

Trigonox ADC-NS60

Mixture of peroxydicarbonates, 60% solution in diethylene glycol bis(allyl carbonate)

Trigonox® ADC-NS60 is an initiator (60% active ingredient in diethylene glycol di(allyl carbonate)) for (co)polymerization of diethylene glycol di(allyl carbonate) based optical monomers.

CAS number
78350-78-4, 19910-65-7, 105-64-6

EINECS/ELINCS No.
278-901-5; 243-424-3; 203-317-4

TSCA status
listed on inventory

Specifications

Active oxygen content	4.32 - 4.47% %
Appearance, -20 to -10°C	Clear liquid
Assay	60.0 - 62.0 %
Inorganic + organic hydrolysable chloride	50 mg/kg

Characteristics

Density, -20°C	1.1 g/cm ³
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Applications

Trigonox® ADC-NS60 can be used for the polymerization of diethylene glycol di(allylcarbonate) based optical monomers. The use level of Trigonox® ADC-NS60 will depend on the particular cure parameters being used. Approximately 4.5-5.0% Trigonox® ADC-NS60 is required. Trigonox® ADC-NS60 is widely appreciated for its reactivity, efficiency, ease of handling and the highly transparent, colorless polymers. Trigonox® ADC-NS60 can also be used for the copolymerization of diethylene glycol di(allylcarbonate) with other allyl monomers, methacrylates or vinylacetate.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox® ADC-NS60 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 80°C (176°F)
1 hr	at 62°C (144°F)
10 hr	at 45°C (113°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t^{1/2} = (\ln 2)/k_d$
Ea	125.61 kJ/mole
A	7.69E+15 s ⁻¹
R	8.3142 J/mole·K
T	(273.15+°C) K

Thermal stability

Organic peroxides are thermally unstable substances, which may undergo self-accelerating decomposition. The lowest temperature at which self-accelerating decomposition of a substance in the original packaging may occur is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	0°C
Emergency temperature (T _e)	-10°C
Control temperature (T _c)	-20°C
Method	The Heat Accumulation Storage Test is a recognized test method for the determination of the SADT of organic peroxides (see Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria - United Nations, New York and Geneva).

Storage

Due to the relatively unstable nature of organic peroxides a loss of quality can be detected over a period of time. To minimize the loss of quality, Nouryon recommends a maximum storage temperature (T_s max.) for each organic peroxide product.

T _s max.	-20°C
T _s min.	-30°C
Note	When stored under these recommended storage conditions, Trigonox® ADC-NS60 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

Trigonox® ADC-NS60 is packed in non-returnable, one gallon polyethylene containers of 8 lb net weight (4 per case). Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox® ADC-NS60 is classified as Organic peroxide type D; liquid, temperature controlled; Division 5. 2; UN 3115.

Safety and handling

Keep away from open fire, sparks and other sources of heat or ignition. Avoid contact with reducing agents (e. g. amines), acids, alkalis and heavy metal compounds (e. g. accelerators, driers and metal soaps). Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Trigonox® ADC-NS60. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at nouryon.com/sds-search.

Major decomposition products

Carbon dioxide, Ethane, Acetaldehyde, Isopropanol, Acetone, Methane, Methyl ethyl ketone, sec-Butanol

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Nouryon, however, makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nouryon does not accept any liability whatsoever arising out of the use of or reliance on this information, or out of the use or the performance of the product. Nothing contained herein shall be construed as granting or extending any license under any patent. Customer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes. The information contained herein supersedes all previously issued information on the subject matter covered. The customer may forward, distribute, and/or photocopy this document only if unaltered and complete, including all of its headers and footers, and should refrain from any unauthorized use. Don't copy this document to a website.

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