

## 1,4 Butanediol (1,4 BDO)

### Product Description

1,4 BDO is a colorless viscous liquid (at or above room temperature) or white solid (below room temperature).



Formula . . . . . C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>  
Molecular weight . . . . . 90.1  
PRD number . . . . . 30041337  
CAS registry number . . . . . 110-63-4

### Major Industrial Uses

1,4 BDO is used in both the hard and soft segments of polyurethanes: in the hard segment as a chain extender and in the soft segment as polyesterdiols such as polybutylene adipate glycol.

1,4 BDO is used to make a variety of esters, including monomeric plasticizers, the engineering plastic polybutylene terephthalate (PBT) and low molecular weight polyester glycols. The polyester glycols are used as soft segments in polyurethanes and are made by reacting 1,4 BDO with various dibasic acids such as adipic and sebacic acid.

In addition to its use in the soft segments of polyurethanes, 1,4 BDO is used in the hard segments of some polyurethanes, particularly those made with MDI or TDI. In the hard segment or as a crosslinker, 1,4 BDO

produces a good balance between hardness and low temperature flexibility.

### Precautions

Before using 1,4 BDO in any application, the user should review and understand the Safety Data Sheet.

### Specifications

1,4 BDO Specifications	
Color (APHA)	10 (max.)
Water	500 ppm (max.)
Carbonyl number	0.10 mg KOH/g (max.)
Assay	99.5% by weight (min.)

### Typical Properties

1,4 BDO Properties	
Molecular weight	90.1 dalton
Hydroxyl number (calculated)	1240 – 1246 mg KOH/g
Viscosity @ 25°C	72 cP (mPa·s)
Density @ 25°C	1.02 g/mL
Melting point (freezing point)	20°C
Boiling point	228°C

# TERATHANE®

POLYETHER GLYCOL

The LYCRA Company innovates and produces fiber and technology solutions for the apparel and hygiene industries, as well as specialty chemicals used in the spandex and polyurethane value chains. Headquartered in Wilmington, Delaware, The LYCRA Company is recognized worldwide for its innovative products, technical expertise, and unmatched marketing support. The LYCRA Company owns leading consumer and trade brands: LYCRA®, LYCRA HyFit®, LYCRA® T400®, L by LYCRA®, COOLMAX®, THERMOLITE®, ELASPAN®, SUPPLEX®, TACTEL®, and TERATHANE®. While The LYCRA Company's name is new, its legacy stretches back to 1958 with the invention of the original spandex yarn, LYCRA® fiber. Today, The LYCRA Company is focused on adding value to its customers' products by developing unique innovations designed to meet the consumer's need for comfort and lasting performance. For more information, visit [connect.lycra.com](http://connect.lycra.com) and [lycra.com](http://lycra.com).

**NOTICE:** The data and material presented were derived from internal studies and are provided for informational purposes only. The LYCRA Company does not provide any representation or warranty with respect to the standards used or applied in deriving such data and material, the statistical significance of such data and material or the reliability, accuracy or fitness of such data and material for any purpose whatsoever. All such data and material are the property of The LYCRA Company and nothing herein shall be construed as authorization or license to use, print or distribute any such data or material. The LYCRA Company disclaims any liability whatsoever with respect to the use of any of the data or material contained herein.

© 2019 The LYCRA Company. TERATHANE® is a trademark of The LYCRA Company.

## **Contact Information:**

### **Americas**

John Gorcyca  
[john-r.l.gorcyca-1@LYCRA.com](mailto:john-r.l.gorcyca-1@LYCRA.com)  
Phone: + 1-302-683-3074

### **Asia**

Jason Shang  
[jason.shang@LYCRA.com](mailto:jason.shang@LYCRA.com)  
Phone: + 86-21-63876666-2228

### **Europe**

Morteza Shirazi  
[morteza.shirazi@LYCRA.com](mailto:morteza.shirazi@LYCRA.com)  
Phone: + 34-932-379-282