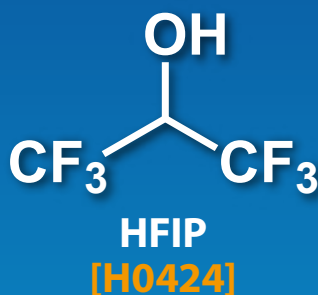


# Fluorinated Alcohol with Unique Properties HFIP



## Features

- Highly polar, thermally stable, UV transparent
- Miscible with water and polar organic solvents
- Low nucleophilicity
- Strong solvating power through hydrogen bonds

## Physical Properties (from literature)

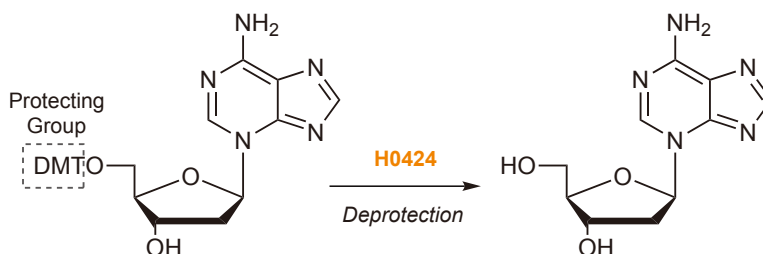
bp: 58.6°C      mp: -4°C      Density: 1.605      pKa: 9.3  
Polarity ( $E^N_T$ ): 1.068 (vs  $E^N_T(\text{Me}_4\text{Si}) = 0$ ,  $E^N_T(\text{water}) = 1$ )  
Nucleophilicity (N): -4.23 (vs  $N(\text{EtOH}) = 0$ )  
Hydrogen bond donor power ( $\alpha$ ): 1.96 (vs  $\alpha(\text{EtOH}) = 0$ )  
Hydrogen bond acceptor power ( $\beta$ ): 0 (vs  $\beta(\text{EtOH}) = 0.77$ )

Review

- 1) J.-P. Bégué, D. Bonnet-Delpon, B. Crousse, *Synlett* **2004**, 18.
- 2) A. J. Phillips, *e-EROS Encycl. Reagents Org. Synth.* **2010**, 1,1,1,3,3,3-Hexafluoro-2-propanol.

## Applications 1

### Deprotecting agent for nucleoside and nucleotide synthesis



N. J. Leonard, Neelima, *Tetrahedron Lett.* **1995**, 36, 7833.

### Additive for oligonucleotides analysis by HPLC/ESI-MS

- A. Apffel, J. A. Chakel, S. Fischer, K. Lichtenwalter, W. S. Hancock, *Anal. Chem.* **1997**, 69, 1320.  
R. Erb, H. Oberacher, *Electrophoresis* **2014**, 35, 1226.

**H0424** Hexafluoroisopropyl Alcohol (= HFIP)

25g / 100g / 500g

# Fluorinated Alcohol with Unique Properties: HFIP

## Applications 2

### Solvent for olefin epoxidation by hydrogen peroxide

M. C. A. van Vliet, I. W. C. E. Arends, R. A. Sheldon, *Synlett* **2001**, 2, 248.  
A. Berkessel, J. A. Adrio, *J. Am. Chem. Soc.* **2006**, 128, 13412.

### Solvent for catalytic oxidation

J.-E. Bäckvall, A. Berkessel, *Modern Oxidation Methods*, 2nd ed., ed. by J.-E. Bäckvall, Wiley-VCH, Weinheim, Germany, **2010**, Chap. 4, pp. 117-145.

### Solvent for metal-catalyzed cyclization

A. Saito, A. Kanno, Y. Hanzawa, *Angew. Chem. Int. Ed.* **2007**, 46, 3931.  
M. Yokota, D. Fujita, J. Ichikawa, *Org. Lett.* **2007**, 9, 4639.

### Solvent for stabilizing radical cation

L. Ebersson, M. P. Hartshorn, O. Persson, F. Radner, *Chem. Commun.* **1996**, 2105.  
*Organofluorine Chemistry*, ed. by K. Uneyama, John Wiley & Sons, Florida, **2008**, pp. 180-184.

### Solvent for radical polymerization

K. Yamada, T. Nakano, Y. Okamoto, *J. Polym. Sci. A Polym.* **1999**, 37, 2677.  
D. Wan, K. Satoh, M. Kamigaito, Y. Okamoto, *Macromolecules* **2005**, 38, 10397.

### Solvent for MALDI-TOF-MS or GPC/SEC analysis of polymers

A. J. Hotelling, T. H. Mourey, K. G. Owens, *Anal. Chem.* **2005**, 77, 750.  
*Encyclopedia of Chromatography*, 2nd ed., ed. by J. Cazes, CRC Press, Florida, **2005**, pp. 1305-1314.

### Stabilizer for $\alpha$ -helical conformation in unfolded proteins and peptides

N. Hirota, K. Mizuno, Y. Goto, *Protein Sci.* **1997**, 6, 416.  
D.-P. Hong, M. Hoshino, R. Kuboi, Y. Goto, *J. Am. Chem. Soc.* **1999**, 121, 8427.

## Related Products

<b>T0435</b> 2,2,2-Trifluoroethanol (= TFE)	25g / 100g / 500g
<b>T0431</b> Trifluoroacetic Acid (= TFA)	25g / 100g / 500g
<b>T1336</b> Trifluoroacetic Acid Sodium Salt	25g / 100g / 500g

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▶▶▶ HFIP



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