



# NOVOLYTE technologies

## Product Data Sheet

### Tetraglyme (CAS: 143-24-8)

Tetraethylene Glycol Dimethyl Ether  $\text{CH}_3\text{-O-(CH}_2\text{CH}_2\text{-O)}_4\text{-CH}_3$

#### A polar aprotic glycol diether with active solvency and formulating versatility

Tetraglyme is unique among ethylene oxide based solvents in that it is aprotic (no hydroxyl functionality). As a result it is a relatively inert solvent with outstanding chemical and thermal stability. Tetraglyme acts as a chelate ligand for cations. The high boiling point allows for easy separation of products from reaction mixtures and provides the ability to conduct reactions at high temperature. Tetraglyme is an excellent solvent for reactions involving  $\text{NaBH}_4$ . Used as a solvent for Organometallic reactions involving reductions, alkylations and in reactions involving alkali metals.

## Physical Properties

Empirical Formula		$\text{C}_{10}\text{H}_{22}\text{O}_5$
Molecular Weight		222.28
Boiling Point	( $^{\circ}\text{C}$ 760 mm Hg)	275
Freezing Point	( $^{\circ}\text{C}$ )	-29.7
Specific Gravity	(20/20 $^{\circ}\text{C}$ )	1.0132
Vapor Pressure	(mm Hg/ 20 $^{\circ}\text{C}$ )	<0.01
Volatility	(n-butylacetate = 100)	<0.1
Viscosity	(cp 20 $^{\circ}\text{C}$ )	4.1
Surface Tension	(dynes/cm 20 $^{\circ}\text{C}$ )	33.8
Specific Heat	(cal/gm/ $^{\circ}\text{C}$ )	0.427
Auto Ignition temp	( $^{\circ}\text{C}$ )	215
Heat of Vaporization	(K cal/mole)	18.7
Heat of Combustion	(K Cal/mole)	1480
Heat of Formation	(K cal/mole)	217
Flash Point	( $^{\circ}\text{C}$ , closed cup)	141
Refractive Index	(20 $^{\circ}\text{C}$ )	1.4330
Appearance		Clear, Colorless
Odor		mild non-residual
<b>Solubility at 25<math>^{\circ}\text{C}</math></b>		
in water		complete
water in		complete

## Process solvent

- As a HFC/CFC lubricant for refrigeration
- As a component of paint/graffiti remover formulations
- For dye fixation
- For solubilization for plastic, textile and printing inks
- For removal of  $\text{H}_2\text{S}$  and other acid gas components
- For absorption of halogenated liquids and gases
- For manufacture of solder pastes

## Reaction solvent

- For manufacture of insecticides
- For anionic polymerizations
- For enhancing rates of nucleophilic substitution
- For sodium borohydride catalyzed reductions

## Features

- Aprotic
- High boiling point
- Water soluble
- High solvency characteristics
- Powerful diluent & cleaner
- Excellent thermal and chemical stability
- Enhances yield and selectivity for  $\text{NaBH}_4$  reductions

Contact info: Dr. Joe Valcho

1-216-867-1057; Customer Service 216-867-1050

[valchoj@novolyte.com](mailto:valchoj@novolyte.com)

[www.novolyte.com](http://www.novolyte.com)