Organic Peroxide For Polymer & Rubber Elastomers & Thermoplastics

DO SENDER CHEM

SHANDONG DO SENDER CHEMICALS CO.,LTD.

Website: https://www.perodox.com/
Email: nick@dosenderchem.com.cn
Mobile: +86 15166012761
Address: Room 1212,Jinda Mansion, Liuquan Road, Zhangdian District, Zibo, Shandong, China.

DO SENDER CHEM

01

DO SENDER® CHEM

SHANDONG DO SENDER CHEMICALS CO.,LTD.

is located in the historic city of Zibo, which was once the capital of Qi during the Spring and Autumn Period and Warring States Period in ancient China, and also the birthplace of cuju. In traditional Chinese culture, Confucian culture has a history of nearly a thousand years, with famous figures including Confucius and Mencius. Therefore, Shandong Province is also known as the land of Qilu. Qi represents the state of Qi, and Lu is also the abbreviation for modern Shandong Province

As a city with cultural heritage, Zibo is referred to as "Lu C" in the administrative units of Shandong (for example, the "Lu C" on the license plate represents that the vehicle belongs to Zibo, Shandong). Moreover, the letter "C" also has five other meanings:

City

Chemical

Central

China

Cai/Chuan(Meal/BBQ)

City

During the Liberation War, Zibo changed hands several times. During the Japanese invasion of China, factories for coal, mineral resources, and some aluminum processing industries were established in Zibo. After the People's Liberation Army discovered that Zibo had railway streetlights and a more developed level of industrialization and facilities compared to other cities at the same time. After the founding of the People's Republic of China, Zibo has always existed as a city level unit in the administrative system of Shandong Province. This is the city

At 1946, The railway and facilities of a chemical factory established by Japanese people located in a certain area of Zibo

Central

Zibo is located in the central area of Shandong Province and is also an important transportation hub connecting other cities within the province. Its importance is self-evident.

Chemical

Zibo is a city with a highly developed petrochemical industry, especially with the carbon industry chain accounting for nearly 40% of Zibo's GDP. Currently, Zibo has begun to transform and in recent years has been continuously shutting down facilities with small production capacity, high energy consumption, and high pollution. At the same time, in the field of fine chemicals, we Do Sender Chem has always been a guide and pioneer in continuous improvement in the field

China

Zibo's ceramics are renowned worldwide, and most of the ceramic tableware used at Chinese state banquets is produced in Zibo

Cai/Chuan(Meal/BBQ)

Lu cuisine is one of the four traditional Chinese cuisines, and Boshan cuisine, originating from Boshan District in Zibo, is an important component of Lu cuisine. Meanwhile, Zibo barbecue has become increasingly popular in recent years.

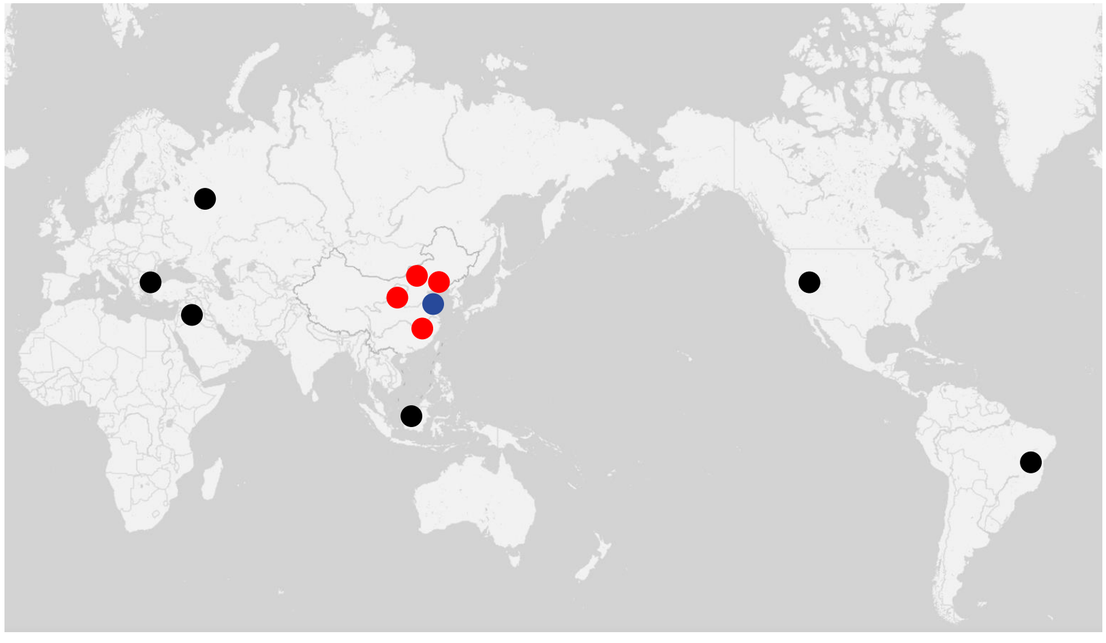
We Create Valuable Passions

Together, we bring essential solutions for a sustainable future

We are a global, specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products, such as cleaning goods, paints and coatings and building products. Furthermore, the dedication of approximately 500 employees with a shared commitment to our customers, business growth, safety, sustainability and innovation has resulted in a consistently strong financial performance. Within our Polymer Specialties business, we produce everyday essentials for the global polymer, recycling and polymer processing industries. We are among the world's leading producers of organic peroxides, metal alkyls and organometallic specialties, which are essential ingredients for the thermoplastic, composite and rubber industries.

Global Service Network

Although our manufacturing facilities are based on the mainland of China, Our strong resource integration capability enables us to provide more reliable, sustainable, and reliable services in the current international situation. For the supply chain, every node is crucial, and it is also the key to ensuring the safety and high-quality reliability of our products. All of our factories have passed ISO9001 certifications to ensure the highest product quality and strict compliance with environmental regulations. In addition, we continue to increase investment in manufacturing technology, high-quality standards, safety, innovation, effective technical support, and reliable supply chains.



Lead to a Sustainable Future

We partner with our customers, suppliers and employees to deliver innovative solutions, drive progress and create a safe and sustainable today and tomorrow for everyone.

Our Commitment to a Sustainable Future, is based on following pillars:

CONTINUOUSLY IMPROVE
our safety and environmental performance

ENGAGE AND PARTNER
with employees, customers, suppliers. and society to drive sustainable progress

GROW AND INNOVATE
to create sustainable solutions enabling customers to be more sustainable

ON PROTRACT WAR
It must go through three stages: strategic defense, strategic stalemate, and strategic counterattack

ON CONTRADICTION
Contradiction exists in the process of the development of all things and runs through the entire process of their development

ON PRACTICE
To achieve a concrete historical unity of subjectivity and objectivity, theory and practice, knowledge and action

02

Facility

We are one of the companies in China that produces and operates the largest variety of organic peroxide products, with the largest trade volume and the best product quality. The company has the production capacity for 30 types of organic peroxide products, while other Class 5.2 products can be sold and exported. A strong supply chain and high-quality service provide the possibility for this. Our current factory facility has an annual production capacity of approximately 10,000 tons of organic peroxides, which is superior to other Chinese suppliers

Productivity

10000 T/A

Factory Cover Area

2000 m²

Investment

20M

Product Quantity

50+

03

What We Have

Range of Crosslinking Peroxides

Do Sender Chem's range of organic peroxides for the crosslinking of elastomers and thermoplastics is very extensive. Companies all over the world depend on our Perodox® organic peroxide brands. Why? Because they are an important ingredient in the production of products, ranging from hi-tech automotive parts such as hoses and belts to shoe soles and power distribution cables.

Examples include:

- Perodox® 101

PEX pipes, polymer modification, technical rubber goods

- Perodox® B

Polymerization of acrylate and methacrylate

Perodox ® 14

wire 8 cable, technical rubber goods, footwear

- Perodox ® K

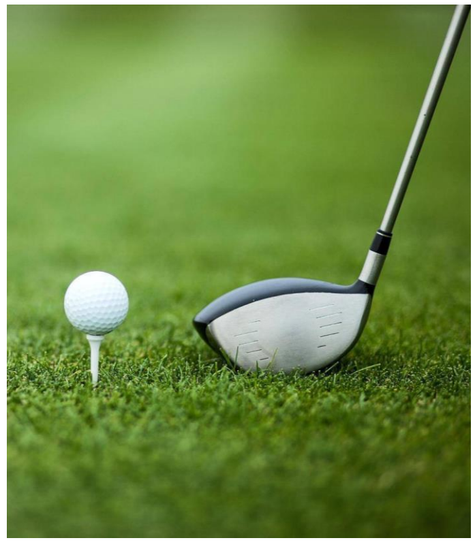
Polymer production and Poly(meth)acrylics

- Perodox® L

initiator used for curing unsaturated polyester, vinyl ester and acrylic thermoset

- Perodox® LUNA

initiator for the suspension and mass polymerization of vinyl chloride



Much of our success is due to our philosophy of creating close partnerships with our customers. What do you want to achieve? From optimizing applications, improving efficiencies, resolving difficulties or even developing new crosslinking peroxides, we're happy to meet with you to discuss your requirements.

This product guide provides an overview of our main, commercially available crosslinking peroxides. We invite you to visit us at www.perodox.com for complete product listings.

Uses of Crosslinking Peroxides

Peroxides are used to crosslink

NR: Natural rubber
IR: Polyisoprene
BR: Polybutadiene
CR: Polychloroprene
SBR: Styrene butadiene rubber
NBR: Nitrile rubber
HNBR: Hydrogenated nitrile rubber
Q: Silicone
AU/EU: Polyurethane
EPM: Ethylene propylene copolymer
EPDM: Ethylene propylene terpolymer
POE: Polyolefin elastomer
T: Polysulfide
PE: Polyethylene
CM: Chlorinated polyethylene
CSM: Chlorosulfonated polyethylene
EVA: Ethylene vinylacetate copolymer
ABS: Acrylonitrile butadiene styrene copolymer
AEM: Ethylene acrylic
EBA: Ethylene butylacrylate copolymer
FKM: Fluoro elastomers

and blends of

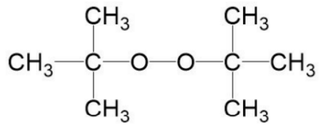
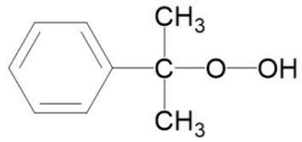
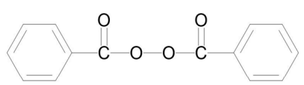
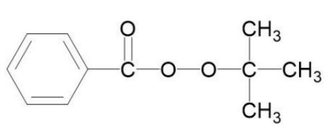
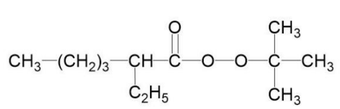
NBR/EPDM
SBR/EPDM
PP/EPDM (TPV's)
PE/EVA
NBR/EVA
POE/EP(D)M

Organic peroxides also find growing use in Polymer modification (CR-PP) Recycling Grafting processes (silane, maleic anhydride) Dynamic vulcanization (TPV production)

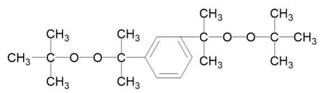
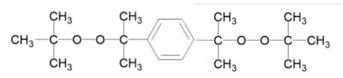
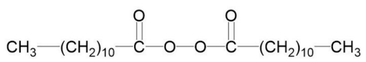
Peroxides find limited use or cannot be used to crosslink

ACM: Polyacrylate
IIR: Butyl rubber
CIIR: Chlorobutyl rubber
CO: Epichlorohydrin
ECO: Epichlorohydrin copolymer
PP: Polypropylene
PB: Polybutene-1
PIB: Polyisobutene
PVC: Polyvinylchloride

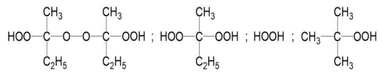
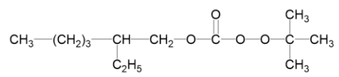
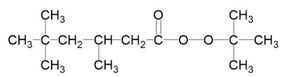
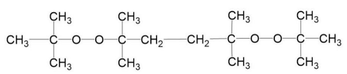
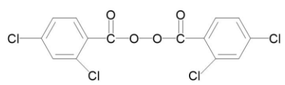
Our Peroxide Products

Common Name	CAS	Molecular formula	Storage Data					Description	Class/ Divison	UN No.	PG
			SADT /℃	Emergency temperature (T_e)	Control temperature (Tc)	Ts Max /℃	Ts Min /℃				
Perodox B	110-05-4		80°C			40°C	-30°C to prevent crystallization	Organic peroxide type E; liquid	Division 5.2	3107	
Perodox K90	80-15-9		75°C and 70°C for IBCs			40°C	-30°C to prevent crystallization	Organic peroxide type F; liquid	Division 5.2	3109	
Perodox K80	80-15-9		75°C for small cans, 70°C for IBC's and 65°C for bulk tanks.			40°C	-30°	Organic peroxide type F; liquid	Division 5.2	3109	
Perodox L75	94-36-0		80°C	75°C		40°C		Organic peroxide type C; solid	Division 5.2	3104	PG II
Perodox L50-PS	94-36-0		70°C			30°C		Organic peroxide type E; solid	Division 5.2	3108	
Perodox C	614-45-9		60°C			25°C	10°C	Organic peroxide type C; liquid	Division 5.2	3103	
Perodox 21	3006-82-4		35°C	25°C		10°C	-30°C to prevent crystallization	Organic peroxide type C; liquid	Division 5.2	3113	PG II

Our Peroxide Products

Common Name	CAS	Molecular formula	Storage Data					Description	Class/ Divison	UN No.	PG
			SADT /℃	Emergency temperature (T_e)	Control temperature (Tc)	Ts Max /℃	Ts Min /℃				
Perodox 14 96-PD	2212-81-9		80°C			30°C		Organic peroxide type D; solid	Division 5.2	3106	
Perodox 14 -40-PD	2212-81-9		80°C			30°C		Organic peroxide type D; solid	Division 4.1	1325	
Perodox 14 -96-FL	2212-81-9		80°C			20°C		Organic peroxide type D; solid	Division 5.2	3106	
Perodox 14 -96-PD	25155-25-3		80°C			30°C		Organic peroxide type D; solid	Division 5.2	3106	
Perodox 14 -40-PD	25155-25-3		80°C			30°C		Organic peroxide type D; solid	Division 4.1		
Perodox 14 -40-GR	25155-25-3		80°C			30°C		Organic peroxide type D; solid	Division 4.1	1325	
Perodox LUNA	105-74-8		50°C			30°C		Organic peroxide type D; solid	Division 5.2	3106	

Our Peroxide Products

Common Name	CAS	Molecular formula	Storage Data					Description	Class/ Divison	UN No.	PG
			SADT /℃	Emergency temperature (T_e)	Control temperature (Tc)	Ts Max /℃	Ts Min /℃				
Perodox MEKP	1338-23-4		60°C			25°C		Organic peroxide type D; liquid	Division 5.2	3105	PG II
TBEC	34443-12-4		60°C			20°C		Organic peroxide type D; liquid	Division 5.2	3105	
Perodox 42	13122-18-4		55°C			25°C	-20°C	Organic peroxide type D; liquid	Division 5.2	3105	
Perodox 101	78-63-7		80°C			40°C	10°C	Organic peroxide type C; liquid	Division 5.2	3103	
Perodox D24	133-14-2		60°C			30℃		Organic peroxide type C; solid	Division 5.2	3104	

03

About Safety

Your Safety is our Priority

In general, organic peroxides are thermally unstable components which can decompose at relatively low temperatures. However, knowledge of proper handling techniques, carefully designed facilities and thorough training of personnel can overcome the hazards. Personnel who understand and pay proper attention will be better able to handle organic peroxides confidently and safely.

UN numbers

All products accepted for transport are assigned to generic entry numbers according to classification principles as described in the recommendations by the United Nations Committee of Experts on the Transport of Dangerous Goods. An explanation of all relevant UN numbers is given in Table 1.

Storage temperatures

SADT: Self-Accelerating Decomposition Temperature

The SADT is the lowest temperature at which self-accelerating decomposition may occur with a substance in the packaging as used in transport. Transportation temperatures are derived from the SADT according to the recommendations by the United Nations Committee of Experts on the Transport of Dangerous Goods.

T_s max.

The T_s max. given in the product list on pages 8-10 is the recommended maximum storage temperature at which the product is stable and quality loss will be minimal.

T_s min.

A minimum storage temperature (T_s min.) is given if phase separation, crystallization or solidification of the product is known to occur below the temperature indicated. We recommend that you store the product above the T_s min. indicated for quality and in some cases safety reasons.

T_{em}: Emergency temperature

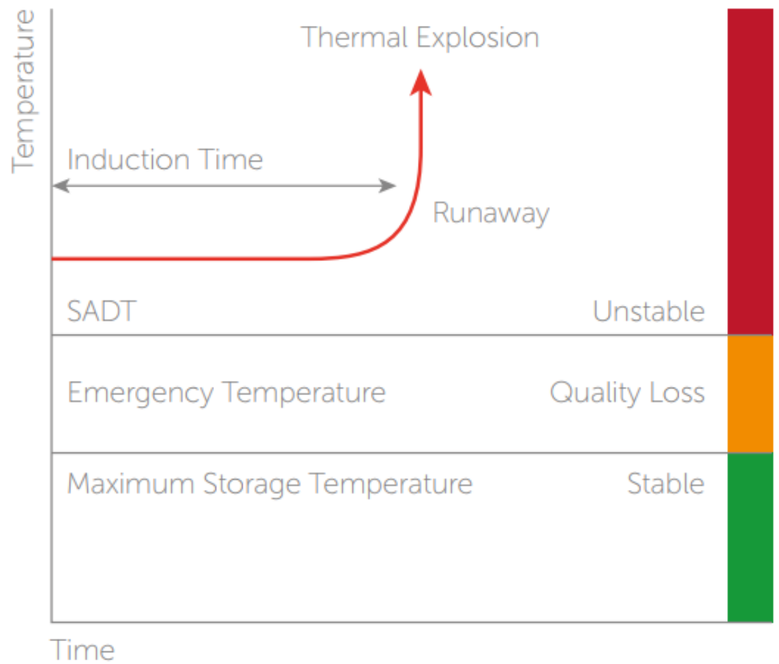
The T_{em} is derived from the SADT and is the temperature at which emergency procedures must be triggered.

T_c: Control temperatures

The T_c is also derived from the SADT and is the maximum temperature at which the product can be safely transported.

Both the T_{em} and T_c are related to safety and do not relate to product quality. To maintain product quality the recommended storage temperatures (T_s min. and max.) should be observed.

Survey of thermal stability



Classification of organic peroxides:

Divison	UN No.	Classification	Hazard Rating
Division 5.2	3103	type C; liquid	High
Division 5.2	3104	type C; solid	High
Division 5.2	3105	type D; liquid	Medium
Division 5.2	3106	type D; liquid	Medium
Division 5.2	3107	type E; liquid	Low
Division 5.2	3108	type E; solid	Low
Division 5.2	3109	type F; liquid	Very Low
Division 5.2	3110	type F; solid	Very Low
Division 5.2	3113	type C; liquid; temperature controlled	High
Division 5.2	3114	type C; solid; temperature controlled	High

Safety Aspects

We are recognized as the global leader in organic peroxide safety. Our proven success in safely handling organic peroxides is due to our long-term commitment to developing and maintaining high safety standards. We always place safety as our top priority.

In general, organic peroxides are unstable chemical compounds, decomposing at relatively low temperatures. They can, however, be handled and stored safely if proper precautions are followed. The prevention of undesired decomposition reactions during handling and storage of organic peroxides require knowledge of the general properties of organic peroxides and the specific requirements of each individual peroxide. Personnel who understand and pay proper attention will be able to handle organic peroxides confidently and safely

This brochure gives guidelines for the safe storage of organic peroxides in their original packaging. Organic peroxide storage requires two important considerations:

- minimization of the possibility of a peroxide decomposition
- reduction of the effects of such a decomposition.

This publication includes guidelines to minimize the probability of a peroxide decomposition by limiting the heat exposure of the product and preventing contamination. Measures to reduce effects of a decomposition are also discussed.

General recommendations are given as well as specific measures for temperature-controlled products.

Beyond the scope of this brochure are the local laws and insurance regulations that must be considered in the design of storage facilities. Various countries have published directives with their local laws.

For more information on the use and the safe handling and storage of organic peroxides, please contact your Do Sender Chem account manager or regional sales office.

Fire of 5,000 kgs organic peroxide

DO SENDER CHEM

Safety Aspects

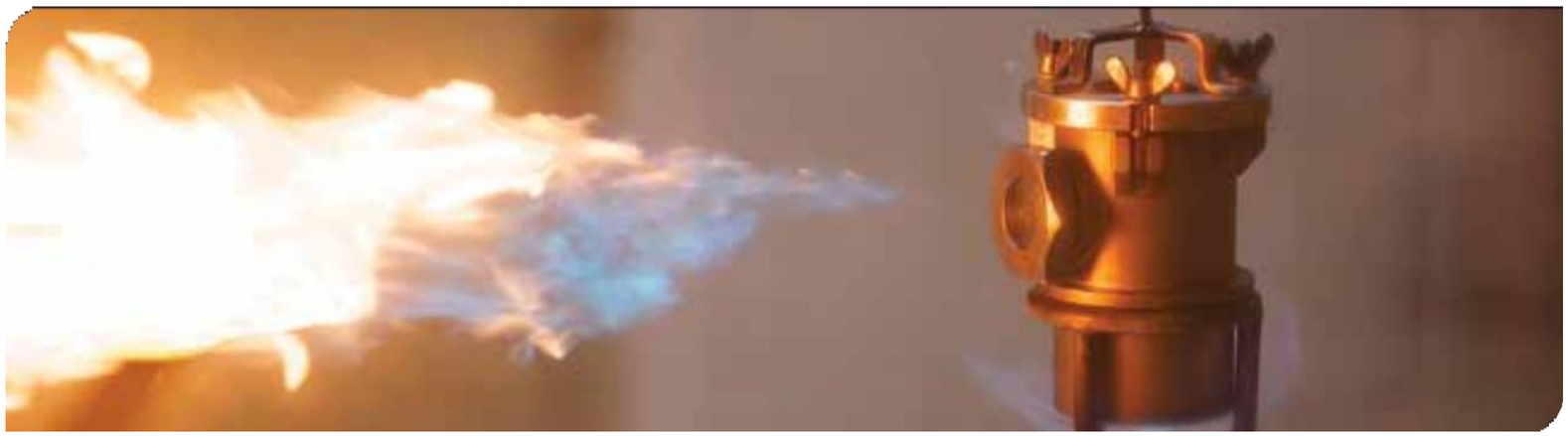
For product inquiry and ordering information, please contact your Do Sender Chemical account manager or regional sales office.

Thermal sensitivity

Organic peroxides are thermally unstable due to the relatively weak -O-O- bond in the molecular structure. As a result of this property organic peroxides are sensitive to heat and will decompose significantly above a certain temperature. This temperature is specific to each individual peroxide.

Every packaged peroxide has a characteristic temperature at which the self-heating accelerates. This tempera- ture is designated as the Self-Acceler- ating Decomposition Temperature (SADT). At or above this temperature a runaway reaction will take place. For this reason, strict temperature control and high temperature alarms are required for the storage of organic peroxides. For many peroxides refrigerated facilities will be necessary.

During decomposition heat is released and the rate of this decomposition increases with temperature. If this heat cannot be transferred to the environ- ment due to reduced surface area from stacking or high ambient temperatures, self-heating will accelerate and lead to a violent combustion or thermal explosion.



Safety testing to determine the sensitiveness of peroxides to the effect of heat under confinement

Contamination

Contamination may accelerate the decomposition of organic peroxides. Most heavy metal compounds have an accelerating effect on decomposition.

Acids, bases and accelerators based on e.g. cobalt or copper and amines may cause decompositions to occur at temperatures significantly lower than the recommended storage temperture.

Therefore, organic peroxides must be stored separately from other chemical compounds, unless compatibility has been proven.

Burning properties

Most organic peroxides should be considered highly combustible. Once ignited many organic peroxides burn vigorously. When heated to their decomposition temperature, organic peroxides will generate vapors. Many of these vapors are flammable. Therefore, the presence of potential ignition sources must be avoided. Electrical equipment installed should be explosion-proof to avoid sparks.

Nevertheless, auto-ignition of the vapors may still occur. Consequently, fire- fighting equipment should be present in all storage rooms.

Pressure build-up

As organic peroxides produce vapors during decomposition, pressure build-up in the package occurs. To prevent excessive pressure rise inside storage rooms due to prolonged decomposition and bursting of the packages, the storage room should be provided with a pressure relief mechanism.

Storage

One can minimize the probability of a peroxide decomposition by limiting the heat exposure of the product and preventing contamination. Temperature control is the most critical control measure in preserving quality and preventing a runaway reaction

Although a number of organic perox- ides can be safely stored at ambient temperature, most require some form of temperature control. The maximum temperature allowed by the regulatory agencies is the control temperature T_c.

This temperature together with the emergency temperature (T_{em}, see section Temperature control and monitoring on this page) are derived from the SADT in next table.

TYPE OF RECEPTACLE	SADT	CONTROL TEMPERATURE	EMERGENCY TEMPERATURE
Single packagings and IBCs	20°C or less over 20 to 35°C over 35°C	20°C below SADT 15°C below SADT 10°C below SADT	10°C below SADT 10°C below SADT 5°C below SADT
Portable tanks	≤ 45°C	10°C below SADT	5°C below SADT

However, for a longer shelf life, lower storage temperatures than the control temperature are generally recommend- ed. At this recommended storage temperature (T_s), as indicated on the product label, the product will be stable and quality loss will be minimal.

As each organic peroxide has its own specific storage temperature, consult the product catalog or individual Product Data Sheet (PDS) which can be downloaded from polymerchemistry. nouryon.com.

Temperature monitoring and control

The temperature must be maintained at or below the recommended storage temperature; consult the product catalog or PDS.

Organic peroxides should be protected from direct sunlight and all other sources of heat.

Particular attention should be given to:

- windows (not recommended or should be blinded),
- heating systems (e.g. radiators, warmwater pipes, etc).

Cooled storage rooms should be provided with at least two independent temperature alarms. An alarm is recommended when the storage temperature is exceeded by 5°C. If this is the case the store should be inspected. The temperature alarm should incorporate some delay device to allow for intermittent short tempera- ture increase which result from inspection, loading and unloading, etc. Any possibility of alarm de-activation should be countered with an automatic alarm re-activation.

Non-cooled storage rooms should be provided with an alarm set at the emergency temperature but not higher than 45°C. It is imperative that a signal from the mentioned alarm systems should not escape notice at any time including nights, weekends, etc. and that appropriately trained personnel are alerted.

There should be dual power supply for the alarm system.

Storage

Fire fighting

A deluge system of large capacity is strongly recommended to fight large fires.

A dry-powder fire extinguisher with a capacity of at least 10 kg should be located outside the storage building, near the entrance. This is used only to fight small fires of organic peroxides. After the fire has been extinguished the peroxide should be cooled to a temperature below the SADT to prevent the peroxide from re-igniting due to self heating.

Management

Smoking, open fire and all other sources of ignition must be forbidden in and near the storage rooms. Appropri- ate warnings should be posted in the storage area.

Unless compatibility has been proven, organic peroxides should be stored separately from other chemical compounds and, under all circum- stances, away from accelerators and other reducing agents.

Use vermiculite or perlite to clean up small spillages

Small fire extinguishers in the neighborhood of peroxide stores

Store organic peroxides in their original closed packages.

Packages should be visually checked for labelling, leakage and damage, etc. at the time of delivery. If necessary the material should be repacked in suitable, clean packages. A suitable packaging material is non-pigmented polyethylene. Never use tightly closed rigid metal containers.

Space between pallets to allow maximum air circulation

Repacking, weighing, mixing, etc. should be carried out in a separate room. Clean dedicated polyethylene or stainless steel implements should be used to prevent contamination of the peroxide.

Stacking procedures should require that labels and safety information are always visible.

Pallets should be configured to allow maximum air circulation, no more than two high with a minimum clearance of 0.1 m from any wall.

Storage on racks may be applied when individual packages are stored. Different products should be stacked separately to avoid confusion.

If liquid organic peroxides are stored, an inert absorbent material, such as vermiculite or perlite, should be available in or near the store to clean up small spillages. Absorbents should be soaked with water afterwards.

Stock should be rotated following the first in, first out principle.

The doors of the storage should be marked with the peroxide label.

The storage building should be kept clean; no litter, rags, etc.

The store should be kept closed with access limited to authorised, trained personnel only.

Directives for the safe handling and storage of organic proxides

Storage

Organic peroxides should be protected against all sources of heat, even direct sunlight. Storage together with other chemicals, especially accelerators, other reducing materials and inflammable products must be avoided.

Handling

Fire hazard
No smoking, no naked lights, no sparks, or other sources of ignition

Explosion hazard

Avoid direct contact of organic peroxides with accelerators — add each component separately to the resin. Contamination with
dust, heavy metals and their compounds, as well as chemicals in general, should be avoided.

Eye and skin injury

Always wear safety goggles and protective gloves, since organic peroxides have a corrosive effect on eyes and skin.

Additional information

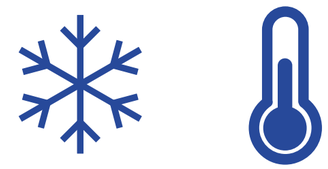
On request we also provide specific publications on the use and the safe handling and storage of our products

?

Do Sender Chem is recognized as the global leader in organic peroxide safety. We always place safety as our top priority.

Sharing our experience in safety is one of the most important resources we offer Classroom reviews of safety and handling of organic peroxides, online trainings, consultation on storage and peroxide dosing equipment as well as demonstrations and publications on the safe use and handling of organic peroxides are just some of the services we offer.

How to store peroxides



- Store in a cool room away from direct sunlight.
- Observe maximum and minimum storage temperature as printed on the packagingand SDS.
- Leave in the original packaging.
- Close packaging after use.

- Do not store together with accelerators or other chemicals
- Do not mix peroxides with accelerators.
- Avoid any contact with dust, metal or other chemicals.

How to handle peroxides

- Wear safety goggles.
- Wear appropriate protective gloves and clothing.
- Remove spillages immediately.
- Only use compatible materials when handling.

- Do not smoke.
- Avoid heat sources
- Avoid open fire.
- Never heat peroxides

SENDER CHEM

Packaging

We continuously develop new and innovative packaging making logistics more efficient and improving safety standards even beyond existing transport regulations for both liquid and solid organic peroxides.

Do Sender Chem offers a variety of packaging options for both liquid and solid organic peroxides. For details of the packaging pls visit us at www.perodox.com or contact our sale for further information.

Enhanced advantages and safety features

- Easy operating, screw cap anti-glug device
- Ergonomically designed handle for ease and safety of handling
- Opaque exterior to protect contents from harmful UV rays
- Shaped for promotion of optimal air circulation while stacked
- Unique interior features allow more complete drainage

03

Product Data Sheet

Perodox B

CAS No.

110-05-4

TSCA Status

listed on inventory

Active oxygen content peroxide

10.94%

EINECS/ELINCS No.

203-733-6

Molecular weight

146.2

Characteristics

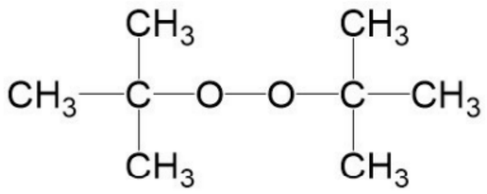
Clear liquid

Density, 20 °C

0.800 g/cm³

Viscosity, 20 °C

0.9 mPa.s



Di-Tert-Butyl Peroxide

Polymerization of acrylate and methacrylate: Within the temperature range of 130-175 °C, it can be used as an initiator for solution polymerization or copolymerization of acrylate and methacrylate, especially in the production of coatings. It can also be used as an initiator for bulk and suspension polymerization or copolymerization of acrylate and methacrylate.

Applications

DTBP(Di-tert-butyl peroxide) can be used for the market segments: polymer production, polymer crosslinking and acrylics production with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

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

0.1 hr	at 164°C (327°F)
1 hr	at 141°C (286°F)
10 hr	at 121°C (250°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	153.46 kJ/mole
A	4.20E+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 may occur with a substance in the packaging as used for transport 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 will occur over a period of time. To minimize the loss of quality, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide product.

Ts Max.	40°C (104°F) and
Ts Min.	-30°C (-22°F) to prevent crystallization
Note	When stored according to these recommended storage conditions, DTBP will remain within the Do Sender Chem specifications for a period of at least 6 months after delivery.

Packaging and transport

Polyethylene white plastic drum 20KG.

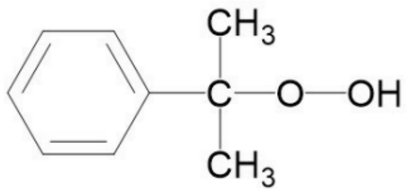
DTBP is classified as Organic peroxide type E; liquid, Division 5.2; UN 3107.

Major decomposition products

Acetone, Methane, tert-Butanol.

Perodox K90

CAS No.
80-15-9
TSCA Status
listed on inventory
EINECS/ELINCS No.
210-254-7
Molecular weight
152.2
Appearance
Clear liquid
Density, 20 °C
1.040 g/cm³
Viscosity, 20 °C
5 mPa.s



Cumyl Hydroperoxide 90%

Perodox K90 is an initiator (90% active ingredient in aromatic solvent mixture) for (co)polymerization of (meth)acrylates.

Applications

For Polymer production and Poly(meth)acrylics: Perodox K90 may be used for various polymerization reactions. It can be used in emulsion, solution and bulk polymerizations. In emulsion processes, CHP may be activated by organic-soluble or water-soluble reducing agents, or by metal compounds to achieve polymerization at room temperature or lower. When no accelerators are used, effective polymerization can be obtained in the temperature range of 50-200°C. For example, styrene and methyl methacrylate can be polymerized in bulk in the temperature range of 60-100°C using CHP. CHP may also be used for emulsion polymerization of various vinyl monomers. In this case CHP may be used in combination with reducing agents to achieve reproducible results at low temperatures. For Thermoset: CHP may be used as an initiator for the room temperature cure of promoted unsaturated polyester and vinyl ester resins, and elevated temperature cure of non-promoted resins.

Thermal stability

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

SADT	60°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, Do Sender Chem recommends a maximum storage temperature

Ts Max.	25°C
Note	When stored under the recommended storage conditions, Perodox K90 will remain within the Do Sender Chem specifications for a period of at least 9 months after delivery.

Packaging and transport

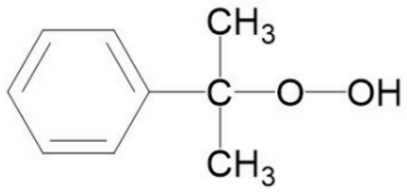
Packed in plastic drums with specifications of 1000kg, 200kg, and 25kg. Perodox K90 is classified as Organic peroxide type F; liquid, Division 5.2; UN 3109.

Major decomposition products

Acetophenone, phenylisopropanol, methane, water.

Perodox K80

CAS No.
80-15-9
TSCA Status
listed on inventory
EINECS/ELINCS No.
210-254-7
Molecular weight
152.2
Appearance
Clear liquid
Density, 20 °C
1.06 g/cm³
Viscosity, 20 °C
10.4 mPa.s



Cumyl Hydroperoxide 80%

Perodox K80 may be used for various polymerization reactions. It can be used in emulsion, solution and bulk polymerizations. In emulsion processes, CHP80 may be activated by organic-soluble or water-soluble reducing agents, or by metal compounds to achieve polymerization at room temperature or lower. When no accelerators are used, effective polymerization can be obtained in the temperature range of 50-200°C. For example, styrene and methyl methacrylate can be polymerized in bulk in the temperature range of 60-100°C using Perodox K80 . Perodox K80 may also be used for emulsion polymerization of various vinyl monomers. In this case CHP90 may be used in combination with reducing agents to achieve reproducible results at low temperatures.

Applications

Perodox K80 can be used for the market segments: polymer production, thermoset composites and acrylics production with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. The half-life of CHP80 in chlorobenzene is:

0.1 hr	at 195°C
1 hr	at 166°C
10 hr	at 140°C
Formula 1	kd=A·e-Ea/RT
Formula 2	$t_{1/2}=(\ln 2)/kd$
Ea	132.56 kJ/mole
A	1.15E+12 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 may occur with a substance in the packaging as used for transport is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	75°C for small cans, 70°C for IBC's and 65°C for bulk tanks.
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, Do Sender Chem recommends a maximum storage temperature

Ts Max.	40°C
Ts Mix.	-30°C *
Note	When stored under the recommended storage conditions, CHP80 will remain within the Do Sender Chem specifications for a period of at least 6 months after delivery.

Packaging and transport

Packed in plastic drums with specifications of 1000kg, 200kg, and 25kg.
CHP is classified as Organic peroxide type F; liquid, Division 5.2; UN 3109.

Major decomposition products

Acetophenone, 2-Phenylisopropanol,Methane

Perodox L75

CAS No.

94-36-0

TSCA Status

listed on inventory

EINECS/ELINCS No.

202-327-6

Molecular weight

242.2

Active oxygen

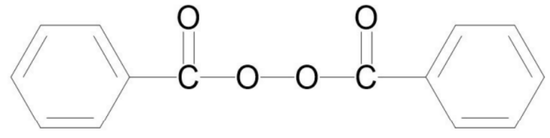
4.88-5.02 %

Appearance

White granular powder

Assay

74.0-76.0 %



(Di)Benzoyl peroxide 75%

Perodox L75 is an initiator (powder formulation with 75% benzoyl peroxide and 25% water) used for curing unsaturated polyester, vinyl ester and acrylic thermoset resins at ambient or slightly elevated temperatures. It is often used in conjuction with tertiary amine accelerators at ambient conditions. Typical uses include cast polymer, panels, chemical anchors and mine bolts and RTM.

Applications

BPO75 can be used for the market segments: polymer production, thermoset composites and acrylics production with their different applications/functions.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For BPO75 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 113°C (235°F)
1 hr	at 91°C (196°F)
10 hr	at 71°C (160°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	$t_{1/2}$ = (ln2)/kd
Ea	122.35 kJ/mole
A	6.94E+13 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	80°C
Emergency temperature (T_e)	75°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide.

Ts Max.	40°C
Note	When stored under the recommended storage conditions, BPO75 will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

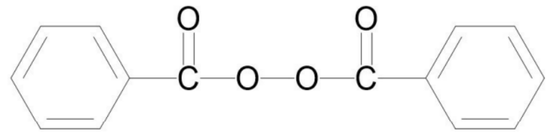
Packed in plastic drums with specifications of 25kg.
BPO75 is classified as Organic peroxide type C; solid, Division 5.2; UN 3104; PG II.

Major decomposition products

Carbon dioxide, Benzene, Benzoic acid

Perodox L50-PS

CAS No.
94-36-0
TSCA Status
listed on inventory
EINECS/ELINCS No.
202-327-6
Molecular weight
242.2
Active oxygen content peroxide
6.61%
Concentration
3.24-3.37%



(Di)Benzoyl peroxide 50%

Perodox L50-PS is the preferred BPO paste for unsaturated polyester & vinyl ester resins.

Applications

Perodox L50-PS is a paste containing 50% dibenzoyl peroxide without phthalate for the curing of unsaturated polyester resins at ambient and elevated temperatures. At temperatures up to 80°C, BPO50 Paste should be used in combination with an aromatic tertiary amine accelerator, above 80°C the use of an accelerator is not required. BPO50 Paste has primarily been developed for the putty market. BPO50 Paste shows a very good chemical and physical stability and is therefore very suitable for tube filling.

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	70°C (158°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide.

Ts Max.	30°C (86°F)
Note	When stored under the recommended storage conditions, BPO50 Paste will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

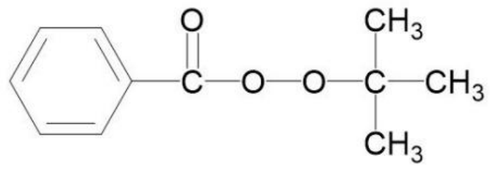
Packed in plastic drums with specifications of 25kg.
BPO50 Paste is classified as Organic peroxide type E; solid, Division 5.2; UN 3108; PG II.

Major decomposition products

Carbon dioxide, benzene, benzoic acid

Perodox C

CAS No.
614-45-9
TSCA Status
listed on inventory
EINECS/ELINCS No.
210-382-2
Molecular weight
194.2
Active oxygen
8.07-8.24 %
Appearance
Clear liquid
Assay
≥ 98.0 %



Tert-Butyl peroxy benzoate

In the temperature range of 100-170°C, TBPB can be used as an initiator for the solution polymerization or copolymerization of acrylate and methacrylate, especially for the production of coatings.

Applications

TBPB can be used for the market segments: polymer production, polymer crosslinking, thermoset composites and acrylics production with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

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

0.1 hr	at 142°C (288°F)
1 hr	at 122°C (252°F)
10 hr	at 103°C (217°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	$t_{1/2}$ = (ln2)/kd
Ea	151.59 kJ/mole
A	2.23E+16 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	60°C (140°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide product.

Ts Max.	25°C (77°F)
Ts Min.	10°C (50°F) *
Note	* to prevent crystallization. When stored under the recommended storage conditions, Do Sender Chem will remain within the specifications for a period of at least 3 months after delivery.

Packaging and transport

25 kg polyethylene packaging
TBPB is classified as Organic peroxide type C; liquid; Division 5.2; UN 3103.

Major decomposition products

Carbon dioxide, Acetone, Methane, tert-Butanol, Benzoic acid, Benzene

Perodox 21

CAS No.

3006-82-4

TSCA Status

listed on inventory

Active oxygen content peroxide

7.40%

EINECS/ELINCS No.

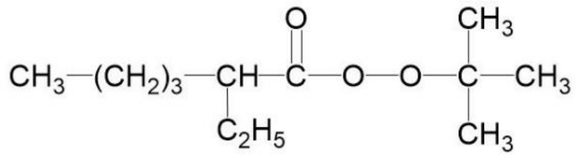
221-110-7

Molecular weight

216.3

Concentration

7.22-7.37%



Tert-butyl peroxy-2-ethylhexanoate

Perodox 21 is an efficient initiator for the production of Low Density Polyethylene (LDPE). It is used both for tubular and autoclave processes. In most cases a combination with other peroxides is used to ensure a broad reactivity range.

Applications

TBPEH(tert-Butyl peroxy-2-ethylhexanoate) can be used for the market segments: polymer production, thermoset composites and acrylics with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

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

0.1 hr	at 113°C
1 hr	at 91°C
10 hr	at 72°C
Formula 1	kd = A·e-Ea/RT
Formula 2	$t_{1/2}$ = (ln2)/kd
Ea	124.90 kJ/mole
A	1.54E+14 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	35°C
Emergency temperature (T_e)	25°C
Control temperature (Tc)	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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts Max.	10°C and
Ts Min.	-30°C to prevent crystallization

Note When stored according to these recommended storage conditions, TBPEH will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

20 kg polyethylene drum.TBPEH is classified as Organic peroxide type C; liquid, temperature controlled, Division 5.2; UN 3113; PG II. Control Temperature = 20 °C Emergency Temperature = 25 °C

Major decomposition products

Carbon dioxide, tert-Butanol, Heptane, 3-tert-Butoxyheptane

Perodox 14

CAS No.

25155-25-3,2212-81-9

TSCA Status

listed on inventory

Active oxygen content peroxide

9.45%

EINECS/ELINCS No.

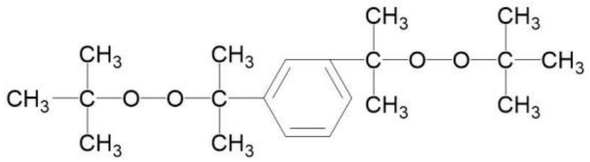
218-664-7

Molecular weight

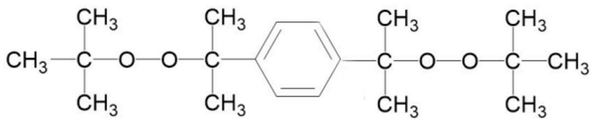
338.5

Concentration

9.08% min.



1,3-Di-(2-tert-butylperoxyisopropyl)benzene



1,4-Di-(2-tert-butylperoxyisopropyl)benzene

Perodox 14 is a bifunctional peroxide which is used for the crosslinking of natural rubber and synthetic rubbers, as well as polyolefins. Rubber compounds containing BIPB have excellent scorch safety, and under certain conditions one step mixing is possible. Safe processing temperature: 135°C (rheometer ts2 > 20 min.). Typical crosslinking temperature: 175°C (rheometer t90 about 12 min.).

Applications

Perodox 14 can be used for the market segments: polymer production and polymer crosslinking with their different applications/functions.

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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts max.	30°C (86°F)
Note	Perodox 14 can be safely stored at 30°C (86°F) max without loss of activity. When stored under strictly recommended storage conditions, BIPB will remain within the Do Sender Chem specifications for a period of at least 12 months after delivery.

Packaging and transport

20 kg corrugated box packaging
BIPB is classified as Organic peroxide type D; solid, Division 5.2; UN 3106. PG II

Major decomposition products

tert-Butanol, Methane, Acetone, Bis(2-hydroxyisopropyl)benzene.

Attn

Perodox 14-96% owns flakes and powder forms
Perodox 14-40% owns powder and granule forms
Usually Perodox 14 combined with CAS 1025-15-6 TAIC Triallyl isocyanurate as the Crosslinking Coagent

Perodox LUNA

CAS No.

105-74-8

TSCA Status

listed on inventory

Active oxygen content peroxide

4.01%

EINECS/ELINCS No.

203-326-3

Molecular weight

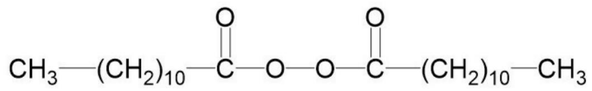
398.6

Appearance

White flakes without any contamination

Assay

≥ 99.0 %



Di lauroyl peroxide

Perodox LUNA is a widely used initiator for the suspension and mass polymerization of vinyl chloride between 60°C and 80°C. In many cases LPO is combined with a more active initiator, such as a peroxydicarbonate to increase reactor efficiency. LPO is used as an initiator for the high pressure polymerization of ethylene, but because of its poor solubility in most aliphatics, it is in many cases replaced by other peroxides such as Di(3,5,5-trimethylhexanoyl) peroxide (TMHP). The advantage of LPO is the possibility of storing at ambient temperature. LPO is also used as an initiator for the polymerization of methylmethacrylate at 60-90°C. LPO is often applied as a replacement for 2,2'-Azobis(isobutyronitril) (AIBN).

Applications

LPO can be used for the market segments: polymer production, thermoset composites and acrylics production with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For LPO in chlorobenzene:

0.1 hr	at 99°C
1 hr	at 79°C
10 hr	at 61°C
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	123.37 kJ/mole
A	3.92E+14 sP-1P
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 50°C

Method The Heat Accumulation Storage Test is a recognized test method for thedetermination 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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts Max. 30°C

Note When stored under these recommended storage conditions, LPO will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

20 kg corrugated box packaging

LPO is classified as Organic peroxide type D; solid, Division 5.2; UN 3106. PG II

Major decomposition products

Carbon dioxide, Docosane, Undecane, Undecyl dodecanoate.

Perodox MEKP

CAS No.

1338-23-4

TSCA Status

listed on inventory

EINECS/ELINCS No.

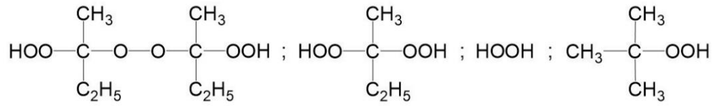
215-661-2

Appearance

Clear colorless liquid

Total active oxygen

8.8-9.0 %



Methyl Ethyl ketone Peroxide

Applications

Perodox MEKP is a general purpose methyl ethyl ketone peroxide (MEKP) for the curing of unsaturated polyester resins in the presence of a cobalt accelerator at room and elevated temperatures. The curing system Perodox MEKP-50/cobalt accelerator is particularly suitable for the curing of gelcoat resins, laminating resins, lacquers and castings; moreover the manufacture of light resistant parts may be possible contrary to the curing system benzoyl peroxide/amine accelerator. Practical experience throughout many years has proven that by the guaranteed low water content and the absence of
polar compounds in Perodox MEKP-50, this peroxide is very suitable in GRP products for e.g. marine applications.

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 60°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts Max. 25°C
Note When stored under these recommended storage conditions, MEKP will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

20 kg corrugated box packaging.
Perodox MEKP is classified as Organic peroxide type D; liquid, Division 5.2; UN 3105.

Major decomposition products

Carbon dioxide, water, acetic acid, formic acid, propionic acid, methyl ethyl ketone.

Attn

Based on the different active oxygen of the MEKP series, Do Sender Chem makes a types table, Please contact us for advice on the best curing system for your specific application

Perodox MEKP-Types of Active Oxygen

PRODUCT	DESCRIPTION	ACTIVE OXYGEN CONTENT	SAFETY INFORMATION	
			Ts (°C)	SADT (°C)
Methyl Ethyl Ketone Peroxide CAS 1338-23-4				
Perodox MEKP-10	Standard, general purpose MEKP, low water content, absence of polar solvents	9.9	25	60
Perodox MEKP-90	Standard, general purpose MEKP, low water content, absence of polar solvents	8.9	25	60
Perodox MEKP-90H	Fast gel time, general purpose lamination	9.9	25	60
Perodox MEKP-90L	High Dimer, designed for VE resins & gel coats. Less foaming	8.5	25	60
Perodox MEKP-100	Economical, general purpose MEKP	8.9	25	55
Perodox MEKP-200	Economical, general purpose MEKP	9.9	25	55
Perodox MEKP-1000P	MEKP gel, designed for putty curing	8	25	55
Methyl Ethyl Ketone Peroxide (Phthalate Free) CAS 1338-23-4				
Perodox MEKP-90A	Standard, general purpose MEKP, low water content, Phthalate free	8.9	25	60
Perodox MEKP-90HA	Fast gel time, general purpose lamination, Phthalate free	9.9	25	60

Perodox 117

CAS No.

34443-12-4

TSCA Status

listed on inventory

EINECS/ELINCS No.

252-029-5

Appearance

Clear colorless liquid

Active oxygen content peroxide

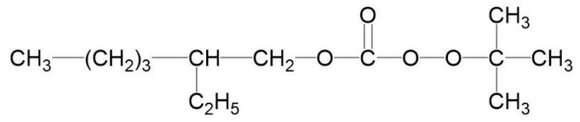
6.49%

Appearance

Clear liquid

Assay

≥ 95.0 %



tert-Butylperoxy 2-ethylhexyl carbonate

Applications

Perodox 117 can be used as initiator for the solution (co)polymerization of acrylates and methacrylates in the temperature range of 100-170°C, amongst others for the manufacture of coatings. It can also be applied as an initiator for the bulk and suspension (co)polymerization of acrylates and methacrylates.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Perodox 117 in chlorobenzene:

0.1 hr	at 137°C (279°F)
1 hr	at 117°C (243°F)
10 hr	at 98°C (208°F)
Formula 1	$kd = A \cdot e^{-Ea/RT}$
Formula 2	$t_{1/2} = (\ln 2)/kd$
Ea	151.72 kJ/mole
A	4.07E+16 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	60°C (140°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, Do Sender Chem 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, MEKP will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

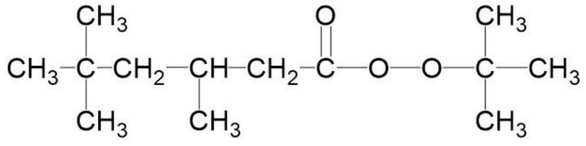
25 kg corrugated box packaging.
Perodox 117 is classified as Organic peroxide type D; liquid, Division 5. 2; UN 3105.

Major decomposition products

Carbon dioxide, tert-Butanol, 2-Ethylhexanol

Perodox 42

CAS No.
13122-18-4
TSCA Status
listed on inventory
EINECS/ELINCS No.
236-050-7
Active oxygen
6.74 %
Appearance
Clear liquid
Assay
97%
Color
50 Pt-Co / APHA max.



tert-Butyl peroxy-3,5,5-trimethylhexanoate

Perodox 42S is an initiator for (co)polymerization of (meth)acrylates.

Applications

Perodox 42 (tert-Butyl peroxy-3,5,5-trimethylhexanoate) can be used for the market segments: polymer production, thermoset composites and acrylics with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t½) at various temperatures. For Perodox 42 in chlorobenzene:

0.1 hr	135°C (275°F)
1 hr	114°C (237°F)
10 hr	94°C (201°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	140.78 kJ/mole
A	1.94E+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	55°C (131°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts Max.	25°C (77°F)
Note	When stored under these recommended storage conditions, Perodox 42 will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

20 kg. Perodox 42 is classified as Organic peroxide type D; liquid, Division 5.2; UN 3105.

Major decomposition products

Carbon dioxide, Methane, tert-Butanol, Acetone, 2-tert-Butyloxy-2,4,4-trimethylpentane

Perodox 101

CAS No.

78-63-7

TSCA Status

listed on inventory

EINECS/ELINCS No.

201-128-1

Active oxygen

≥ 10.14 %

Appearance

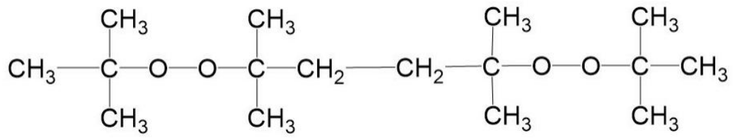
Clear liquid

Assay

≥ 92.0 %

Color

≤ 50 Pt-Co / APHA



2,5-Dimethyl-2,5-di(tert-butylperoxy) hexane

Applications

Perodox 101 can be used for the market segments: polymer production,polymer crosslinking, acrylics production and polymer recycling with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Perodox 101 in chlorobenzene:

0.1 hr	at 156°C (313°F)
1 hr	at 134°C (273°F)
10 hr	at 115°C (239°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	$t_{1/2}$ = (ln2)/kd
Ea	155.49 kJ/mole
A	1.68E+16 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	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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide product.

Ts Max.	40°C (104°F) and
Ts Min.	10°C (50°F)
Note	When stored under these recommended storage conditions, Perodox 101 will remain within the Do Sender Chem specifications for a period of at least 3 months after delivery.

Packaging and transport

20 kg.

Perodox 101 is classified as Organic peroxide type C; liquid, Division 5.2; UN 3103.

Major decomposition products

Acetone, Methane, tert-Amyl alcohol, tert-Butanol, Ethane

Perodox D24

CAS No.

133-14-2

TSCA Status

listed on inventory

EINECS/ELINCS No.

205-094-9

Molecular weight

380.0

Active oxygen content peroxide

4.21%

Appearance

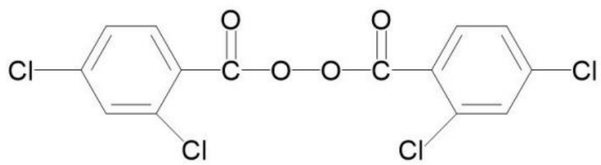
Off-white homogeneous paste

Assay

49.0-51.0 %

Concentration

2.06-2.15%



Di(2,4-dichlorobenzoyl) peroxide

Applications

Perodox D24 is a monofunctional peroxide which is used for the crosslinking of silicone rubber. Safe processing temperature: 75°C (rheometer ts2 > 20 min.). Typical crosslinking temperature: 90°C (rheometer t90 about 12 min.).

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 SelfAccelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	60°C (140°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, Do Sender Chem recommends a maximum storage temperature (Ts max.) for each organic peroxide
product.

Ts Max.	30°C (86°F)
Ts Min.	10°C (50°F)
Note	When stored under these recommended storage conditions, Perodox D24 will remain within the Do Sender Chem specifications for a period of at least 6 months after delivery.

Packaging and transport

20 kg.

Perodox D24 is classified as Organic peroxide type C; solid, Division 5.2; UN 3104.

Major decomposition products

Carbon dioxide, 1,3-Dichlorobenzene, 2,4-Dichlorobenzoic acid, Traces of 2,2',4,4' tetrachlorobiphenyl