

Product Information

Cumene hydroperoxide solution

Product Number **C 0524**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₉H₁₂O₂

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

1. Lamb, D. J., et al., Modification of natural and artificial polymer colloids by "topology-controlled" emulsion polymerization. *Biomacromolecules*, **2(2)**, 518-525 (2001).
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).

GCY/RXR 2/03

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