

# SAFETY DATA SHEET

Creation Date 23-Nov-2009

Revision Date 20-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

**Product Name** Ammonium hydroxide 35%

**Cat No. :** AC460800000; AC460801000

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

|  |              |
|--|--------------|
| Skin Corrosion/Irritation                        | Category 1 B |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |

### Label Elements

#### **Signal Word**

Danger

#### **Hazard Statements**

Causes severe skin burns and eye damage  
May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Use only outdoors or in a well-ventilated area

**Response**

Immediately call a POISON CENTER or doctor

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
 Take off contaminated clothing and wash before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Storage**

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

### 3. Composition/information on Ingredients

| Component          | CAS No    | Weight % |
|--------------------|-----------|----------|
| Water              | 7732-18-5 | 65       |
| Ammonium hydroxide | 1336-21-6 | 35       |
| Ammonia            | 7664-41-7 | -        |

### 4. First-aid measures

**General Advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

**Inhalation**

If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or

|  |   |
|--|---|
|  | inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove from exposure, lie down. Call a physician immediately.  |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.  |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. . Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | No information available  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | No information available  |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | No data available   |
| <b>Lower</b>                            | No data available   |
| <b>Oxidizing Properties</b>             | Not oxidising   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

|               |                     |                    |                         |
|---------------|---------------------|--------------------|-------------------------|
| <b>Health</b> | <b>Flammability</b> | <b>Instability</b> | <b>Physical hazards</b> |
| 3             | 1                   | 0                  | N/A                     |

## 6. Accidental release measures

|   |   |
|---|---|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.   |
| <b>Environmental Precautions</b>            | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. |
| <b>Methods for Containment and Clean Up</b> | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. After cleaning, flush away traces with water.  |

## 7. Handling and Storage

**Handling** Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe mist/vapors/spray. Contents may develop pressure upon prolonged storage.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Contents may develop pressure upon prolonged storage. Incompatible Materials. Strong oxidizing agents. Acids. Metals. Aluminium. Zinc. copper. Copper alloys. Fluorine. Halogens.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Component | ACGIH TLV                   | OSHA PEL   | NIOSH   | Mexico OEL (TWA)            |
|-----------|-----------------------------|--|---|-----------------------------|
| Ammonia   | TWA: 25 ppm<br>STEL: 35 ppm | (Vacated) STEL: 35 ppm<br>(Vacated) STEL: 27 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 35 mg/m <sup>3</sup> | IDLH: 300 ppm<br>REL = 25 ppm (TWA)<br>REL = 18 mg/m <sup>3</sup> (TWA)<br>STEL: 35 ppm<br>STEL: 27 mg/m <sup>3</sup> | TWA: 25 ppm<br>STEL: 35 ppm |

**Engineering Measures** Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles. Face protection shield.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended Filter type:** Inorganic gases and vapours filter. Type B. Grey. or. Ammonia and organic ammonia derivatives filter. Type K. Green. conforming to EN14387.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

**Physical State**

Liquid

**Color**

Colorless

**Odor**

Ammonia-like

**Odor Threshold**

5 ppm

### Property

#### Values

**Melting Point/Range**

No data available

**Softening Point**

No data available

**Boiling Point/Range**

No information available

**Flash Point**

No information available

**Flammability (liquid)**

No data available

**Flammability (solid,gas)**

Not applicable

**Explosion Limits**

No data available

**Autoignition Temperature**

No data available

### Remarks

### Method

**Method** - No information available

Liquid

|  |                          |             |
|--|--------------------------|-------------|
| <b>Decomposition Temperature</b>               | No data available        |             |
| <b>pH</b>                                      | > 12 @ 20°C              |             |
| <b>Viscosity</b>                               | No data available        |             |
| <b>Water Solubility</b>                        | Soluble                  |             |
| <b>Solubility in other solvents</b>            | No information available |             |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |             |
| <b>Vapor Pressure</b>                          | No data available        |             |
| <b>Density / Specific Gravity</b>              | 0.88 - 0.91              |             |
| <b>Bulk Density</b>                            | Not applicable           | Liquid      |
| <b>Vapor Density</b>                           | No data available        | (Air = 1.0) |
| <b>Particle characteristics</b>                | Not applicable (liquid)  |             |

**Other Information**

|                             |               |
|-----------------------------|---------------|
| <b>Molecular Formula</b>    | H5 N O        |
| <b>Molecular Weight</b>     | 35.05         |
| <b>Explosive Properties</b> | Not explosive |
| <b>Oxidizing Properties</b> | Not oxidising |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | Stable under normal conditions.  |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat.  |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Acids, Metals, Aluminium, Zinc, copper, Copper alloys, Fluorine, Halogens           |
| <b>Hazardous Decomposition Products</b> | Nitrogen oxides (NO <sub>x</sub> ), Thermal decomposition can lead to release of irritating gases and vapors |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

**Information on expected route of exposure**

|                   |   |
|-------------------|---|
| <b>Inhalation</b> | Causes burns. May be harmful if inhaled. Harmful by inhalation.   |
| <b>Ingestion</b>  | Causes burns. May be harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth, throat, and stomach. Harmful if swallowed. |
| <b>Eyes</b>       | Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.  |
| <b>Skin</b>       | Causes burns. May be harmful in contact with skin.  |

**Toxicology data for the components**

| Component          | LD50 Oral                | LD50 Dermal | LC50 Inhalation   |
|--------------------|--------------------------|-------------|---|
| Water              | -                        | -           | -   |
| Ammonium hydroxide | LD50 > 350 mg/kg (Rat)   | -           | -   |
| Ammonia            | LD50 = 350 mg/kg ( Rat ) | -           | LC50 = 9850 mg/m <sup>3</sup> ( Rat ) 1 h<br>LC50 = 13770 mg/m <sup>3</sup> ( Rat ) 1 h |

|   |                          |
|---|--------------------------|
| <b>Toxicologically Synergistic Products</b> | No information available |
|---|--------------------------|

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory

Skin

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component          | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|--------------------|-----------|------------|------------|------------|------------|------------|
| Water              | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ammonium hydroxide | 1336-21-6 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ammonia            | 7664-41-7 | Not listed | Not listed | Not listed | Not listed | Not listed |

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Category 3

Results / Target organs

Respiratory system.

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard;

Based on available data, the classification criteria are not met

**Symptoms / effects, both acute and delayed**

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties**

This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component          | Freshwater Algae | Freshwater Fish  | Microtox              | Water Flea  |
|--------------------|------------------|--|-----------------------|---|
| Ammonium hydroxide | -                | 0.53 mg/l LC50 96h<br>0.75 - 3.4 mg/l LC50 96h<br>8.2 mg/L LC50 96h  | -                     | EC50: 0.66 mg/L/48h   |
| Ammonia            | Not listed       | LC50: 0.26 - 4.6 mg/L, 96h<br>(Lepomis macrochirus)<br>LC50: = 1.17 mg/L, 96h<br>flow-through (Lepomis<br>macrochirus)<br>LC50: 0.73 - 2.35 mg/L, 96h<br>(Pimephales promelas)<br>LC50: = 5.9 mg/L, 96h static | EC50 = 2.0 mg/L 5 min | EC50 = 25.4 mg/L, 48h<br>(Daphnia magna)<br>NOEC = 0.79 mg/L<br>(Daphnia magna) |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  | (Pimephales promelas)<br>LC50: > 1.5 mg/L, 96h<br>(Poecilia reticulata)<br>LC50: = 1.19 mg/L, 96h<br>static (Poecilia reticulata)<br>LC50: = 0.44 mg/L, 96h<br>(Cyprinus carpio) |  |  |
|--|--|--|--|--|

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN2672  
**Proper Shipping Name** AMMONIA SOLUTION  
**Hazard Class** 8  
**Packing Group** III

#### TDG

**UN-No** UN2672  
**Proper Shipping Name** AMMONIA SOLUTION  
**Hazard Class** 8  
**Packing Group** III

#### IATA

**UN-No** UN2672  
**Proper Shipping Name** AMMONIA SOLUTION  
**Hazard Class** 8  
**Packing Group** III

#### IMDG/IMO

**UN-No** UN2672  
**Proper Shipping Name** AMMONIA SOLUTION  
**Hazard Class** 8  
**Packing Group** III

### 15. Regulatory Information

#### United States of America Inventory

| Component          | CAS No    | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|--------------------|-----------|------|--|--------------------------------|
| Water              | 7732-18-5 | X    | ACTIVE   | -                              |
| Ammonium hydroxide | 1336-21-6 | X    | ACTIVE   | -                              |
| Ammonia            | 7664-41-7 | X    | ACTIVE   | -                              |

#### **Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b) - Notices of Export** Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component          | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|--------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Water              | 7732-18-5 | X   | -    | 231-791-2 | X     | X    |      | X    | X     | KE-35400 |
| Ammonium hydroxide | 1336-21-6 | X   | -    | 215-647-6 | X     | X    | X    | X    | X     | KE-01688 |
| Ammonia            | 7664-41-7 | X   | -    | 231-635-3 | X     | X    | X    | X    | X     | KE-01625 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Component          | CAS No    | Weight % | SARA 313 - Threshold Values % | SARA 313 - Reporting thresholds |
|--------------------|-----------|----------|-------------------------------|---------------------------------|
| Ammonium hydroxide | 1336-21-6 | 35       | 1.0 %                         | -                               |
| Ammonia            | 7664-41-7 | -        | 1.0 %                         | -                               |

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

| Component          | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|--------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Ammonium hydroxide | X                          | 1000 lb                     | -                      | -                         |
| Ammonia            | X                          | 100 lb                      | -                      | -                         |

**Clean Air Act**

Not applicable

OSHA - Occupational Safety and Health Administration

Not applicable

| Component | Specifically Regulated Chemicals | Highly Hazardous Chemicals   |
|-----------|----------------------------------|------------------------------|
| Ammonia   | -                                | TQ: 10000 lb<br>TQ: 15000 lb |

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component          | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|--------------------|--------------------------|---|-------------------------------|
| Ammonium hydroxide | 1000 lb                  | -   | 1000 lb<br>454 kg             |
| Ammonia            | 100 lb                   | 100 lb                                    | 100 lb<br>45.4 kg             |

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------|---------------|------------|--------------|----------|--------------|
|           |               |            |              |          |              |

|                    |   |   |   |   |   |
|--------------------|---|---|---|---|---|
| Water              | - | - | X | - | - |
| Ammonium hydroxide | X | X | X | - | - |
| Ammonia            | X | X | X | - | X |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant Y  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

**Legend** - STQs = Screening Threshold Quantities, APA = A placarded amount

| Component | DHS Chemical Facility Anti-Terrorism Standard                                      |
|-----------|--|
| Ammonia   | Release STQs - 10000lb (anhydrous)<br>Release STQs - 20000lb (concentration >=20%) |

**Other International Regulations****Mexico - Grade** No information available**Authorisation/Restrictions according to EU REACH**

| Component          | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances   | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|--------------------|-----------|---|---|---|
| Water              | 7732-18-5 | -   | -   | -   |
| Ammonium hydroxide | 1336-21-6 | -   | Use restricted. See entry 75.<br>(see link for restriction details) Use restricted. See entry 65.<br>(see link for restriction details) | -   |
| Ammonia            | 7664-41-7 | -   | Use restricted. See entry 75.<br>(see link for restriction details)   | -   |

**REACH links**<https://echa.europa.eu/substances-restricted-under-reach>**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component          | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--------------------|-----------|----------|------------------------------|---------------------------|--|
| Water              | 7732-18-5 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Ammonium hydroxide | 1336-21-6 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Ammonia            | 7664-41-7 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

| Component | CAS No | Seveso III Directive (2012/18/EC) - | Seveso III Directive (2012/18/EC) - | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------|--------|-------------------------------------|-------------------------------------|----------------------------|------------------------------------|
|           |        |                                     |                                     |                            |                                    |

|                    |           | Qualifying Quantities<br>for Major Accident<br>Notification | Qualifying Quantities<br>for Safety Report<br>Requirements |                |                |
|--------------------|-----------|---|--|----------------|----------------|
| Water              | 7732-18-5 | Not applicable  | Not applicable   | Not applicable | Not applicable |
| Ammonium hydroxide | 1336-21-6 | Not applicable  | Not applicable   | Not applicable | Not applicable |
| Ammonia            | 7664-41-7 | 50 tonne  | 200 tonne  | Not applicable | Not applicable |

## 16. Other Information

|                         |   |
|-------------------------|---|
| <b>Prepared By</b>      | Product stewardship (Regulatory Affairs)<br>Thermo Fisher Scientific<br>email - begel.sdsdesk@thermofisher.com  |
| <b>Creation Date</b>    | 23-Nov-2009   |
| <b>Revision Date</b>    | 20-Dec-2025   |
| <b>Print Date</b>       | 20-Dec-2025   |
| <b>Revision Summary</b> | Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024. |

### 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, use, processing, storage, transportation, disposal and release 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

**End of SDS**