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ProductInformation

Cumene hydroperoxide solution

Product Code **24,750-2**
Storage Temperature 2-8 °C
Replacement for Product Number C 0524

Product Description

Molecular Formula: $C_9H_{12}O_2$
Molecular Weight: 152.2
CAS Number: 80-15-9
Melting Point: -9 °C (neat liquid)
Boiling Point: 100 - 101 °C (neat liquid, at 8 mm Hg)
Density: 1.03 g/ml (neat liquid, 25 °C)
Synonyms: α,α-Dimethylbenzylhydroperoxide, Isopropylbenzene hydroperoxide, 1-Methyl-1-phenylethylhydroperoxide, 2-Phenyl-2-propyl hydroperoxide

Cumene hydroperoxide is a reagent that is used to produce organic peroxides. It is prepared from the oxidation of cumene with air at a high temperature. The industrial applications include the production of polymers and fiberglass products. The use of cumene hydroperoxide in the coupling of a water-soluble polymer to the surface of a hydrophobic polymer colloid has been reported.[1]

In biology research, cumene hydroperoxide is used in the generation of reactive oxygen species that may be involved in biological oxidative stress and disease.[2,3] The use of cumene hydroperoxide in testing the antioxidant activities of thiolperoxidase and alkyl hydroperoxide reductase in *Helicobacter pylori* has been reported.[4] Cumene hydroperoxide may also be used as a substrate for glutathione peroxidases.[5,6] A comparison of peroxide detoxification in neurons and astroglial cells that uses cumene hydroperoxide has been published.[7]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is miscible with ethanol (1 ml/ml, v/v), yielding a clear, colorless to faint yellow solution.

References

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2. Kagan, V. E., et al., Toward mechanism-based antioxidant interventions: lessons from natural antioxidants. Ann. N.Y. Acad. Sci., **959**, 188-198 (2002).
3. Shvedova, A. A., et al., Antioxidant balance and free radical generation in Vitamin E-deficient mice after dermal exposure to cumene hydroperoxide. Chem. Res. Toxicol., **15(11)**, 1451-1459 (2002).
4. Olczak, A. A., et al, Association of *Helicobacter pylori* Antioxidant Activities with Host Colonization Proficiency. Infect. Immun., **71(1)**, 580-583 (2003).
5. Reddy, C. C., et al., Evidence for the occurrence of selenium-independent glutathione peroxidase activity in rat liver microsomes. Biochem. Biophys. Res. Commun., **101(3)**, 970-978 (1981).
6. Collinson, E. J., et al., The yeast glutaredoxins are active as glutathione peroxidases. J. Biol. Chem., **277(19)**, 16712-16717 (2002).
7. Dringen, R., et al., The glutathione system of peroxide detoxification is less efficient in neurons than in astroglial cells. J. Neurochem., **72(6)**, 2523-2530 (1999).

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