# SAFETY DATA SHEET

According to JIS Z 7253:2019
**Issue Date** 07-May-2025
Revision Number 3.06

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Product Name** | 2,2',2''-Nitrilotriethanol |
| **Product Code** | 145-05605 |

**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** For research use only

**Restrictions on use** Seek expert judgment when using for purposes other than those recommended.

## Section 2: HAZARDS IDENTIFICATION

**GHS classification**

**Classification of the substance or mixture**

| | |
|---|---|
| **Skin corrosion/irritation** | Category 2 |
| **Serious eye damage/eye irritation** | Category 2A |
| **Skin sensitization** | Category 1 |
| **Specific target organ toxicity (single exposure)** | Category 3 |

**Category 3** Respiratory irritation

**Pictograms**

**Signal word** Warning

**Hazard statements**

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H317 - May cause an allergic skin reaction

**Precautionary statements-(Prevention)**

- Wash face, hands and any exposed skin thoroughly after handling
- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Use only outdoors or in a well-ventilated area

**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
- Take off contaminated clothing and wash before reuse
- If skin irritation or rash 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

**Precautionary statements-(Storage)**

• Store in a well-ventilated place. Keep container tightly closed
• 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** N(CH2CH2OH)3

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|---|---|---|---|---|---|
| 2,2',2''-Nitrilotriethanol | 98.0 | 149.19 | (2)-308,(2)-353 | * | 102-71-6 |

**Note on ISHL No.:** * in the table means announced chemical substances.

## 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**

Carbon dioxide (CO2), Foam, Extinguishing powder, Sand

**Unsuitable extinguishing media**

No information available

**Specific hazards arising from the chemical product**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Special extinguishing method**

No information available

**Special protective actions for 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**

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

**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**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.Use with local exhaust ventilation. 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). 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**

| Chemical Name | JSOH (Japan) | ISHL (Japan) | ACGIH |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol<br>102-71-6 | N/A | N/A | TWA: 5 mg/m³ |

| Chemical Name | Concentration standard value set by the Minister of Health, Labor and Welfare (8hr) | Concentration standard value set by the Minister of Health, Labor and Welfare (Short-Term) |
|---|---|---|
| 2,2',2''-Nitrilotriethanol<br>102-71-6 | 1 mg/m³ | N/A |

**Personal protective equipment**

| | |
|---|---|
| **Respiratory protection** | Protective mask |
| **Hand protection** | chemical protective gloves ( JIS T 8116 ) |
| **Eye protection** | protective eyeglasses or chemical safety goggles (JIS T 8147) |

**Skin and body protection** Long-sleeved work clothes

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.
If this product is classified as ”Chemical Substances Hazardous to Skin, etc.”, use appropriate protective equipment to them.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Form** | |
| **Color** | Colorless - slightly yellow |
| **Turbidity** | clear |
| **Appearance** | liquid |
| **Odor** | characteristic odor |
| **Melting point/freezing point** | 20 °C |
| **Boiling point, initial boiling point and boiling range** | 360 °C |
| **Flammability** | no data available |
| **Evaporation rate:** | no data available |
| **Flammability (solid, gas):** | no data available |
| **Upper/lower flammability or explosive limits** | |
| **Upper：** | 10 % |
| **Lower：** | 1 % |
| **Flash point** | 194 °C |
| **Auto-ignition temperature:** | 324 °C |
| **Decomposition temperature:** | no data available |
| **pH** | Alkaline (aq.) |
| **Viscosity (coefficient of viscosity)** | no data available |
| **Dynamic viscosity** | no data available |
| **Solubilities** | water and Ethanol : Very soluble. |
| **n-Octanol/water partition coefficient:(log Pow)** | no data available |
| **Vapour pressure** | no data available |
| **Specific Gravity / Relative density** | 1.12 |
| **Vapour density** | no data available |
| **Particle characteristics** | no data available |

## Section 10: STABILITY AND REACTIVITY

**Stability**

**Reactivity** no data available
**Chemical stability** May be altered by light.

**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 monooxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx)

## Section 11: TOXICOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

**Acute toxicity**

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol | 4,200 - 11,300 mg/kg ( Rat ) | > 2,000 mg/kg ( Rabbit ) | N/A |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS | Based on the NITE GHS | Based on the NITE GHS |

| | | | |
|---|---|---|---|
| | classification results. | classification results. | classification results. |

| Chemical Name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust- source information | Acute toxicity -inhalation mist- source information |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol | 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 |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**Serious eye damage/ irritation**

| Chemical Name | Serious eye damage/irritation source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**Respiratory or skin sensitization**

| Chemical Name | Respiratory or Skin sensitization source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**Reproductive cell mutagenicity**

| Chemical Name | germ cell mutagencity source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**Carcinogenicity**

| Chemical Name | Carcinogenicity source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

| Chemical Name | NTP | IARC | ACGIH | JSOH |
|---|---|---|---|---|
| 2,2',2''-Nitrilotriethanol<br>102-71-6 | N/A | Group 3 | N/A | N/A |

**Reproductive toxicity**

| Chemical Name | Reproductive toxicity source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**STOT-single exposure**

| Chemical Name | STOT -single exposure- source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**STOT-repeated exposure**

| Chemical Name | STOT -repeated exposure- source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

**Aspiration hazard**

| Chemical Name | Aspiration Hazard source information |
|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. |

## Section 12: ECOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

**Ecotoxicity**

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol | *EC50 : Scenedesmus subspicatus 169 mg/L 96 h* | *LC50 : Pimephales Promelas 11800 mg/L 96 h* | *EC50 : Daphnia magna 1386 mg/L 24 h* |

**Other data**

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|---|---|---|
| 2,2',2''-Nitrilotriethanol | Based on the NITE GHS classification results. | Based on the NITE GHS 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 |

## 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 classfication** | |
| **Subsidiary hazard class** | |
| **Packing group** | |
| **Marine pollutant** | Not applicable |
| **IMDG** | Not regulated |
| **UN number** | - |
| **Proper shipping name:** | |
| **UN classfication** | |
| **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 classfication** | |
| **Subsidiary hazard class** | |
| **Packing group** | |
| **Environmentally Hazardous Substance** | Not applicable |

## Section 15: REGULATORY INFORMATION

**Japanese regulations**

| | |
|---|---|
| **Fire Service Act** | Category IV, Class III petroleums, dangerous grade 3 water-soluble |
| **Poisonous and Deleterious Substances Control Law** | Not applicable |
| **Industrial Safety and Health Act** | Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)<br>Notifiable Substances (Law Art.57-2)<br>Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1) |
| **Regulations for the carriage and storage of dangerous goods in ship** | Not applicable |
| **Civil Aeronautics Law** | Not applicable |
| **Marine Pollution Prevention Law** | Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Z |
| **Pollutant Release and Transfer Register Law (2023.4.1-)** | Not applicable |
| **Act on the Prohibition of Chemical Weapon and the** | Category . |

**Regulation of Specific Chemicals**

| Chemical Name | Poisonous and Deleterious Substances Control Law | Industrial Safety and Health Act Substances (Law Art.57-2) | Pollutant Release and Transfer Register Law (2023.4.1-) |
|---|---|---|---|
| 2,2',2''-Nitrilotriethanol 102-71-6 ( 98.0 ) | - | Applicable | - |

## Section 16: OTHER INFORMATION

**Key literature references and sources for data etc.**

NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput
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

**Record of SDS revisions**

The following contents were revised. Exposure controls/personal protection. Ecological information. Regulatory information.

**Disclaimer**

This SDS is according to JIS Z 7253: 2019. 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 Z 7252:2019. *JIS: Japanese Industrial Standards

**End of Safety Data Sheet**