



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA HCS 2024 and Canada Hazardous Products Act (HPA) and
Hazardous Products Regulation (HPR), as amended

Issuing Date 30-Apr-2025

Revision date 30-Apr-2025

Revision Number 1

1. Identification

Product identifier

Product Name Ammonia

Other means of identification

UN number or ID number UN1005

Synonyms Ammonia, Liquefied; Ammonia, Anhydrous, Azane

Recommended use of the chemical and restrictions on use

Recommended use Industrial use, Professional use
Manufacturing use
Formulation of preparations (mixtures)
Intermediate

Restrictions on use None known

Details of the supplier of the safety data sheet

Initial supplier identifier

Methanex Corporation
1800 Waterfront Centre
200 Burrard Street, V6C 3M1
Canada
T (604).661.2600

Supplier Address

Methanex Methanol Company
5850 Granite Parkway Suite 400
Plano, TX 75024
USA
T +1 972 702 0909 - F +1 972 233 1266

Emergency telephone number

Emergency telephone CHEMTREC Emergency Tel. #: 1-800-424-9300 (Canada and USA)
CANUTEC Emergency Tel.# (613)-996-6666 (Canada) *666 (cellular)

2. Hazard(s) identification

Classification of the substance or mixture

Flammable gases	Category 2
Gases under pressure	Liquefied gas
Acute toxicity - Inhalation (Gases)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Category 3 Target organ effects: Respiratory irritation	

Label elements

Danger

Hazard statements

Flammable gas.
Contains gas under pressure; may explode if heated.
Toxic if inhaled.
Causes severe skin burns and eye damage.
May cause respiratory irritation.
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

**Precautionary Statements - Prevention**

Use only outdoors or in a well-ventilated area.
Do not breathe dust, fume, gas, mist, vapors and spray.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.
In case of inadequate ventilation wear respiratory protection.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid release to the environment.

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor.
Specific treatment is urgent (see supplemental first aid instructions on this label).
Collect spillage.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
Immediately call a POISON CENTER or doctor.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Fire

In case of leakage, eliminate all ignition sources.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

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

No information available.

Other information

May cause frostbite upon sudden release of liquefied gas.

3. Composition/information on ingredients

Substance

Synonyms Ammonia, Liquefied; Ammonia, Anhydrous, Azane

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Ammonia, anhydrous	7664-41-7	100	-	-

4. First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Get immediate medical attention. If breathing is difficult, administer oxygen. Delayed pulmonary edema may occur.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Get immediate medical attention. Flush with Diphotherine®.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. DO NOT USE HOT WATER. Get immediate medical attention. Wash contaminated clothing before reuse. Flush with Diphotherine®.
Ingestion	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. 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. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	Frostbite. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. May cause blindness. Vomiting. Nausea. Headache. May cause respiratory irritation.
Effects of Exposure	May develop lung edema up to 24 hours after exposure. Lung injury may appear as a delayed phenomenon; pulmonary edema may follow chemical bronchitis. May burn mucous membranes.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give
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chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical, CO2, alcohol-resistant foam or water spray.
Unsuitable extinguishing media	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.
Specific hazards arising from the chemical	Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated. Ruptured cylinders may rocket. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
Explosion data	
Sensitivity to mechanical impact	Yes.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with flooding quantities of water until well after fire is out. Vapors from liquefied gas are initially heavier than air and spread along ground. Use water spray to reduce vapors or divert vapor cloud drift. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. For tank, rail car or tank truck, evacuation radius: 1600 meters (1 mile). Withdraw immediately in case of rising sound from venting of safety devices or discoloration or bulging of cylinders.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not breathe dust/fume/gas/mist/vapors/spray.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Keep out of drains, sewers, ditches and waterways.
Methods for cleaning up	Ventilate the area. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Wear personal protective equipment. In case of insufficient ventilation, wear suitable respiratory equipment. Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Avoid contact with skin, eyes or clothing. Handle product only in closed system or provide appropriate exhaust ventilation.
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Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe dust/fume/gas/mist/vapors/spray.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Store in accordance with local regulations. Keep container tightly closed in a dry and well-ventilated place. Keep cool. Protect from sunlight. Keep away from heat, sparks and open flame. Store away from incompatible materials. Keep at temperatures below 25°C.

8. Exposure controls/personal protection

Control Parameters

Exposure Limits

Chemical name	ACGIH TLV		OSHA PEL	NIOSH
Ammonia, anhydrous 7664-41-7	TWA: 25 ppm STEL: 35 ppm		TWA: 50 ppm TWA: 35 mg/m ³ (vacated) STEL: 35 ppm (vacated) STEL: 27 mg/m ³	TWA: 25 ppm; TWA: 18 mg/m ³ ; STEL: 35 ppm STEL: 27 mg/m ³ IDLH: 300 ppm
Chemical name	Alberta	British Columbia	Ontario	Quebec
Ammonia, anhydrous 7664-41-7	TWA: 25 ppm; TWA: 17 mg/m ³ ; STEL: 35 ppm; STEL: 24 mg/m ³ ;	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;	TWAEV: 25 ppm; TWAEV: 17 mg/m ³ ; STEV: 35 ppm; STEV: 24 mg/m ³ ;

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Ammonia, anhydrous	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Ammonia, anhydrous	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; STEL: 35 ppm;	TWA: 25 ppm; TWA: 18 mg/m ³ ; STEL: 40 ppm; STEL: 30 mg/m ³ ;

Note

Other information on limit values

See section 16 for terms and abbreviations.

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls

Ensure adequate ventilation, especially in confined areas. Handle product only in closed system or provide appropriate exhaust ventilation. Ensure that eyewash stations and safety

showers are close to the workstation location. Use spark-proof tools and explosion-proof equipment. Portable Diphoterine® eyewashers.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Hand protection	Wear suitable gloves. Butyl rubber. Viton™.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Apron. Boots.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. Self-contained breathing apparatus (SCBA): Type K for ammonia and amines.
Environmental exposure controls	Avoid release to the environment. Do not allow into any sewer, on the ground or into any body of water.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Compressed gas, Liquefied gas
Physical state	Gas
Color	Colorless
Odor (includes odor threshold)	Pungent, Irritating: 5 ppm

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	-77.73 °C / -107.9 °F	
Boiling point (or initial boiling point or boiling range)	-33.4 °C / -28.12 °F	
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits	28%	101.3 kPa
Lower flammability or explosive limits	15%	
Flash point	11 °C / 51.8 °F	
Autoignition temperature	651 °C / 1203.8 °F	
Decomposition temperature		No data available
SADT (°C)		No data available
pH	11.7	Approximately
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity	0.266 cP	@ - 29°F (- 34°C)
Solubility		No data available
Water solubility	34% @ 20°C	(68°F)
Partition coefficient n-octanol/water (log value)		No data available
Vapor pressure (includes evaporation rate)	124 PSIA @ 68°F (20°C)	(1822 mmHg)
Evaporation rate		No data available
Density and/or relative density	0.633 @ 39°F (4°C)	Water = 1
Bulk density	620 kg/m³	@ - 9°F (16°C)
Liquid Density		No data available
Relative vapor density	0.6 @ 32°F (0°C)	(air = 1)
Particle characteristics		

Particle Size
Particle Size DistributionNo data available
No data available**Other information**

Molecular formula	NH ₃
Molecular weight	17.03 g/mol
VOC content	0%
Softening point	No information available
Conductivity	1.9e+007
Critical Temperature °C	133.4 °C
Solid content (%)	0%

Information with regard to physical hazard classes**Explosives**

Explosive properties No information available

Gases under pressure

Critical Temperature °C 133.4 °C

Oxidizing properties

Not an oxidizer

Formation of explosible dust/air mixtures

Minimum Ignition Energy (mJ) 680 mJ

10. Stability and reactivity**Reactivity** None under normal use conditions.**Chemical stability** Stable under normal conditions.**Possibility of hazardous reactions** None under normal processing.**Conditions to avoid** Excessive heat. Exposure to air or moisture over prolonged periods. Eliminate sources of ignition. Heat, flames and sparks.**Incompatible materials** Strong acids, Strong bases, Aluminum, Chromates, Copper, Halogens, Metal oxides, Nickel, Organic material, Zinc.**Hazardous decomposition products** Thermal decomposition can lead to release of irritating gases and vapors: Nitrogen oxides (NO_x), Hydrogen, Ammonia.**11. Toxicological information****Information on likely routes of exposure****Product Information**

Inhalation	Toxic by inhalation. Corrosive by inhalation. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.
Eye contact	Causes serious eye damage. Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes. Contact with product may cause frostbite.
Skin contact	Causes burns. Corrosive. Contact with product may cause frostbite.
Ingestion	Causes burns. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Frostbite. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. May cause blindness. Vomiting. Nausea. Headache.

Acute toxicity Toxic by inhalation.

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ammonia, anhydrous	= 350 mg/kg (Rat)	-	= 9850 mg/m ³ (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe skin burns and eye damage. Classification is based on the pH of the product.

Serious eye damage/eye irritation Causes serious eye damage. Classification is based on the pH of the product.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Based on available data, the classification criteria are not met.

Product Information		
Species	Method	Results
Rat, male		
Rat, female		

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ammonia, anhydrous 7664-41-7	-	LC50: =0.44mg/L (96h, Cyprinus carpio) LC50: 0.26 - 4.6mg/L (96h, Lepomis macrochirus) LC50: =1.17mg/L (96h, Lepomis macrochirus)	-	LC50: =25.4mg/L (48h, Daphnia magna)

		LC50: 0.73 - 2.35mg/L (96h, Pimephales promelas) LC50: =5.9mg/L (96h, Pimephales promelas) LC50: >1.5mg/L (96h, Poecilia reticulata) LC50: =1.19mg/L (96h, Poecilia reticulata)		
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Persistence and degradability Readily biodegradable.

Bioaccumulation Bioaccumulation unlikely.

Component Information

Chemical name	Partition coefficient
Ammonia, anhydrous 7664-41-7	0.23

Mobility Mobility in soil is expected to be limited, due to strong adsorption of ammonium ions to clay minerals and the bacterial oxidation to nitrate. Ammonium in soil is in dynamic equilibrium with nitrate and other substrates in the nitrate cycle.

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation, Dispose of waste via a licensed waste disposal contractor.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT

UN number or ID number	UN1005
Proper shipping name	Ammonia, anhydrous
Transport hazard class(es)	2.3
Subsidiary hazard class	8
Reportable quantity (lbs)	Ammonia, anhydrous: RQ (lb)= 100.00
Reportable quantity (lbs) (calculated)	Ammonia, anhydrous: RQ (lb)= 100.00
Reportable quantity (kg)	(Ammonia, anhydrous: RQ (kg)= 45.40)
Reportable quantity (kg) (calculated)	Ammonia, anhydrous: RQ (kg)= 45.40
Special Provisions	4, 379, N87, T50
DOT Marine Pollutant	P
Marine pollutant	Ammonia, anhydrous
Description	UN1005, Ammonia, anhydrous, 2.3 (8)
Emergency Response Guide	125

Number

TDG

UN number or ID number UN1005
 Proper shipping name Ammonia, anhydrous
 Transport hazard class(es) 2.3
 Subsidiary hazard class 8
 Special Provisions 23, 158, 1.24
 Marine pollutant Ammonia, anhydrous.
 Description UN1005, Ammonia, anhydrous, 2.3 (8)

IATA

Forbidden for transport.
 UN number or ID number UN1005
 UN proper shipping name Ammonia, anhydrous
 Transport hazard class(es) 2.3
 Subsidiary hazard class 8
 Environmental hazards Yes
 Special Provisions A2
 ERG Code 2CP
 Description Forbidden

IMDG

UN number or ID number UN1005
 UN proper shipping name Ammonia, anhydrous
 Transport hazard class(es) 2.3
 Subsidiary hazard class 8
 Marine pollutant indicator P
 Marine pollutant name Ammonia, anhydrous
 Special Provisions 23, 379
 EmS-No. F-C S-U
 Description UN1005, Ammonia, anhydrous, 2.3 (8), Marine pollutant

15. Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories**TSCA**

Chemical name	CAS No.	Inventory Listing Status	Commercial Activity Designation
Ammonia, anhydrous	7664-41-7	Present	Active

DSL/NDSL Listed on DSL.
 EINECS/ELINCS EINECS: 231-635-3.
 ENCS Listed.
 IECSC Listed.
 KECI Listed.
 PICCS Listed.
 AICS Listed.

NZIoC
TCSI

Listed.
Listed.

US 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.

Chemical name	SARA 313 - Threshold Values %
Ammonia, anhydrous - 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)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

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).

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Ammonia, anhydrous 7664-41-7	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 3	Flammability 4	Instability 0	Special hazards -
HMIS	Health hazards 3	Flammability 4	Physical hazards 3	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)

AIIC	Australian Inventory of Industrial Chemicals
ATE	Acute Toxicity Estimate
ASTM	American Society for the Testing of Materials
bar	Biological Reference Values for Chemical Compounds in the Work Area
BAT	Biological tolerance values for occupational exposure
BEL	Biological exposure limits
bw	Body weight
Ceiling	Maximum limit value
CMR	Carcinogen, Mutagen or Reproductive Toxicant
DOT	Department of Transportation (United States)
DSL	Domestic Substances List (Canada)
EmS	Emergency Schedule
ENCS	Existing and New Chemical Substances (Japan)
EPA	U.S. Environmental Protection Agency
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO	International Civil Aviation Organization
IECSC	Inventory of Existing Chemical Substances in China
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
KECI	Korean Existing Chemicals Inventory
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOELR	No Observable Effect Loading Rate
NTP	National Toxicology Program (United States)
NZIoC	New Zealand Inventory of Chemicals
OECD	Organization for Economic Cooperation and Development
OEL	Occupational exposure limits
OSHA	Occupational Safety and Health Administration of the US Department of Labor
PBT	Persistent, Bioaccumulative and Toxic substance
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PMT	Persistent, Mobile and Toxic
PPE	Personal protective equipment
QSAR	Quantitative Structure Activity Relationship
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)
SADT	Self-Accelerating Decomposition Temperature
SAR	Structure-activity relationship
SARA	Superfund Amendments and Reauthorization Act
SDS	Safety Data Sheet
SL	Surface Limit
STEL	Short Term Exposure Limit
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
TCSI	Taiwan Chemical Substance Inventory
TDG	Transport of Dangerous Goods (Canada)
TSCA	Toxic Substances Control Act (United States)

TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
DS	Dermal Sensitizer
Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitizer
RS	Respiratory Sensitizer
S	Sensitizer
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation
dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 U.S. Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
 International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
 International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
 United Nations World Health Organization (WHO)

Issuing Date 30-Apr-2025

Revision date 30-Apr-2025

Revision Note Initial Release.

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 Safety Data Sheet