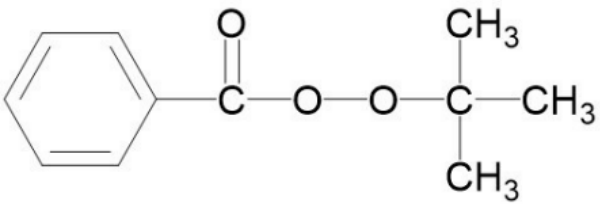
TBPB

Tert-Butyl peroxy benzoate



CAS No.
614-45-9
TSCA Status
listed on inventory
EINECS/ELINCS No.
210-382-2
Molecular weight
194.2
Active oxygen content peroxide
8.24%

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. TBPB can also be used as initiator for bulk and suspension polymerization or copolymerization of acrylate and methacrylate.

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 (t½) 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	t½ = (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