



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

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

- Date of issue: Jan. 3, 2005
- Product name: 1203 Ethyl formate Natural
- 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: Formic acid, ethyl ester
- Molecular formula:  $C_3H_6O_2$
- CAS No.: 109-94-4
- EC No.: 203-721-0
- EC-Index-No.: 607-015-00-7

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### **3. Hazards identification**

Flammable. Harmful by inhalation and if swallowed. Irritating to eyes and respiratory system.

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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 ( $CO_2$ ), 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:**  
Flammable. 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
- pH value at 10 g/l H<sub>2</sub>O: 4.1
- Boiling point: 54°C
- Flash point: -19°C
- Melting point: N/a
- Explosive properties: No information available
- Lower explosion limit: 2.7 Vol%
- Upper explosion limit: 16.5 Vol%
- Ignition temperature: 440°C
- Oxidizing properties: Not oxidizing; Flammable
- Vapor pressure: 256 hPa



- Density/specific gravity@20°C: 0.915-0.930
- 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: Highly inflammable;  
Explosible with air in a vaporous/gaseous state.

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## 11. Toxicological information

- LD<sub>50</sub> oral, rat: 1850 mg/kg
- LD<sub>50</sub> dermal, rabbit: 20000 mg/kg
- LD<sub>50</sub> inhalation, rat: N/a
- 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: DOC>70%; BOD>60%; BOD5 to COD>50%
- **Ecotoxic effects**  
Biological effects: Toxic for aquatic organisms.  
aquatic organisms LC 50 : 100 mg/l /96 h  
Fish toxicity: No information available  
Bacterial toxicity: No information available  
Daphnia toxicity: < 120 mg/l  
Algal toxicity: < 100 mg/l
- **Behavior in environmental compartments**  
Distribution: log P(oct): .23
- **Further ecological data**  
Do not allow to enter water, drain or soil.

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## 13. Disposal considerations

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



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## 14. Transport information

- UN-no. / Name: UN1190 / Ethyl Formate
- IMDG - Classification: 3 / UN1190 / PGII
- IATA - Classification: 3 / UN1190 / PGII
- ADR - Classification: 3 / UN1190 / PGII

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## 15. Regulatory information

- **Labeling according to EC Directives:**

Symbol:	Xn	Harmful
R-phrases:	F 11	Highly flammable Highly flammable.
	20/22	Harmful by inhalation and if swallowed.
	36/37	Irritating to eyes and respiratory system.
S-phrases:	9	Keep container in a well- ventilated place.
	16	Keep away from sources of ignition - No smoking.
	24	Avoid contact with skin.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	33	Take precautionary measures against static discharges.
EC-no.:		203-721-0

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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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