

Product Information

Hexadecane

Product Number **H 0255**

Storage Temperature Room Temperature

Product Description

Molecular Formula: C₁₆H₃₄

Molecular Weight: 226.4

CAS Number: 544-76-3

Melting point: 18 °C¹

Boiling point: 287 °C¹

Density: 0.773 g/ml¹

Synonym: Cetane¹

n-Hexadecane is a straight chain, saturated alkane hydrocarbon. Its research applications include the preparation of emulsions in water, and these have been investigated by microscopy and NMR.^{2,3} Oil in water emulsions have been used to investigate such topics as globular protein-oil interactions and the growth of food-borne pathogenic bacteria in liquid culture.^{4,5} N-hexadecane has also been used as a substrate for the bacterial production of biosurfactants.⁶

n-Hexadecane has been utilized in model studies of the transmembrane domain (TMD) of G protein, as related to the kinetics of poly(ethyleneglycol) (PEG)-mediated fusion of small unilamellar vesicles.⁷ Proteins from wheat seed have been identified as emulsifiers through the use of n-hexadecane.⁸

Precautions and Disclaimer

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

Preparation Instructions

This product is miscible in chloroform (100 µl/ml, 10% v/v), yielding a clear, colorless solution.

References

1. CRC Handbook of Chemistry and Physics, 82nd ed., Lide, D. R., ed., CRC Press (Boca Raton, FL: 2001), p. 3-183.
2. Rang, M. J., and Miller, C. A., Spontaneous Emulsification of Oils Containing Hydrocarbon, Nonionic Surfactant, and Oleyl Alcohol. *J. Colloid Interface Sci.*, **209(1)**, 179-192 (1999).
3. Hills, B. P., et al., NMR Q-space microscopy of concentrated oil-in-water emulsions. *Magn. Reson. Imaging*, **18(3)**, 319-333 (2000).
4. Kim, H. J., et al., Impact of protein surface denaturation on droplet flocculation in hexadecane oil-in-water emulsions stabilized by beta-lactoglobulin. *J. Agric. Food Chem.*, **50(24)**, 7131-7137 (2002).
5. Brocklehurst, T. F., et al., Growth of food-borne pathogenic bacteria in oil-in-water emulsions: II - Effect of emulsion structure on growth parameters and form of growth. *J. Appl. Bacteriol.*, **78(6)**, 609-615 (1995).
6. Noordman, W. H., and Janssen, D. B., Rhamnolipid stimulates uptake of hydrophobic compounds by *Pseudomonas aeruginosa*. *Appl. Environ. Microbiol.*, **68(9)**, 4502-4508 (2002).
7. Dennison, S. M., et al., VSV transmembrane domain (TMD) peptide promotes PEG-mediated fusion of liposomes in a conformationally sensitive fashion. *Biochemistry*, **41(50)**, 14925-14934 (2002).
8. Gilbert, S. M., et al., Identification of the wheat seed protein CM3 as a highly active emulsifier using a novel functional screen. *J. Agric. Food Chem.*, **51(7)**, 2019-2025 (2003).

GCY/RXR 4/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.