



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT CODE N0252

PRODUCT NAME NATURAL ETHYL-3-HYDROXY BUTYRATE

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FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Classification of the substance or mixture

Flam. Liq. 4 H227 Combustible liquid

Label elements

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

Not applicable.

Signal word

Warning

Hazard Statements

H227 Combustible liquid.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/clothing/face and eye protection.
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.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 0

Fire = 2

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

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.: 5405-41-4

Description: ethyl 3-hydroxybutyrate

Identification number(s)

EC No.: 226-456-2

Hazardous components:

Component	Classification	Concentration
None		
		-

4. FIRST-AID GUIDE:

Description of first aid measures

After inhalation:

If breathed in, move person into fresh air. Consult a doctor.

After skin contact:

Generally the product does not irritate the skin.

After eye contact:

Rinse opened eye for several minutes under running water.

After swallowing:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist call a 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:**

CO2 or extinguishing powder. Fight larger fires with alcohol resistant foam.

Special hazards arising from the substance or mixture

No further relevant information available.

Advice for firefighters**Protective equipment:**

No special measures required.

Additional information

No special measures required.

6. ACCIDENTAL RELEASE GUIDE:**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Environmental precautions:

Do not allow product to enter sewers/surface or ground water.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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**

No special precautions necessary.

Information about protection against explosions and fires:

Keep ignition sources away – do not smoke. Protect against electrostatic charges.

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

No special requirements.

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Keep receptacle tightly sealed in dry, well-ventilated place.

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 to pale yellow
Odor:	Fruit-like
Odour threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	170°C (338 °F)
Flash point:	64°C (147 °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 20 °C (68 °F):	1.014 g/cm ³ (8.462 lbs/gal)
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

No further relevant information available.

Incompatible materials:

No further relevant information available.

Hazardous decomposition products:

No dangerous decomposition products known.

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity:

Primary irritant effect:

On the skin:

No irritant effect.

On the eye:

No 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:

Water hazard class 1 (self-assessment): Slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation:

Disposal must be made according to official regulations.

14. TRANSPORTATION INFORMATION:

UN-Number DOT, ADR, IMDG, IATA	Not applicable.
UN proper shipping name DOT ADR IMDG, IATA	Not applicable.
Transport hazard class(es) DOT, ADR, IMDG, IATA Class	Not applicable.
Packing group DOT, ADR, IMDG, IATA	Not applicable.
Environmental hazards: Marine pollutant:	No.
Special precautions for user Danger code: EMS Number:	None.
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.

GHS label elements

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Hazard pictograms

Signal word

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P501

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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

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