

SAFETY DATA SHEET

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

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product name | s-Estradiol |
| Product code | 052-04041,056-04044,058-04043 |
| CAS No | 50-28-2 |
| Formula | C18H24O2 |
| Manufacturer | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-5964 |
| Supplier | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029 |
| Emergency telephone number | +81-6-6203-3741 / +81-3-3270-8571 |
| Recommended uses and restrictions on use | For research purposes |
| Announcement of company name change | Company name has changed since April 1, 2018. Former name was "Wako Pure Chemical Industries, Ltd." |

Section 2: HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture****Carcinogenicity****Reproductive Toxicity**

Category 2
 Category 1A (additional)

Pictograms**Signal word**

Danger

Hazard statements

- H351 - Suspected of causing cancer
- H360 - May damage fertility or the unborn child
- H362 - May cause harm to breast-fed children

Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required.

Precautionary statements-(Response)

- IF exposed or concerned: Get medical advice/attention

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

Single Substance or Mixture Substance

Formula C18H24O2

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS No. |
|----------------|------------|------------------|------|---------------------|---------|
| beta-Estradiol | 97.0-103.0 | 272.38 | N/A | 7-(1)-279,7-(1)-280 | 50-28-2 |

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

Sweep up and gather scattered particles, and collect it in an empty airtight container.

Recoverly, 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, store 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

Do not eat, drink or smoke when using this product

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form**Color**

White - slightly brown ,
crystals - powder or granules

Appearance**Odor**

No data available

pH

No data available

Melting point/freezing point

174-180 °C

| | |
|---|---|
| Boiling point, initial boiling point and boiling range | 446 °C |
| 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 | 1,4-dioxane : freely soluble . acetone : soluble . Ethanol : sparingly soluble . 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 | May be altered by light. Hygroscopic. |
| Reactivity | No data available |

Hazardous reactions

None under normal processing

Conditions to avoid

Moisture

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

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 |

| Chemical Name | NTP | IARC | ACGIH | JSOH (Japan) |
|---------------------------|-----|---------|-------|--------------|
| beta-Estradiol 50-28-2 | | Group 1 | | |

| | |
|-------------------------------|-------------------|
| 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 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 Organic 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