

Creation Date 15-Nov-2012

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Revision Number 1

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description:

2-Butene-1,4-diol

Cat No.

395440000; 395440010; 395440250; 395441000

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use

Laboratory chemicals

Uses advised against

No Information available

Details of the supplier of the safety data sheet

Company

Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

Emergency Telephone Number

For information in the US, call: 001-800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300

CHEMTREC Phone Number, Europe: 001-703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single exposure)	Category 3

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

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

Symbol(s)

Xn - Harmful

R-phrases

R22 - Harmful if swallowed

Risk Combination Phrases

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

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SECTION 2. HAZARDS IDENTIFICATION

Label Elements



Signal Word

Warning

Hazard Statements

H319 - Causes serious eye irritation
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H302 - Harmful if swallowed

Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
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

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
2-Butene-1,4-diol 110-64-5	EEC No. 203-787-0	>95	110-64-5	Xn; R22 Xi; R36/37/38	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)	-

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

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SECTION 4. FIRST AID MEASURES**Description of first aid measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Ingestion

Do not induce vomiting. Call a physician or Poison Control Center immediately.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

Notes to Physician

Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES**Extinguishing media****Suitable Extinguishing Media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment.

Environmental precautions

Should not be released into the environment.

Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal..

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SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL)

No information available.

Predicted No Effect Concentration (PNEC)

No information available.

Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye Protection

Safety glasses with side-shields

Hand Protection

Protective gloves

Skin and body protection

Long sleeved clothing

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Liquid

pH

6 10 % aq. solution

Vapor Pressure

1.5 mbar @ 60°C

Boiling Point/Range

234 - 242°C / 453.2 - 467.6°F @ 760 mmHg

Melting Point/Range

10°C / 50°F

Flash Point

127°C / 260.6°F

Autoignition Temperature

335°C / 635°F

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Specific Gravity 1.075
Molecular Formula C₄ H₈ O₂
Molecular Weight 88.11

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions . None under normal processing..

Conditions to Avoid

Incompatible products, Excess heat.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Component Information

Component
2-Butene-1,4-diol

LD50 Oral	LD50 Dermal	LC50 Inhalation (Dust)
856 mg/kg (Rat)		

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.
Mutagenic Effects No information available
Reproductive Effects No information available.

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Developmental Effects No information available.
Target Organs Blood Eyes Skin Liver, kidney, and respiratory system
Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information
Endocrine Disruptor Information None known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
2-Butene-1,4-diol	290 mg/L EC50 = 72 h		EC50 > 10000 mg/L 17 h	65.2 mg/L EC50 = 48 h

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Component	log Pow
2-Butene-1,4-diol	-0.9

Mobility in soil

No information available.

Results of PBT and vPvB assessment

Other adverse effects

No information available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to local recyclers for disposal

SECTION 14. TRANSPORT INFORMATION

IMDG/IMO

Not regulated

ADR

Not regulated

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SECTION 14. TRANSPORT INFORMATION

IATA

Not regulated

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
2-Butene-1,4-diol	203-787-0	-		X	X	-	X	X	X	X	X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

AICS - Inventory of Chemical Substances

KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

SECTION 16. OTHER INFORMATION

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

No information available.

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Revision Summary

Reason for revision

Not applicable

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

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SECTION 16. OTHER INFORMATION**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet