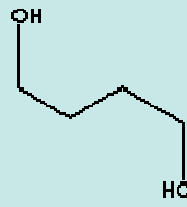


BUTANEDIOL

PRODUCT IDENTIFICATION

CAS NO.	110-63-4	
EINECS NO.	203-786-5	
FORMULA	$\text{HO}(\text{CH}_2)_4\text{OH}$	
MOL WT.	90.12	
H.S. CODE	29053.90	
TOXICITY		
SYNONYMS	1,4-Butylene glycol; 1,4-Tetramethylene glycol; Tetramethylene glycol; 1,4-Dihydroxybutane; Butane-1,4-diol; Butanediol; 1,4-BD; Tetramethylene-1,4-diol;	
DERIVATION		
CLASSIFICATION	DIOLS	

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	clear viscous liquid
MELTING POINT	19 - 20 C
BOILING POINT	228 - 230 C
SPECIFIC GRAVITY	1.017
SOLUBILITY IN WATER	Soluble
pH	
VAPOR DENSITY	3.1
AUTOIGNITION	
NFPA RATINGS	Health: 1; Flammability: 1; Reactivity: 0
REFRACTIVE INDEX	
FLASH POINT	121 C
STABILITY	Stable under ordinary conditions

APPLICATIONS

Alcohols are very weak acids as they lose H^+ in the hydroxyl group. Alcohols undergoes dehydration reaction which means the elimination of water molecule replaced by a pi bond between two adjacent carbon atoms to form alkenes under heating in the presence of strong acids like hydrochloric acid or phosphoric acid. Primary and secondary alcohols can be oxidized to aldehydes and ketones respectively. Carboxylic acids are obtained from oxidation of aldehydes. Oxidation in organic chemistry can be considered to be the loss of hydrogen or gain of oxygen and reduction to gain hydrogen or loss of oxygen. Tertiary alcohols do not react to give oxidation products as they have no H attached to the alcohol carbon. Alcohols undergoes important reactions called nucleophilic substitution in which an electron donor replaces a leaving group, generally conjugate bases of strong acids, as a covalent substitute of some atom. One of important reaction of alcohol is condensation. Ethers are formed by the condensation of two alcohols by heating with sulfuric acid; the reaction is one of dehydration. Almost infinite esters are formed through condensation reaction called esterification between carboxylic acid and alcohol, which produces water. Alcohols are important solvents and chemical raw materials. Alcohols are intermediates for the production of target compounds, such as pharmaceuticals, veterinary medicines, plasticizers, surfactants, lubricants, ore floatation agents, pesticides, hydraulic fluids, and detergents.

1,4-Butanediol is produced based on the method of reacting acetylene with formaldehyde (Reppe process). Lyondell's feedstock is propylene oxide. Most end use applications, such as spandex fibers and engineering plastics, are maturing. But as the industry shifts from the acetylene-based Reppe process to cheaper routes based on propylene, butadiene or butane, better process economics

should improve operating margins, they are still growing faster. 1,4-Butanediol is used in as a solvent and in coatings. It is used as a raw material to produce tetrahydrofuran (THF), polybutylene terephthalate (PBT) resins, gamma-butyrolactone (GBL), polyurethanes and other target compounds and pharmaceuticals

SALES SPECIFICATION

APPEARANCE	clear viscous liquid
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PURITY	99.5% min
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MELTING POINT	19 - 20 C
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PEROXIDE CONTENT	20ppm max
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COLOR, APHA	10 max
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WATER	0.05% max
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TRANSPORTATION

PACKING	200kgs in Drum
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HAZARD CLASS	
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UN NO.	
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OTHER INFORMATION

Hazard Symbols: XN N, Risk Phrases: 22, Safety Phrases: 24/25