1. Identification

**Name**  
Butyl levulinate

**CAS Number**  
2052-15-5

**Recommendation for the chemical and restrictions on use**

**Applications**  
Research and development/ Performance chemical/ Industrial solvent.

**Restrictions**  
No specific uses advised against are identified.

**Supplier's Details**

InKemia Green Chemicals, Inc.  
1213 West Loop North Suite 140, Houston, TX 77005  
+1 (713) 909-7717  
web@inkemiagreenchemicals.com

**Emergency contact number**

InKemia Green Chemicals, Inc.  
Tel: +1 (713) 909-7717  
For emergency calls only.

2. Hazards

**Classification of the substance or mixture**

**Classification**  
Combustible liquid (Category 4), H227.

**Label elements**

**Pictogram**  
None

**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/protective clothing/eye protection/face protection.  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403 + P235 - Store in a well-ventilated place. Keep Cool  
P501 - Dispose of contents/container to an approved waste disposal plant

**Other Hazards**  
This product may be harmful to aquatic life.

3. Composition/information on ingredients

www.inkemiagreenchemicals.com  
+1 (713) 909-7717  
1213 West Loop North, Suite #140, Houston, TX 77005
Substances

Chemical Name: Butyl levulinate

Synonyms: Butyl 4-oxopentanoate; n-Butyl levulinate; Butyl laevulinate; Pentanoic acid, 4-oxo-, butyl ester.

CAS Number: 2052-15-5

Molecular Formula: C9H16O3

Molecular Weight (g/mol): 172.224

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl 4-oxopentanoate</td>
<td>Flam. Liq. 4; H227</td>
<td>&lt;=100 % wt</td>
</tr>
</tbody>
</table>

Note: For the full text of the H-Statements mentioned in this Section, see Section 16.

Impurities and stabilizing additives: No data available.

Mixtures: Not applicable.

4 - First-aid measures

Description of first aid measures

General information: Show this Safety Data Sheet to the medical personnel.

Inhalation: Remove from exposure, moving to fresh air. Artificial respiration and oxygen are necessary if not breathing. Consult a physician.

Ingestion: Wash out mouth with water if the person is conscious. Do not induce vomiting. Consult a physician.

Skin contact: Immediately wash skin with soap and copious amounts of water.

Eye contact: Immediately irrigate with copious amounts of water for 15 minutes. Consult a physician.

Protection of first-aiders: First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information: The severity of the symptoms described might vary depending on the concentration and length of exposure.

Inhalation: No data available.
Ingestion
No data available.

Skin contact
No data available.

Eye contact
No data available.

**Indication of immediate medical attention and special treatment need**

**Notes for the doctor**
Treat symptomatically

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**5 – Fire-fighting measure**

**Extinguishing media**

**Suitable extinguisher media**
Dry chemical, carbon dioxide or water fog. Do not use water directly on the fire.

**Unsuitable extinguisher media**
No data available.

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

**Specific hazards**
Carbon oxides.

**Advice for firefighters**

**Protective actions during firefighting**
Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control runoff water by containing and keeping it out of sewers and watercourses. If the risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighting**
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots, and gloves provide a basic level of protection for chemical incidents.

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**6 – Accidental release measures**

**Personal precautions, protective equipment, and emergency procedures**

**Personal Precautions**
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into the spilled material.

**Environmental precautions**

Environmental precautions

---
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleanup**

**Methods for cleaning**

Contain and remove the spillage, soaking up the residue with non-flammable absorbent. Place in an adequate container for immediate disposal. Eliminate sources of ignition. For waste disposal see Section 13.

**Reference to other sections**

For personal protection see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For disposal see section 13.

---

**7 – Handling and storage**

**Precautions for safe handling**

**Usage precautions**

Wear protective clothing as described in Section 8 of this safety data sheet. Keep container tightly sealed when not in use. Do not handle until all safety precautions have been read and understood. Do not reuse empty containers. For precautions see Section 2.

**Advice on general occupational hygiene**

Promptly wash if in contact with skin. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

**Conditions for safe storage, including any Incompatibilities**

**Storage precautions**

Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well-ventilated place. Keep containers upright. Protect containers from damage. Keep in a fresh and dry place, avoiding direct sunlight. Keep container tightly sealed.

**Storage class**

Miscellaneous hazardous material storage. Preferably in a well-ventilated solvent cabinet.

**Specific end uses**

The identified uses for this product are in Section 1.

---

**8 – Exposure controls/personal protection**

**Control parameters**

www.inkemiagreenchemicals.com  11 (713)-909-7717  1213 West Loop North, Suite #140, Houston, TX 77055
**Occupational exposure limits:**

Contains no substances with occupational exposure limit values.

**Protective equipment**

**Engineering control measures**

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Eye/Face protection**

Wear safety glasses with side-shields.

**Hand protection**

Avoid skin contact. Wear protective clothes and solvent resistant gloves (nitrile).

**Other skin and body protection**

Use engineering controls to reduce air contamination to permissible exposure level. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapor contact.

**Hygiene measures**

Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with a multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Environmental exposure**

Do not discharge into drains. Avoid the release of this product into the environment.

---

**9 – Physical and chemical properties**
SDS:  Butyl levulinate

**Appearance**  Clear yellow.  
**Odor threshold**  No data available.  
**Melting point/Freezing point, °C**  No data available.  
**Boiling point, °C**  107 @ 0.073 kPa  
**Flash point**  92  
**Evaporation rate**  No data available.  
**Upper / lower flammability or/and explosive limits**  No data available.  
**Vapor pressure @ 20 ºC, kPa**  0.005 @ 25 ºC  
**Vapor density (air=1)**  5.94  
**Relative density @ 25 ºC, g/cm³**  0.974  
**Water miscibility @ 20 ºC, g/L**  Low miscibility.  
**Solubility (other)**  Miscible with alcohols, acetone, oils, hydrocarbons.  
**Partition coefficient, log Pow @ 25 ºC**  1.27 (EPI Suite estimation)  
**Autoignition temperature, °C**  No data available.  
**Decomposition temperature, °C**  No data available.  
**Dynamic viscosity @ 25 ºC, cP**  No data available.  
**Explosive properties**  Not classified.  
**Oxidizing properties**  No data available.  
**Flammability**  Combustible liquid  
**Surface tension @ 20 ºC, mN/m**  31.2

### 10 – Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>No data available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under normal storage conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>No data available.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Ignition sources.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

### 11 – Toxicological information

**Acute toxicity - oral**

<table>
<thead>
<tr>
<th>Acute toxicity - oral (LD50,mg/kg)</th>
<th>&gt;5,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat (EPA-T.E.ST. estimation)</td>
</tr>
</tbody>
</table>

**Acute toxicity - dermal**

<table>
<thead>
<tr>
<th>Acute toxicity - dermal (LD50,mg/kg)</th>
<th>No data available.</th>
</tr>
</thead>
</table>

**Acute toxicity - inhalation**
### SDS: Butyl levulinate

**Acute toxicity – inhalation (LC50, dust/mist mg/l)**
- No data available

**Skin corrosion/irritation**
- Result: Based on available data the classification criteria are not met.

**Serious eye damage/irritation**
- Result: Based on available data the classification criteria are not met.

**Respiratory sensitization**
- Result: Based on available data the classification criteria are not met.

**Skin sensitization**
- Result: Based on available data the classification criteria are not met.

**Germ cell mutagenicity**

**Genotoxicity – in vitro**
- Based on available data the classification criteria are not met.

### Carcinogenicity

#### IARC
- No component of this product present at levels greater than or equal to 0.1% is identified as human carcinogen by IARC.

#### ACGIH
- No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

#### NTP
- No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

#### OSHA
- No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

**Fertility**
- No data available.

**Development**
- No data available.

### Specific target organ toxicity

**STOT-single exposure**
- No data available.

**STOT-repeated exposure**
- No data available.

### Additional information

**General information**
- This product is not classified as hazardous.

**Target organs**
- Not specific target organ known.

---

### 12 – Ecological information

**Toxicity**
Ecotoxicity

The ecotoxicity of this product has not yet been fully investigated. This product may be harmful to aquatic life. Large or frequent spills may have dangerous effects on the environment.

**Acute toxicity**

**Toxicity to fish**

$LC_{50}(96h.) = 10-100mg/l$ (Fathead minnow; EPA-T.E.S.T. estimation)

**Aquatic invertebrates**

$LC_{50}(48h.)= 10-100mg/l$ (Daphnia Magna, EPA-T.E.S.T. estimation)

**Aquatic plants**

$IGC_{50} (48h)>200mg/l$ (T. Pyroformis, EPA-T.E.S.T. estimation)

**Chronic toxicity**

**Toxicity to fish**

No data available.

**Aquatic invertebrates**

No data available.

**Aquatic plants**

No data available.

**Persistency and biodegradability**

**Persistency and biodegradability**

No data available.

Result: -

**Biodegradability**

Readily biodegradable. (EPI Suite estimation).

This product is unlikely to persist or bioaccumulate in the environment. (BCF<<500; logPow=1.27).

**Biological oxygen demand(mg/g)**

No data available

**Chemical oxygen demand(mg/g)**

No data available

**BOD/COD ratio**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Results of PBT and vPvB**

No data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. This product may be harmful to aquatic life.
13 – Disposal considerations

**Waste treatment methods**

**General information**

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of safely. When handling waste, the safety precautions applying to the handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues.

**Disposal methods**

Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration and landfill should only be considered when recycling is not feasible.

14 – Transport information

| DOT (US) | UN number: NA 1993  
|          | Proper shipping name: Combustible liquid, n.o.s. (Butyl levulinate)  
|          | Reportable Quantity (RQ):  
|          | Poison Inhalation Hazard: No  
|          | (Remark: The combustible liquid classification only applies when shipped in single package sizes >119 gallons).  
| IMDG     | Not dangerous goods.  
| IATA     | Not dangerous goods.  
| Transport in bulk according to | Transport in bulk according to  
|          | Annex II of MARPOL 73/78  
|          | and the IBC Code  
|          | Not applicable.  

15 – Regulatory information

**US Federal Regulations and state regulations**

Components of the product are listed in the quoted regulations. For details, please refer to the regulations directly. This list is not exhaustive; please check for other applicable regulations.

**This product has been classified by hazard criteria of the Controlled Products Regulations, and the SDS contains all the information required by the Controlled Products Regulations.**

**US Federal Regulations**

- **SARA 302 Section 302 (Specific toxic chemical listings)**
  No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- **SARA Section 311/312 (Specific toxic chemical listings)**

Fire Hazard.

**SARA Section 313 (Specific toxic chemical listings)**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**RCRA (hazardous waste code)**
None of the ingredients are listed.

**TSCA (Toxic Substances Control Act)**
CAS 2052-15-5 is listed on the TSCA inventory.

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)**
None of the ingredients are listed.

**US State Regulations**

**Proposition 65 (California)**
Chemicals are known to cause cancer
None of the chemicals in this product are listed.

Chemicals are known to cause reproductive toxicity for females
None of the chemicals in this product are listed.

Chemicals are known to cause reproductive toxicity for males
None of the chemicals in this product are listed.

**Massachusetts Right to Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right to Know Components**
No components are subject to the Pennsylvania Right to Know Act.

**New Jersey Right to Know Components**
No components are subject to the New Jersey Right to Know Act.

**Canada**

**Canadian Domestic Substances List (DSL)**
CAS: 2052-15-5 is listed on Canada’s DSL List.

**Canadian NPRI Ingredient Disclosure list (limit 0.1%)**
The substance is not specified on any list. There is no control measure imposed to this substance.

**Canadian NPRI Ingredient Disclosure list (limit 1%)**
The substance is not specified on any list. There is no control measure imposed to this substance.

---

**16 – Other information**

**Full text of H-Statements referred to under sections 2 and 3**

H227                Combustible liquids
Flam. Liq.          Flammable liquids

**GHS Column Model 2017 Classification**

Acute health hazards (single exp)     Negligible
Chronic health hazards (repeated exp.)        Negligible 
Environmental hazards                        Negligible 
Physical-chemical hazards                     Low 

Further Information

The information above is believed to be accurate and represents the best information available. However, we make no warranty of merchantability or any other warranty, express or implied, on such information and we assume no liability resulting from its use. Users should make their investigations to determine the suitability of the information for their purposes. In no event shall the InKemia Green Chemicals, Inc. be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages arising, even if the InKemia Green Chemicals, Inc. has been advised of the possibility of such damages.

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