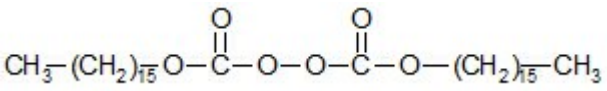
Perkadox 24L

Dicetyl peroxydicarbonate



Initiator for (co)polymerization of vinyl chloride, vinylidene chloride, acrylates and methacrylates. Used to increase melt strength of polypropylene to make high melt strength polypropylene (HMS-PP) by reactive extrusion process.

CAS number 26322-14-5	EINECS/ELINCS No. 247-611-0
TSCA status listed on inventory	Molecular weight 570.9
Active oxygen content peroxide 2.80%	Concentration 2.52-2.61%

Specifications

Appearance	White powder
Assay	90.0-93.0 %
Inorganic + organic hydrolysable chloride	≤ 3000 mg/kg

Characteristics

Bulk density	600 kg/m^3
Melting point	52 °C

Applications

Perkadox 24L is applied as an initiator for the suspension and mass polymerization of vinyl chloride in the temperature range between 45°C and 65°C. Perkadox 24L may be used in combination with other peroxides such as 1,1,3,3-Tetramethylbutyl peroxyneodecanoate (Trigonox 423), Cumyl peroxyneodecanoate (Trigonox 99) or Dilauroyl peroxide (Laurox) to increase reactor efficiency. Perkadox 24L has low water solubility, low vapor pressure and is quickly and evenly distributed into the monomer. There are important properties when a PVC resin of low fish-eye content and narrow particle size distribution is to be produced and autoclaves are to be kept free of crusts and scale.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Perkadox 24L in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 84°C (183°F)
1 hr	at 65°C (149°F)
10 hr	at 48°C (118°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	124.30 kJ/mole
A	3.02E+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	40°C (104°F)
Emergency temperature (T_e)	35°C (95°F)
Control temperature (Tc)	30°C (86°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.) for each organic peroxide product.

Ts Max.	20°C (68°F)
Note	When stored under these recommended storage conditions, Perkadox 24L will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

The standard packaging is 25 kg peroxide in a PE bag in a cardboard box. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox 24L is classified as Organic peroxide type F; solid, temperature controlled, Division 5. 2; UN 3120.

Safety and handling

Keep containers tightly closed. Store and handle Perkadox 24L 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 24L. 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, Hexadecanol

Contact Us

For Polymer Catalysts EMEIA inquiries:
polymer.emeia@nouryon.com

For Polymer Catalysts Asia Pacific inquiries:
polymer.apac@nouryon.com

For HPMO Americas inquiries:
metalorganicsNA@nouryon.com

For HPMO Asia Pacific inquiries:
metalorganicsAP@nouryon.com

Nouryon