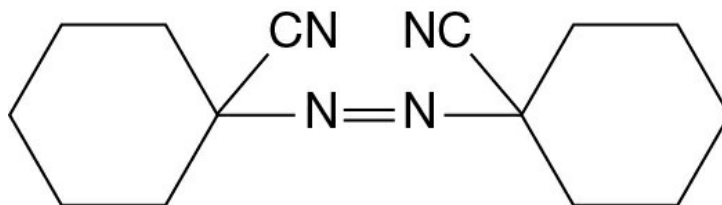


# Perkadox ACCN

1,1-Azodi(hexahydrobenzotrile)



Initiator for (co)polymerization of styrene, acrylonitrile, acrylates, methacrylates and polyols. Generates less aggressive C radicals which enables use in place of peroxide initiators for acrylic polymerization to avoid excessive grafting and form low molecular weight resins.

**CAS number**  
2094-98-6

**EINECS/ELINCS No.**  
218-254-8

**TSCA status**  
listed on inventory

**Molecular weight**  
244.3

## Specifications

Acetone insolubles	≤ 0.15 %
Appearance	White powder
Assay	≥ 98.0 %
Color	≤ 25 Pt-Co / APHA
Iron	≤ 20 mg/kg
Water	≤ 0.5 %

## Characteristics

Density, 20°C	1.1 g/cm <sup>3</sup>
Melting point	116 °C

## Applications

Polymerization of acrylates and methacrylates Perkadox ACCN may be used as an initiator for the solution polymerization of acrylates and methacrylates in the temperature range of 60 – 105°C. Perkadox ACCN does not form oxygenated residues and does not cause oxidative degradation of pigmented or dyed systems. Therefore color stability of transparent colored polymers, such as methyl methacrylate, is improved. Perkadox ACCN may also be used in the solution polymerization of acrylates and methacrylates for the manufacture of coatings. Excessive grafting may occur in acrylic polymers for coatings manufacture when organic peroxides are used as initiators. The excessive grafting can be avoided by the use of azo initiators.

## Half-life data

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

0.1 hr	at 123°C (253°F)
1 hr	at 103°C (217°F)
10 hr	at 85°C (185°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
$E_a$	142.19 kJ/mole
A	1.10E+16 s <sup>-1</sup>
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	80°C (176°F)
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

Ts Max.	35°C (95°F)
Note	When stored under these recommended storage conditions, Perkadox ACCN will remain within the Nouryon specifications for a period of at least three months after delivery.

## Packaging and transport

The standard packaging is a fiber drum with inner polyethylene bag containing 50 lb net weight. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox ACCN is classified as self-reactive solid type D; Division 4. 1; UN 3226.

## Safety and handling

Keep containers tightly closed. Store and handle Perkadox ACCN in a dry well-ventilated place away from sources of heat or ignition and direct sunlight. Never weigh out in the storage room. 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 Perkadox ACCN. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at <https://polymerchemistry.nouryon.com>.

## Major decomposition products

Nitrogen, Cyclohexanecarbonitrile, 1,1'-(Bicyclohexyl)-1,1'-dicarbonitrile

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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The Nouryon logo consists of a stylized orange 'N' followed by the word 'ouryon' in a lowercase, orange, sans-serif font.