



## Material Safety Data Sheet (2001/58/EC)

### **1. Identification of the substance/preparation and of the company**

- Date of issue: March 3, 2003
- Product name: 2039 Ethyl 3-hydroxybutyrate Synthetic
- Recommended use: Flavorings
- Manufacturer: Advanced Biotech, Paterson, NJ 07524
- Emergency telephone no.: 1-800-535-5053 (info trac)  
1-352-323-3500 (international)

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### **2. Composition/information on ingredients**

- Chemical identity: 3-Hydroxybutyric acid Ethyl Ester
- Molecular formula:  $C_6H_{12}O_3$
- CAS No.: 5405-41-4
- EC No.: 226-456-2
- EC-Index-No.:

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### **3. Hazards identification**

This material requires no labeling. Please observe the safety information in this msds.

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### **4. First aid measures**

- After inhalation: Provide with fresh air
- After skin contact: Take off all contaminated clothing, wash with plenty of water
- After eye contact: Rinse thoroughly with plenty of water and seek medical advice
- After swallowing: Immediately drink plenty of water; Seek medical advice and show this container or label

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### **5. Fire-fighting measures**

- **Suitable extinguishing media:**  
Carbon Dioxide (CO<sub>2</sub>), foam, powder
- **Special protective equipment for fire fighting:**  
Do not stay in danger zone without self-contained breathing apparatus.
- **Other information:**  
Cool container with water spray from a safe distance. Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or groundwater. Keep away from sources of ignition.
- **Special risks:**  
Combustible. Vapors heavier than air. Forms explosive mixtures with air at ambient temperatures. Development of hazardous combustion gases or vapors possible in the event of fire.



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## 6. Accidental release measures

- **Person-related precautionary measures:**  
Do not inhale vapors/aerosols. Ensure supply of fresh air in enclosed rooms.
- **Environmental-protection measures:**  
Do not allow to enter sewage system.
- **Procedures for cleaning / absorption:**  
Take up with liquid-absorbent material. Forward for disposal. Clean affected area.

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## 7. Handling and storage

- **Handling:**  
Take precautionary measures against static discharges. Keep away from source of ignition. When using do not eat or drink.
- **Storage:**  
Tightly closed, in a well-ventilated place. Keep away from source of ignition - no smoking.

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## 8. Exposure controls and personal protection

- **Exposure limits**  
Avoid contact with eyes, skin, clothing, and breathing vapor.
- **Personal protective equipment:**  
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
  - Respiratory protection: Required when vapors/aerosols are generated.
  - Eye protection: Wear eye/ face protection
  - Hand protection: Wear suitable gloves
  - Industrial hygiene: Change contaminated clothing. Application of skin-protective barrier cream recommended. Wash hands after working with substance.

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## 9. Physical and chemical properties:

- Form: Liquid
- Color: Colorless to pale yellow
- Odor: Fruity, grape
- pH value at 10 g/l H<sub>2</sub>O: No information available
- Boiling point: 170°C
- Flash point: 64.4°C
- Melting point: N/a
- Explosive properties: No information available
- Lower explosion limit: No information available
- Upper explosion limit: No information available
- Ignition temperature: No information available
- Oxidizing properties: Not oxidizing; not flammable



- Vapor pressure: N/a
- Density/specific gravity@20°C: 1.009-1.019
- Solubility in Water: Insoluble
- Organic solvents: Soluble

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## 10. Stability and reactivity

- Conditions to be avoided: Heating
- Substances to be avoided: Strong oxidizing agents
- Hazardous decomposition products: Carbon monoxide, carbon dioxide
- Further information: No information available

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## 11. Toxicological information

- LD<sub>50</sub> oral, rat: No information available
- LD<sub>50</sub> dermal, rabbit: No information available
- LD<sub>50</sub> inhalation, rat: No information available
- Further toxicological information: May be harmful if inhaled, swallowed, or if absorbed through the skin.

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## 12. Ecological information

- **Biologic degradation**  
Biodegradation: No information available
- **Ecotoxic effects**  
Biological effects: No information available  
Fish toxicity: No information available  
Bacterial toxicity: No information available  
Daphnia toxicity: No information available  
Algal toxicity: No information available
- **Behavior in environmental compartments**  
Distribution: log P(oct): No information available
- **Further ecological data**  
Do not allow to enter water, drain or soil.

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## 13. Disposal considerations

- **Product:**  
according to official local regulations.
- **Packing:**  
according to official local regulations.

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## 14. Transport information

- Not subject to transport regulations.



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## 15. Regulatory information

- **Labeling according to EC Directives:**

Symbol:	-	-
R-phrases:	-	-
S-phrases:	-	-
EC-no.:		226-456-2

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## 16. Other information

- The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

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