

Technical Data Sheet

Norox[®] AZOX

DESCRIPTION

Norox[®] AZOX is a clear solution of acetyl acetone peroxide (AAP), or 2, 4-Pentanedione peroxide in a phlegmatizer. Norox[®] AZOX is a very effective polymerization initiator for the room temperature cure of unsaturated polyester resins and gives exceptionally fast cure times without significantly affecting gel times in most resin systems. This performance characteristic is especially beneficial in resin transfer molding (RTM), cast polymers, and other applications requiring fast mold turnaround for production efficiencies.

TYPICAL PROPERTIES

Active Oxygen:	4.4% max.
Form:	Liquid
Color:	Water white to straw
Specific Gravity @ 25°/4°C:	1.15
Viscosity:	16.0 cps
Flash point (C.O.C.):	200°F, min.
Flash point (SETA C.C.):	150°F/66°C, min.
Soluble in:	Water, ethers, ketones and alcohols
Slightly soluble in:	Aromatic, chlorinated and aliphatic hydrocarbons

APPLICATION

Norox[®] AZOX is an extremely effective initiator for an accelerated cure without significantly shortening the gel time in many resin systems. Norox[®] AZOX 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 resin further and gives extremely high exothermic cures. The resin inhibitor type and the level also have an important effect on the performance of Norox[®] AZOX. In general, high inhibitor levels are usually not desirable, and some quaternary ammonium salts can cause significantly yellowing of the resin. Also, quaternary ammonium compounds can have an inhibiting effect on the resin system gel and cure properties.

APPLICATION RESULTS

Tables I & II demonstrate results that can be obtained using Norox[®] AZOX compared to a standard MEKP formulation.

TABLE I

Gel & Cure Data – Marble Resin
 10g mass with 1% Peroxide @ 77°F/ 25°C
 Cure defined as 10 (935 Impressor)

	Time (min)			935 / 934 Hardness				
	<u>Gel</u>	Gel to	Peak	<u>1 hr</u>	<u>2 hrs</u>	<u>3 hrs</u>	<u>4 hrs</u>	<u>24 hrs</u>
		<u>Cure</u>	<u>Exotherm</u> ⁽¹⁾					
Norox [®] MEKP-9	15.6	70	292°F	0(5)	20(5)	60(5)	70(5)	16(4)
Norox [®] AZOX	15.6	10	300°F	32(4)	34(4)	36(4)	37(4)	38(4)

(1) 100g Mass @ 77°F

TABLE II

Gel & Cure Data – Laminating Resin
 10g mass with 1% Peroxide @ 77°F/ 25°C
 Cure defined as 10 (935 Impressor)

<u>Product Name</u>	Time (min)			935 / 934 Hardness				
	<u>Gel</u>	Gel to	Peak	<u>1 hr</u>	<u>2 hrs</u>	<u>3 hrs</u>	<u>4 hrs</u>	<u>24 hrs</u>
		<u>Cure</u>	<u>Exotherm</u> ⁽¹⁾					
Norox [®] MEKP-9	8.0	80	356°F	15(5)	41(5)	43(5)	61(5)	14(4)
Norox [®] AZOX	7.0	34	345°F	53(4)	65(5)	69(5)	69(5)	18(4)

(1) 100g Mass @ 77°F

While Norox[®] AZOX is a very effective initiator when used by itself, this peroxide is often used in combination with standard MEKP formulations. This blend will give intermediate results between the two products, depending on the mixing ratio. Tables III & IV compare gel and cure properties of several AAP/MEKP mixtures in cast polymer and laminating resins.

PACKAGING, SHIPPING & AVAILABILITY

- The standard package sizes of Norox[®] AZOX are cases of 4x8 lb. polyethylene bottles; and 40 lb. or 20 kg Hedpacks. For custom package sizes, please contact your local distributor or United Initiators SPI, Inc.
- Classification – Please refer to the specific Norox[®] AZOX Safety Data Sheet under section 14, Shipping Description.
- Norox[®] AZOX is available through a nation-wide distributor network. Call United Initiators SPI, Inc. for the name of the distributor in your area.
- **NOTE:** SDS's for all our products may be requested thru the website www.syrgispi.com

Disclaimer

This information and our application-technical advice – whether verbal, in writing or by way of trials – reflect our present state of knowledge based on internal tests with local raw materials. Their purpose is to inform interested parties about our products and their possible application. They should not be construed as guaranteeing specific product properties or their suitability for a particular application. Furthermore, the information does not contain complete instructions for use. Nor does it constitute a guarantee as to quality and durability. Changes due to technical progress and corporate advancement reserved. Any existing third-party copyrights are to be taken into account.

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