, *tert*-amyl alcohol, ethyl *tert*-amyl ether

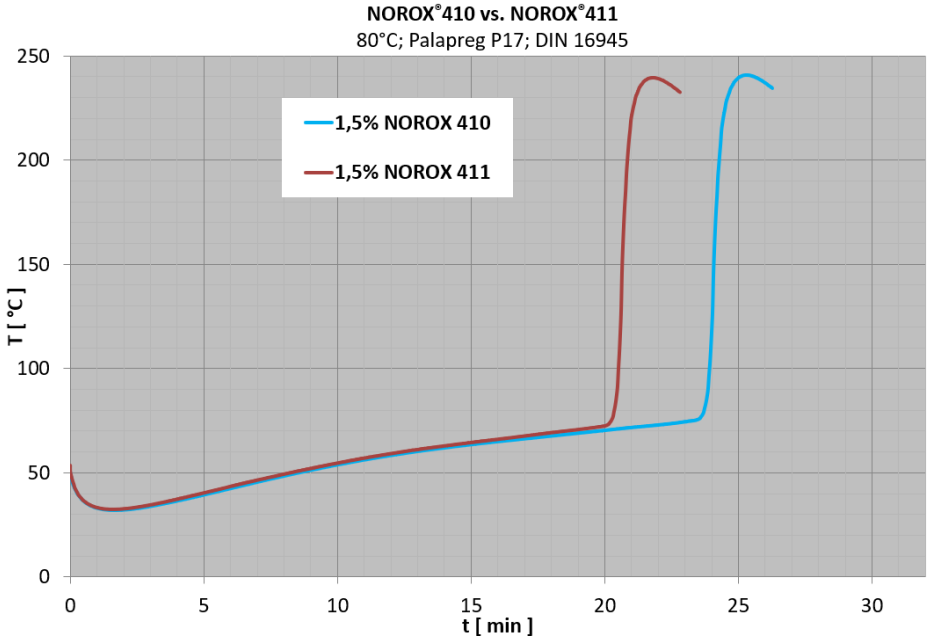
Storage

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

Measurements

ACTIVITY:

NOROX®411 fulfils the requirements of faster curing performance in comparison to the widely used standard grade NOROX®410.



United Initiators
Europe
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