

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT CODE H0142
PRODUCT NAME 2,3-BUTANEDITHIOL
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FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Classification of the substance or mixture



GHS02



GHS07

Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2A	H319 Causes serious eye irritation.
STOT SE 3	H335 May cause respiratory irritation.
Flam. Liq. 3	H226 Flammable liquid and vapor.

Label elements

Harmful in contact with skin or if inhaled.

GHS label elements

Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS07

Signal word

Warning

Hazard statements

H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion proof electrical/ventilating/lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/clothing/face and eye protection.
P303+P361+P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a poison center or a doctor if you feel unwell.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P337+P313 If skin or eye irritation occurs get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P370+P378 In case of fire: use dry sand, dry chemical or alcohol resistant foam for extinction.
P403+P233+P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 2

Fire = 2

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 2

Fire = 2

Reactivity = 0

Other hazards**Results of PBT and vPvB assessment****PBT:**

Not applicable.

vPvB:

Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS:**Chemical characterization: Substances****CAS No.:** 4532-64-3**Description:** Ethyl-(3-Methylthio) Propionate**Identification number(s)****EC No.:** 224-870-8**Hazardous components:**

Component	Classification	Concentration
2,3-Butanedithiol		
	Flam. Liq. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H226, H315, H319, H335	-

4. FIRST-AID GUIDE:**Description of first aid measures****After inhalation:**

If breathed in, move person to fresh air. In case of unconsciousness place patient stably in side position for transportation. Consult a physician.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. FIRE-FIGHTING GUIDE:

Extinguishing media

Suitable extinguishing agents:

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. CO₂ or extinguishing powder. Fight larger fires with alcohol resistant foam.

Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides.

Advice for firefighters

Protective equipment:

No special measures required.

Additional information

Cool endangered receptacles with water spray.

Collect contaminated firefighting water separately. It must not enter the sewage system.

6. ACCIDENTAL RELEASE GUIDE:

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe area. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and material for containment and cleaning up:

Contain spillage and then collect with an electrically protected vacuum cleaner or by a wet-brushing and place in container for disposal according to local regulations.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. HANDLING AND STORAGE:**Handling:****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Information about protection against explosions and fires:

Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

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

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Keep receptacle tightly sealed.

Specific end use(s)

No further relevant information available.

8. EXPOSURE AND PERSONAL PROTECTION:**Additional information about design of technical systems:**

No further data; see item 7.

Control parameters**Components with limit values that require monitoring at the workplace:**

Not required.

Additional information:

The lists that were valid during the creation were used as a basis.

Exposure controls**Personal protective equipment:****General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Information on basic physical and chemical properties

General Information	
Appearance:	
Form:	Liquid
Color:	Colorless
Odor:	Not determined.
Odour threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	86-87 °C (187-189 °F)

Flash point:	52°C (126 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Not determined.
Danger of explosion:	Not determined.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density at 25 °C (77 °F):	0.995 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Other information	No further relevant information available.

10. STABILITY AND REACTIVITY:

Reactivity

Chemical stability

Thermal decomposition/conditions to be avoided:

No decomposition if used according to specifications.

Possibility of hazardous reactions

No dangerous reactions known.

Conditions to avoid

Heat, flames, and sparks.

Incompatible materials:

Strong oxidizing agents, strong bases.

Hazardous decomposition products:

No dangerous decomposition products known.

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity:

Primary irritant effect:

On the skin:

Irritant to skin and mucous membranes.

On the eye:

Irritating effect.

Sensitization:

No sensitizing effects known.

Additional toxicological information:**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

Substance is not listed.

NTP (National Toxicology Program)

Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12. ECOLOGICAL INFORMATION:**Toxicity****Aquatic toxicity:**

No further relevant information available.

Persistence and degradability

No further relevant information available.

Behavior in environmental systems:**Bioaccumulative potential**

No further relevant information available.

Mobility in soil

No further relevant information available.

Additional ecological information:**General notes:**

Generally not hazardous for water.

Results of PBT and vPvB assessment**PBT:**

Not applicable.

vPvB:

Not applicable.

Other adverse effects

No further relevant information available.

13. DISPOSAL RECOMMENDATIONS:**Waste treatment methods****Recommendation:**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Uncleaned packaging:**Recommendation:**

Disposal must be made according to official regulations.

14. TRANSPORTATION INFORMATION:

UN-Number DOT, ADR, IMDG, IATA	UN3336
UN proper shipping name DOT ADR IMDG, IATA	Mercaptans, liquid, flammable, n.o.s. MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. (2,3-butanedithiol) EMS No.: F-E, S-D
Transport hazard class(es) DOT, ADR, IMDG, IATA Class	3
Packing group DOT, ADR, IMDG, IATA	III
Environmental hazards: Marine pollutant:	No
Special precautions for user	Warning: Flammable liquids
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Quantity limitations	Not applicable.
ADR Excepted quantities (EQ)	Not applicable.
IMDG Limited quantities (LQ) Excepted quantities (EQ)	Not applicable.
UN "Model Regulation":	Not applicable.

15. REGULATORY INFORMATION:

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

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act):

Substance is not listed.

Proposition 65

Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

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Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION:

The information in this SDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this

product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the SDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the SDS. The user should review these regulations to ensure full compliance.

Prepared By: M&U International LLC

REVISED: 07/17/2017