Section 1: PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name</th>
<th>Simetryne Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>191-08044</td>
</tr>
<tr>
<td>CAS No</td>
<td>1014-70-6</td>
</tr>
<tr>
<td>Formula</td>
<td>C8H15N5S</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>
<tr>
<td>Announcement of company name change</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
Acute toxicity - Oral Category 4
Specific target organ toxicity (single exposure) Category 2 nervous system
Specific target organ toxicity (repeated exposure) Category 2 digestive system, kidneys, liver, testes
Aquatic environment (acute hazard) Category 1
Aquatic environment (long-term hazard) Category 1

Pictograms
![Warning]

Signal word Warning

Hazard statements
H302 - Harmful if swallowed
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H371 - May cause damage to the following organs: nervous system
H373 - May cause damage to the following organs through prolonged or repeated exposure: digestive system, kidneys, liver, testes

Precautionary statements-(Prevention)
• Wash face, hands and any exposed skin thoroughly after handling
• Do not eat, drink or smoke when using this product
• Do not breathe dust/fume/gas/mist/vapors/spray
• Avoid release to the environment

Precautionary statements-(Response)
• IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician
• IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
• Rinse mouth.
• Collect spillage

Precautionary statements-(Storage)
• Store locked up.

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

Others
Other hazards Not available

---

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Single Substance or Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8H15N5S</td>
<td>Substance</td>
</tr>
</tbody>
</table>

<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>Simetryne</td>
<td>99.0</td>
<td>213.30</td>
<td>N/A</td>
<td>8-(3)-237</td>
<td>1014-70-6</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. 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. Packed with an inert gas.

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
Appearance crystals - crystalline powder
Odor No data available
pH No data available
Melting point/freezing point  80-82 °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 acetone : soluble . water : Very slightly 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.
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), Nitrogen oxides (NOx), Sulfur oxides (SOx)

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>Simetryne</td>
<td>780mg/kg (Rat)</td>
<td>&gt;3100mg/kg(Rat)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Acute toxicity -oral- source information</th>
<th>Acute toxicity -dermal- source information</th>
<th>Acute toxicity -inhalation gas-source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>LD50 (oral): 780mg/kg (農薬登録申請資料(1969))</td>
<td>LD50 (skin, rat): &gt;3100mg/kg (農薬登録申請資料(1980))</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Acute toxicity - inhalation vapor- source information</td>
<td>Acute toxicity - inhalation dust- source information</td>
<td>Acute toxicity - inhalation mist- source information</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
<td>LC50(4h,rat): &gt; 4.88mg/L (4 hours equivalent)</td>
<td>LC50(4h,rat): &gt; 4.88mg/L (4 hours equivalent)</td>
</tr>
</tbody>
</table>

**Skin irritation/corrosion**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Skin corrosion irritation source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Result of the skin irritation test with mbbits (農薬登録申請資料(1985)).</td>
</tr>
</tbody>
</table>

**Serious eye damage/ irritation**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Serious eye damage source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**Respiratory or skin sensitization**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Respiratory, Skin sensitization source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**Reproductive cell mutagenicity**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Mutagenic source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**Carcinogenicity**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogenicity source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Reproductive toxicity source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**STOT-single exposure**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>STOT -single exposure- source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**STOT-repeated exposure**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>STOT -repeated exposure- source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Aspiration Hazard source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Based on the NITE GHS classification results.</td>
</tr>
</tbody>
</table>

### 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>Simetryne</td>
<td>ErC50: P. subcapitata 0.028 mg/L</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### Other data

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Aquatic toxicity -Acute- source information</th>
<th>Aquatic toxicity -Chronic- source information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simetryne</td>
<td>Er50: (Selenastrum):(Chlorophyta):0.028mg/L</td>
<td>Acute toxicity is a Category 1, but it is estimated bioaccumulation is low(log Kow=2.8(PHYSPROP Database, 2005)). Estimated that there is no rapid degradation.(BIOWIN).</td>
</tr>
</tbody>
</table>

**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**
- **UN number**: UN3077
- **Proper shipping name**: Environmentally hazardous substance, solid, n.o.s. (Simetryne)
- **UN classification**: 9
- **Subsidiary hazard class**: 
- **Packing group**: III
- **Marine pollutant**: Yes

**IMDG**
- **UN number**: UN3077
- **Proper shipping name**: Environmentally hazardous substance, solid, n.o.s. (Simetryne)
- **UN classification**: 9
- **Subsidiary hazard class**: 
- **Packing group**: III
- **Marine pollutant (Sea)**: Yes
- **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**: No information available

**IATA**
- **UN number**: UN3077
- **Proper shipping name**: Environmentally hazardous substance, solid, n.o.s. (Simetryne)
- **UN classification**: 9
- **Subsidiary hazard class**: 
- **Packing group**: III
- **Environmentally Hazardous Substance**: Yes

---

### 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**: Noxious Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
- **Civil Aeronautics Law**: Misellaneous Dangerous Substances and Articles (Ordinance Art.194, MITL Nortification for Air Transportation of Explosives etc., Attached Table 1)
**Pollutant Release and Transfer Register Law**

<table>
<thead>
<tr>
<th>Class 1 - No.</th>
<th>323</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export Trade Control Order</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**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
- 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