Section 1: PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>Methyl 5-Bromovalerate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>321-67121,329-67122</td>
</tr>
<tr>
<td>CAS RN</td>
<td>5454-83-1</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>FUJIFILM Wako Pure Chemical Corporation</td>
</tr>
<tr>
<td></td>
<td>1-2 Doshomachi 3-Chome</td>
</tr>
<tr>
<td></td>
<td>Chuo-ku, Osaka 540-8605, Japan</td>
</tr>
<tr>
<td></td>
<td>Phone: +81-6-6203-3741</td>
</tr>
<tr>
<td></td>
<td>Fax: +81-6-6203-5964</td>
</tr>
<tr>
<td>Supplier</td>
<td>FUJIFILM Wako Pure Chemical Corporation</td>
</tr>
<tr>
<td></td>
<td>1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan</td>
</tr>
<tr>
<td></td>
<td>Phone: +81-6-6203-3741</td>
</tr>
<tr>
<td></td>
<td>Fax: +81-6-6203-2029</td>
</tr>
<tr>
<td>Emergency telephone number</td>
<td>+81-6-6203-3741 / +81-3-3270-8571</td>
</tr>
<tr>
<td>Recommended uses and restrictions on use</td>
<td>For research purposes</td>
</tr>
</tbody>
</table>

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A

Pictograms

Signal word        Warning

Hazard statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements-(Prevention)
• Wash face, hands and any exposed skin thoroughly after handling
• Wear protective gloves/protective clothing/eye protection/face protection

Precautionary statements-(Response)
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
• If eye irritation persists: Get medical advice/attention.
• IF ON SKIN: Wash with plenty of soap and water
• If skin irritation occurs: Get medical advice/attention
• Take off contaminated clothing and wash before reuse

Precautionary statements-(Storage)
• Not applicable
Precautionary statements-(Disposal)
• Not applicable

Others
Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C6H11BrO2

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight-%</th>
<th>Molecular weight</th>
<th>ENCS</th>
<th>ISHL No.</th>
<th>CAS RN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl 5-bromovalerate</td>
<td>96</td>
<td>195.05</td>
<td>N/A</td>
<td>N/A</td>
<td>5454-83-1</td>
</tr>
</tbody>
</table>

Impurities and/or Additives: Not applicable

Section 4: FIRST AID MEASURES

Inhalation
Remove to fresh air. If symptoms persist, call a physician.

Skin contact
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion
Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders
Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
Water spray (fog), Carbon dioxide (CO2), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media
No information available

Special extinguishing method
No information available

Specific hazards arising from the chemical product
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Protection of fire-fighters
Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions
To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up
Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization
No information available
Secondary disaster prevention measures
Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling
Technical measures
Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. Use with local exhaust ventilation.

Precautions
Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage
Safe storage conditions
Store away from sunlight in well-ventilated place at room temperature (preferably cool).
Keep container tightly closed.

Safe packaging material
Glass

Incompatible substances
Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls
In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Personal protective equipment
Respiratory protection
Protective mask
Hand protection
Protection gloves
Eye protection
Protective eyeglasses or chemical safety goggles
Skin and body protection
Long-sleeved work clothes

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form
Color
colorless - pale yellow
Appearance
liquid

Odor
No data available
pH
No data available
Melting point/freezing point
No data available
Boiling point, initial boiling point and boiling range
No data available
Flash point
99 °C
Evaporation rate:
No data available
Flammability (solid, gas):
No data available
Upper/lower flammability or explosive limits
Upper :
No data available
Lower :
No data available
Vapour pressure
No data available
Vapour density
No data available
Specific Gravity / Relative density 1.363
Solubilities Ethanol and acetone: miscible. Water: practically insoluble, or insoluble.
n-Octanol/water partition coefficient: (log Pow) No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity (coefficient of viscosity) No data available
Dynamic viscosity No data available

Section 10: STABILITY AND REACTIVITY

Stability
- Stability Stable under recommended storage conditions.
- Reactivity No data available

Hazardous reactions
- None under normal processing

Conditions to avoid
- Extremes of temperature and direct sunlight, heat, flames and sparks, static electricity, spark

Incompatible materials
- Strong oxidizing agents

Hazardous decomposition products
- Carbon monooxide (CO), Carbon dioxide (CO2), Halides

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity No data available

Skin irritation/corrosion No data available
Serious eye damage/irritation No data available
Respiratory or skin sensitization No data available
Reproductive cell mutagenicity No data available
Carcinogenicity No data available

Reproductive toxicity No data available
STOT-single exposure No data available
STOT-repeated exposure No data available
Aspiration hazard No data available

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity No information available

Other data No data available

Persistence and degradability No information available
Bioaccumulative potential No information available
Mobility in soil No information available
Hazard to the ozone layer No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues
- Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Contaminated container and contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

### Section 14: TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td></td>
</tr>
<tr>
<td>Proper shipping name:</td>
<td></td>
</tr>
<tr>
<td>UN classification</td>
<td></td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td></td>
</tr>
<tr>
<td>Proper shipping name:</td>
<td></td>
</tr>
<tr>
<td>UN classification</td>
<td></td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant (Sea)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IATA</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td></td>
</tr>
<tr>
<td>Proper shipping name:</td>
<td></td>
</tr>
<tr>
<td>UN classification</td>
<td></td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td></td>
</tr>
<tr>
<td>Environmentally Hazardous Substance</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Section 15: REGULATORY INFORMATION

**International Inventories**

- EINECS/ELINCS: Listed
- TSCA: Listed

**Japanese regulations**

- Fire Service Act: Category IV, Class III petroleums, dangerous grade 3
- Poisonous and Deleterious Substances Control Law: Not applicable
- Industrial Safety and Health Act: Not applicable
- Regulations for the carriage and storage of dangerous goods in ship: Not applicable
- Civil Aeronautics Law: Not applicable
- Pollutant Release and Transfer Register Law: Not applicable
- Export Trade Control Order: Not applicable

### Section 16: OTHER INFORMATION

**Key literature references and sources for data etc.**

- IATA dangerous Goods Regulations
- RTECS: Registry of Toxic Effects of Chemical Substances
- Japan Industrial Safety and Health Association GHS Model SDS
- Chemical Dictionary, Kyoritsu Publishing Co., Ltd.
- etc
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
GHS Classification is according to JIS Z7252(2014). *JIS: Japanese Industrial Standards

End of Safety Data Sheet