1 Identification

- **Product identifier**
  - **Trade name:** Butyraldehyde natural
  - **Product number:** 1074
  - **CAS Number:** 123-72-8
  - **EC number:** 204-646-6
  - **Index number:** 605-006-00-2
- **Application of the substance / the mixture** Food flavorings
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Advanced Biotech
    10 Taft Road
    Totowa, NJ 07512 USA
  - **Information department:**
    Product safety department
    sarfa@adv-bio.com
  - **Emergency telephone number:**
    1(800)535-5053 (Info Trac)
    1(352)323-3500 (International)
    During normal business hours: 1(973)339-6242

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS02 Flame
    Flam. Liq. 2 H225 Highly 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**
  - GHS02

- **Signal word** Danger
- **Hazard statements**
  - H225 Highly flammable liquid and vapor.
- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

(Continued on page 2)
Trade name: Butyraldehyde natural

- Classifications:
  - Classification system:
  - NFPA ratings (scale 0 - 4):
    - Health = 1
    - Fire = 4
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4):
    - Health = 1
    - Fire = 4
    - Reactivity = 0
  - Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  123-72-8 butyraldehyde
- Identification number(s)
  - EC number: 204-646-6
  - Index number: 605-006-00-2

4 First-aid measures

- 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. If symptoms persist, consult a doctor.
  - After swallowing: 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 measures

- 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.
Trade name: Butyraldehyde natural

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.

Accidental release measures
- Personal precautions, protective equipment and emergency procedures:
  Wear protective equipment. Keep unprotected persons away.
  Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Dilute with plenty of water.
  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).
  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.

Handling and storage
- Handling:
  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: Store in a cool location.
  Information about storage in one common storage facility: Not required.
  Further information about storage conditions:
    Keep receptacle tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
  Specific end use(s): No further relevant information available.

Exposure controls/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:
  123-72-8 butyraldehyde
    WEEL | Long-term value: 25 ppm
- Additional information: The lists that were valid during the creation were used as a basis.
41.0 

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. 
Avoid contact with the eyes and skin. 
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 
Appearance: 
Form: Liquid 
Color: Colorless 
Odor: Pungent 
Odour threshold: Not determined. 

pH-value: Not determined. 
Change in condition 
Melting point/Melting range: -97 °C (-143 °F) 
Boiling point/Boiling range: 75 °C (167 °F) 
Flash point: -5 °C (23 °F) 
Flammability (solid, gaseous): Not applicable. 
Ignition temperature: 190 °C (374 °F) 
Decomposition temperature: Not determined. 
Auto igniting: Not determined.
Trade name: Butyraldehyde natural

### 4.1 Danger of explosion
- **Product is not explosive.** However, formation of explosive air/vapor mixtures are possible.

### 4.2 Explosion limits
- **Lower:** 1.4 Vol %
- **Upper:** 12.5 Vol %

### 4.4 Vapor pressure at 20 °C (68 °F):
- 121 hPa (91 mm Hg)

### 4.5 Density at 20 °C (68 °F):
- 0.82 g/cm³ (6.843 lbs/gal)

### 4.6 Relative density
- Not determined.

### 4.7 Vapour density
- Not determined.

### 4.8 Evaporation rate
- Not determined.

### 4.9 Solubility in / Miscibility with Water at 20 °C (68 °F):
- 71 g/l

### 4.10 Partition coefficient (n-octanol/water):
- Not determined.

### 4.11 Viscosity
- **Dynamic:** Not determined.
- **Kinematic:** Not determined.
- **Organic solvents:** 0.0 %

### 4.12 Other information
- No further relevant information available.

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### 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.

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### 11 Toxicological information

#### Information on toxicological effects

#### Acute toxicity:

#### LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>2490 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>3560 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h 1740 mg/l (rat)</td>
</tr>
</tbody>
</table>

#### Primary irritant effect:
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
### 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 (Assessment by list): 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 considerations

- **Waste treatment methods**
  - Recommendation:
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings**:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: UN1129

- **UN proper shipping name**
  - DOT: Butyraldehyde
  - ADR: 1129 Butyraldehyde
  - IMDG, IATA: BUTYRALDEHYDE

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Trade name: Butyraldehyde natural

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
</tr>
<tr>
<td>Class: 3</td>
</tr>
<tr>
<td>Label: 3</td>
</tr>
</tbody>
</table>

| ADR                       |
| Class: 3 (F1)             |
| Label: 3                  |

| IMDG, IATA                |
| Class: 3                  |
| Label: 3                  |

| Packing group             |
| DOT, ADR, IMDG, IATA      | II |

| Environmental hazards:    |
| Marine pollutant:         | No |

| Special precautions for user |
| Danger code (Kemler):       | 33 |
| EMS Number:                 | F-E,S-D |

| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code |
|                                                                           | Not applicable. |

| Transport/Additional information: |
| DOT                               |
| Quantity limitations:             |
| On passenger aircraft/rail: 5 L   |
| On cargo aircraft only: 60 L      |

| ADR                               |
| Excepted quantities (EQ):         |
| Code: E2                          |
| Maximum net quantity per inner packaging: 30 ml |
| Maximum net quantity per outer packaging: 500 ml |

| IMDG                              |
| Limited quantities (LQ):          | 1L |
### 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 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**
  
  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.

  ![GHS02](image)

- **Signal word** Danger

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Continued on page 9
Trade name: Butyraldehyde natural

- **Hazard statements**
  H225 Highly flammable liquid and vapor.

- **Precautionary statements**
  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P403+P235 Store in a well-ventilated place. Keep cool.
  P501 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**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Product safety department
- **Contact:** Sidney Arfa
- **Date of preparation / last revision** 06/25/2015 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2

US