

## Safety Data Sheet

### Section 1 - Product and Company Identification

**MSDS Name:** 2-Butene-1,4-diol

**CAS NO:** 110-64-5

**Synonyms:**

**Company Identification:** Hefei Zhaobo Technology Co., Ltd.

### Section 2 – Hazards Identification

#### Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn Harmful R22, R36/37/38

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### Label elements

## Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Warning

### Hazard statement(s)

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

### Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Other hazards**-none

## Section 3 – Composition/Information on Ingredients

CAS#	Chemical Name	%	EINECS#	Classification
110-64-5	2-Butene-1,4-diol	98.5	228-085-1	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H302, H315, H319, H335 Xn, R22 - R36/37/38

For the full text of the H-Statements mentioned in this Section, see Section 16.

## Section 4 - First Aid Measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## Section 5 - Fire Fighting Measures

**Advice for firefighters:** Wear self contained breathing apparatus for fire fighting if necessary.

**Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## Section 6 - Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions:** Do not let product enter drains.

**Spills/Leaks:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

## Section 7 - Handling and Storage

**Handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

**Storage:** Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

## Section 8 - Exposure Controls, Personal Protection

Contains no substances with occupational exposure limit values.

### **Personal Protective Equipment**

**Eyes:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Clothing:** Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respirators:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## Section 9 - Physical and Chemical Properties

**Physical State:** clear, viscous, liquid

**Color:** light yellow.

**Odor:** Not available.

**pH:** Not available.

**Vapor Pressure:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 235 °C - lit.

**Freezing/Melting Point:** 4 - 10 °C - lit.

**Autoignition Temperature:** Not available.

**Flash Point:** 127 °C - closed cup

**Explosion Limits:Lower:** Not available.

**Explosion Limits Upper:** Not available.

**Decomposition Temperature:** Not available.

**Solubility in water:** Not available.

**Specific Gravity/Density:** 1.072 g/cm<sup>3</sup> at 20 °C

**Molecular Formula:** C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>

**Molecular Weight:** 88.11

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:** Incompatible materials.

**Incompatibilities with Other Materials:** Strong oxidizing agents, Strong reducing agents, Acid chlorides, Acid anhydrides, Chloroformates, Halogens, Phosphorus halides

**Hazardous Decomposition Products:** Carbon oxides.

## Section 11 - Toxicological Information

**RTECS#:** CAS# 110-64-5: None listed

**LD50/LC50:** RTECS: LD50 Oral - rat - 1,250 mg/kg

**Carcinogenicity:** 2-Butene-1,4-diol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

## Section 12 - Ecological Information

Not available.

## Section 13 - Disposal Considerations

**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product.

## Section 14 - Transport Information

**IATA :** Not regulated as a dangerous material.

**RID/ADR:** Not regulated as a dangerous material.

**IMO:** Not regulated as a dangerous material.

## Section 15 - Regulatory Information

This safety data sheet complies with the requirements of Regulation (EC) No 1907/2006

## Section 16 - Other Information

**Full text of H-Statements referred to under sections 2 and 3.**

Acute Tox. Acute toxicity

Eye Irrit. Eye irritation

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Skin Irrit. Skin irritation

**Full text of R-phrases referred to under sections 2 and 3**

Xn Harmful

R22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

**MSDS Creation Date:** 23/09/2010

**Revision #1 Date:** 22/05/2013

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.*