

SAFETY DATA SHEET

According to JIS Z 7253:2012
Revision Date 14-Nov-2018
 Version 2.01

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product name | Quinoline |
| Product code | 171-00203,175-00206,175-00201 |
| CAS No | 91-22-5 |
| Formula | C9H7N |
| 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

| | |
|--|------------------------|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 3 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Germ cell mutagenicity | Category 2 |
| Carcinogenicity | Category 1A |
| Specific target organ toxicity (single exposure) | Category 1, Category 3 |
| Category 1 nervous system | |
| Category 3 Respiratory tract irritation | |
| Specific target organ toxicity (repeated exposure) | Category 2 |
| Category 2 liver | |
| Aquatic environment (acute hazard) | Category 1 |
| Aquatic environment (long-term hazard) | Category 1 |

Pictograms



Signal word Danger**Hazard statements**

- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H302 - Harmful if swallowed
- H311 - Toxic in contact with skin
- H341 - Suspected of causing genetic defects
- H350 - May cause cancer
- H335 - May cause respiratory irritation
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects
- H370 - Causes damage to the following organs: nervous system
- H373 - May cause damage to the following organs through prolonged or repeated exposure: liver

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.
- 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
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment

Precautionary statements-(Response)

- IF exposed: Call a POISON CENTER or doctor/physician
- 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
- Call a POISON CENTER or doctor/physician if you feel unwell.
- Remove/Take off immediately all contaminated clothing
- Wash contaminated clothing before reuse.
- If skin irritation occurs: Get medical advice/attention
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth.
- Collect spillage

Precautionary statements-(Storage)

- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed

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** C₉H₇N

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS No. |
|---------------|----------|------------------|---------|----------|---------|
| Quinoline | 95.0 | 129.16 | (5)-794 | (5)-794 | 91-22-5 |

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

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**

Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. Store locked up.

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

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**

Colorless - pale brown

Turbidity

clear

Appearance

liquid

Odor

characteristic odor

pH

No data available

Melting point/freezing point

-16 °C

Boiling point, initial boiling point and boiling range

238 °C

Flash point

114 °C / 237 °F

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

1.082-1.102g/ml (20°C)

Solubilities

Ethanol , Diethyl ether : Very soluble.

n-Octanol/water partition coefficient:(log Pow)

2.06

Auto-ignition temperature:

440 °C / 824 °F

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, Heat, flames and sparks, static electricity, spark

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x)

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---------------|-----------------|---------------------|-----------------|
| Quinoline | 331 mg/kg (rat) | 0.54 mg/kg (rabbit) | N/A |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|---------------|---|--|--|
| Quinoline | Based on the NITE GHS Classification results. | Based on the NITE Classification results. | Based on the NITE GHS classification results. |

| Chemical Name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust- source information | Acute toxicity -inhalation mist- source information |
|---------------|--|---|---|
| Quinoline | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Skin irritation/corrosion

| Chemical Name | Skin corrosion irritation source information |
|---------------|--|
| Quinoline | Based on the NITE Classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage source information |
|---------------|---|
| Quinoline | Based on the NITE Classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory, Skin sensitization source information |
|---------------|--|
| Quinoline | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | Mutagenic source information |
|---------------|---|
| Quinoline | Based on the NITE Classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|---------------|---|
| Quinoline | Based on the NITE Classification results. |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|---------------|---|
| Quinoline | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|---------------|---|
| Quinoline | Based on the NITE Classification results. |

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|---------------|---|
|---------------|---|

| | |
|--------------------------|---|
| Quinoline | Based on the NITE Classification results. |
| Aspiration hazard | |
| Chemical Name | Aspiration Hazard source information |
| Quinoline | Based on the NITE Classification results. |

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|---------------|----------------------|-----------------------------------|--|
| Quinoline | N/A | LC50:Fathead mino 0.44 ppm 96h | EC50:Daphnia magna 0.8 mg/L 21 days |

Other data

| Chemical Name | Aquatic toxicity -Acute- source information | Aquatic toxicity -Chronic- source information |
|---------------|---|---|
| Quinoline | Based on the NITE Classification results. | Based on the NITE Classification results. |

| | |
|--------------------------------------|--------------------------|
| 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 |
| Mobility | |

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 | UN2656 |
| Proper shipping name: | Quinoline |
| UN classification | 6.1 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant | Yes |

IMDG

| | |
|---|--------------------------|
| UN number | UN2656 |
| Proper shipping name: | Quinoline |
| UN classification | 6.1 |
| 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 | UN2656 |
| Proper shipping name: | Quinoline |
| UN classification | 6.1 |
| Subsidiary hazard class | |

| | |
|-------------------------------------|-----|
| Packing group | III |
| Environmentally Hazardous Substance | Yes |

Section 15: REGULATORY INFORMATION

International Inventories

| | |
|---------------|--------|
| EINECS/ELINCS | Listed |
| TSCA | Listed |

Japanese regulations

| | |
|--|---|
| Fire Service Act | Category IV, Class III petroleums, dangerous grade 3 |
| Poisonous and Deleterious Substances Control Law | Deleterious Substances 3rd. Grade |
| Industrial Safety and Health Act | Mutagens - Existing Chemicals Substances with Health Hazards Prevention Guideline(Carcinogenicity Substance) |
| Regulations for the carriage and storage of dangerous goods in ship | Toxic Substances - Poison (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1) |
| Civil Aeronautics Law | Toxic and Infectious Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1) |
| Pollutant Release and Transfer Register Law | Class 1 |
| Class 1 - No. | 81 |
| Export Trade Control Order | Not applicable |
| Air Pollution Control Law | Hazardous Air Pollutants |

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