SAFETY DATA SHEET

According to JIS Z 7253:2012
Revision Date 14-May-2018
Version 2

Section 1: PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Ethylenebis(triphenylphosphonium) Dibromide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product code</strong></td>
<td>055-07191,053-07192</td>
</tr>
<tr>
<td><strong>CAS No</strong></td>
<td>1519-45-5</td>
</tr>
<tr>
<td><strong>Formula</strong></td>
<td>C38H34Br2P2</td>
</tr>
<tr>
<td><strong>Manufacturer</strong></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: +81-6-6203-5964</td>
</tr>
<tr>
<td><strong>Supplier</strong></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><strong>Emergency telephone number</strong></td>
<td>+81-6-6203-3741 / +81-3-3270-8571</td>
</tr>
<tr>
<td><strong>Recommended uses and restrictions on use</strong></td>
<td>For research purposes</td>
</tr>
<tr>
<td><strong>Announcement of company name change</strong></td>
<td>Company name has changed since April 1, 2018. Former name was &quot;Wako Pure Chemical Industries, Ltd.&quot;</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**

| ![Image] |

**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
C₃₈H₃₄Br₂P₂

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylenebis(triphenylphosphonium) Dibromide</td>
<td>95.0</td>
<td>712.43</td>
<td>N/A</td>
<td>N/A</td>
<td>1519-45-5</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 contaminent 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. Be careful to hygroscopic. 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
Storage conditions
Keep container protect from light tightly closed. Store in a cool (2-10 °C) place. Protect from moisture.

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
White - nearly white
Appearance: crystals - crystalline powder
Odor: No data available
pH: No data available
Melting point/freezing point: 317-320 °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: methanol: soluble.
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: May be altered by light. Hygroscopic.
  Reactivity: No data available

Hazardous reactions
  None under normal processing

Conditions to avoid
  Extremes of temperature and direct sunlight, Moisture

Incompatible materials
  Strong oxidizing agents

Hazardous decomposition products
  Carbon monoxide (CO), Carbon dioxide (CO2), Phosphorus oxide, 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
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
Not regulated
UN number
-
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
-

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.
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, 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

Product information
You might get a product which indicates a former company name, during the period of transition.

End of Safety Data Sheet