SAFETY DATA SHEET

Section 1: PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>4-Bromo-1,8-naphthalic Anhydride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>322-69851,320-69852</td>
</tr>
<tr>
<td>CAS No</td>
<td>81-86-7</td>
</tr>
<tr>
<td>Formula</td>
<td>C12H5BrO3</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>FUJIFILM Wako Pure Chemical Corp.</td>
</tr>
<tr>
<td></td>
<td>1-2 Doshomachi 3-Chome, Chuo-ku,</td>
</tr>
<tr>
<td></td>
<td>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 Corp.</td>
</tr>
<tr>
<td></td>
<td>1-2 Doshomachi 3-Chome, Chuo-ku,</td>
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<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</td>
<td>For research purposes</td>
</tr>
<tr>
<td>restrictions on use</td>
<td></td>
</tr>
</tbody>
</table>

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Pictograms
Signal word none

Hazard statements
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Precautionary statements-(Prevention)
• Not applicable

Precautionary statements-(Response)
• Not applicable

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 C12H5BrO3

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight-%</th>
<th>Molecular weight</th>
<th>ENCS</th>
<th>ISHL No.</th>
<th>CAS No.</th>
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</thead>
<tbody>
<tr>
<td>4-Bromo-1,8-naphthalic</td>
<td>97.0</td>
<td>277.07</td>
<td>N/A</td>
<td>8-(4)-744,8-(4)-747</td>
<td>81-86-7</td>
</tr>
</tbody>
</table>
**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 containment and methods and materials for cleaning up**
Sweep up and gather scattered particles, and collect it in an empty airtight container.

**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**
Avoid contact with 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
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

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
Dust 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
grey - brown

Appearance
crystalline powder - powder

Odor
No data available

pH
No data available

Melting point/freezing point
217-219 °C

Boiling point, initial boiling point and boiling range
No data available

Flash point
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

Vapour pressure
No data available

Vapour density
No data available

Specific Gravity / Relative density
No data available

Solubilities
No data available

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
Stable under recommended storage conditions.

Reactivity
No data available

Hazardous reactions
None under normal processing

**Conditions to avoid**
- Extremes of temperature and direct sunlight

**Incompatible materials**
- Strong oxidizing agents

**Hazardous decomposition products**
- Carbon monoxide (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

**ADR/RID**
- Not regulated
  - **UN number**
  - **Proper shipping name:**
  - **UN classification**
  - **Subsidiary hazard class**
  - **Packing group**
  - **Marine pollutant**
    - Not applicable

**IMDG**
- Not regulated
  - **UN number**
  - **Proper shipping name:**
  - **UN classification**
  - **Subsidiary hazard class**
Section 15: REGULATORY INFORMATION

International Inventories
- EINECS/ELINCS: Listed
- TSCA: Listed

Japanese regulations
- Fire Service Act: Not applicable
- 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.
- RTECS: Registry of Toxic Effects of Chemical Substances
- Japan Industrial Safety and Health Association GHS Model SDS
- Chemical Dictionary, Kyouritsu 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