SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision Date  13-Apr-2021
Version 2.02

Section 1: PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>Isobornyl Acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>324-53022,328-53025</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 use only</td>
</tr>
</tbody>
</table>

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture
Short-term (acute) hazardous to the aquatic environment Category 3

Pictograms
Signal word none

Hazard statements
H402 - Harmful to aquatic life

Precautionary statements-(Prevention)
- Avoid release to the environment

Precautionary statements-(Response)

Precautionary statements-(Storage)
- Not applicable

Precautionary statements-(Disposal)
- Dispose of contents/container to an approved waste disposal plant

Others
Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C12H20O2

<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>Isobornyl acetate</td>
<td>90.0</td>
<td>196.29</td>
<td>(4)-626,(4)-1216</td>
<td>公表</td>
<td>125-12-2</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

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

Special extinguishing method
No information available

Special protective actions for 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
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
Protective 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 - slight yellow
Appearance
liquid
Odor
characteristic odor
Melting point/freezing point
No data available
Boiling point, initial boiling point and boiling range
215 °C
Flammability
No data available
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
Flash point
101 °C
Auto-ignition temperature:
No data available
Decomposition temperature:
No data available
pH
No data available
Viscosity (coefficient of viscosity)
No data available
Dynamic viscosity
No data available
Solubilities
Ethanol , acetone: miscible. water: practically insoluble, or insoluble.

n-Octanol/water partition coefficient:(log Pow)
No data available
Vapour pressure
No data available
Specific Gravity / Relative density
0.98
Vapour density
No data available
Particle characteristics
No data available

Section 10: STABILITY AND REACTIVITY

Stability
Reactivity
No data available
Chemical stability
Stable under recommended storage conditions.

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)

### Section 11: TOXICOLOGICAL INFORMATION

#### Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobornyl acetate</td>
<td>9050 mg/kg (Rat)</td>
<td>&gt; 20000 mg/kg (Rabbit)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobornyl acetate</td>
<td>N/A</td>
<td>LC50:Brachydanio rerio 10.0 - 18.0 mg/L 96 h</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

ADR/RID
Not regulated

UN number
-

Proper shipping name:

UN classification
Subsidiary hazard class
Packing group
Marine pollutant Not applicable

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

IATA
UN number Not regulated
Proper shipping name:
UN classification
Subsidiary hazard class
Packing group
Environmentally Hazardous Substance Not applicable

Section 15: REGULATORY INFORMATION

International Inventories
EINECS/ELINCS Listed
TSCA Listed

Japanese regulations
Fire Service Act Category IV, Class III petroleum, 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.
NITE: National Institute of Technology and Evaluation (JAPAN)
http://www.safe.nite.go.jp/japan/db.html
IATA dangerous Goods Regulations
RTECS: Registry of Toxic Effects of Chemical Substances
Japan Industrial Safety and Health Association GHS Model SDS
Dictionary of Synthetic Oraganic Chemistry, SSOCJ, Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyoritsu Publishing Co., Ltd.
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Disclaimer
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GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet