



## SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION:

<b>PRODUCT CODE</b>	A0055
<b>PRODUCT NAME</b>	ETHYL 3-HYDROXY BUTYRATE
<b>SUPPLIER</b>	Shanghai M & U International Trade Co., Ltd. Rm 1717, No 598 North NuJiang Road 200333 Shanghai, China +86-21-32515501 32515502 sales@mu-intel.com

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

### 2. HAZARD IDENTIFICATION:

**Classification of the substance or mixture**  
H227 Combustible liquid.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Flammable.

**Information concerning particular hazards for human and environment:**  
Not applicable.

**Label elements**  
**GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**  
Not Applicable

**Signal word**  
Warning

**Hazard statements**  
Combustible liquid.

**Precautionary statements**  
Keep away from flames and hot surfaces. – No smoking.  
Wear protective gloves / eye protection / face protection.  
In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.  
Store in a well-ventilated place. Keep cool.

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. Description**

5405-41-4 ethyl 3-hydroxybutyrate

**Identification number(s)**

**EC number:**

226-456-2

**4. FIRST-AID GUIDE:**

**Description of first aid measures**

**After inhalation:**

Supply fresh air; consult doctor in case of complaints.

**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:**

If symptoms persist consult 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:**

CO<sub>2</sub>, powder or alcohol resistant foam.

**For safety reasons unsuitable extinguishing agents:**

Water with full jet

**Special hazards arising from the substance or mixture**

No further relevant information available.

**Advice for firefighters****Protective equipment:**

No special measures required.

**Additional information**

Cool endangered receptacles with water spray.

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

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

Wear protective equipment. Keep unprotected persons away.

**Environmental precautions:**

Do not allow 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:**

**Precautions for safe handling**

No special precautions are necessary if used correctly.

**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.

**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:**

Wash hands before breaks and at the end of work.

**Breathing equipment:**

Not required.

**Protection of hands:**

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	
<b>Appearance:</b>	
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless to pale yellow
<b>Odor:</b>	Fruit-like
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	Not determined.
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	170 °C (338 °F)
<b>Flash point:</b>	77 °C (171 °F)
<b>Flammability (solid, gaseous):</b>	Not applicable.
<b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
<b>Auto igniting:</b>	Not determined.
<b>Danger of explosion:</b>	Not determined.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>Vapor pressure:</b>	Not determined.
<b>Density at 20 °C (68 °F):</b>	1.014 g/cm <sup>3</sup> (8.462 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	0.0 %
<b>Other information</b>	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.

**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.

**Un cleaned packaging:**

**Recommendation:**

Disposal must be made according to official regulations.

**14. TRANSPORTATION INFORMATION:**

<b>UN-Number</b> DOT, ADR, ADN, IMDG, IATA	Not Regulated
<b>UN proper shipping name</b> DOT, ADR, ADN, IMDG, IATA	Not Regulated
<b>Transport hazard class(es)</b> DOT, ADR, ADN, IMDG, IATA Class	Not Regulated
<b>Packing group</b> DOT, ADR, IMDG, IATA	Not Regulated
<b>Environmental hazards:</b> <b>Marine pollutant:</b>	No
<b>Special precautions for user</b>	Not applicable.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	Not dangerous according to the above specifications.
<b>DOT</b> <b>Quantity limitations</b>	On passenger aircraft/rail: On cargo aircraft only: -
<b>ADR</b> <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<b>IMDG</b> <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<b>UN "Model Regulation":</b>	-

## 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 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**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**

Not Applicable

**Signal word**

Warning

**Hazard statements**

Combustible liquid.

**Precautionary statements**

Keep away from flames and hot surfaces. – No smoking.

Wear protective gloves / eye protection / face protection.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**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:** 02/17/2015