SAFETY DATA SHEET

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) (OSHA HCS)

SECTION 1. IDENTIFICATION

Product name	:	Ammonia (ca. 4% in Isopropyl Alcohol, ca. 2.0mol/L)
Product code	:	A2237

Manufacturer or supplier's details

Company name of supplier	:	TCI America
Address	:	9211 N. Harborgate Street Portland, OR 97203 U.S.A.
Telephone	:	+1-800-4238616/+1-503-2831681
Telefax	:	+1-888-5201075/+1-503-2831987
E-mail address	:	sales-US@TCIchemicals.com

Chemical Emergencies: TCI America (8:00am - 5:00pm) PST +1-503-2867624
Transportation Emergencies: Chemtrec 24-Hour +1-800-4249300 (U.S.A.)/+1-703-5273887 (International)

Recommended use of the chemical and restrictions on use

Recommended use	:	Use as laboratory reagent

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	:	Category 2
Skin irritation	:	Category 2
Serious eye damage	:	Category 1
Respiratory sensitization	:	Category 1
Germ cell mutagenicity	:	Category 2
Reproductive toxicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 1 (Respiratory system, Kidney, Central nervous system)
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Liver, blood vessel, Lungs, spleen)
Short-term (acute) aquatic hazard	:	Category 2
Long-term (chronic) aquatic hazard	:	Category 2

GHS label elements

Hazard pictograms :

Signal Word	:	Danger
Hazard Statements	:	H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H318 Causes serious eye damage. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H341 Suspected of causing genetic defects. H361 Suspected of damaging fertility or the unborn child. H370 Causes damage to organs (Respiratory system, Kidney, Central nervous system). H373 May cause damage to organs (Liver, blood vessel, Lungs, spleen) through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Precautionary Statements	:	**Prevention:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 + P310 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/ doctor.
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS RN	Concentration (% w/w)
Isopropyl Alcohol	67-63-0	>= 90 - <= 100
Ammonia	7664-41-7	>= 1 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing.Call a POISON CENTER or doctor/ physician.

In case of skin contact : Take off all contaminated clothing immediately.If on skin, rinse well with water.Call a POISON CENTER or doctor/ physician.

In case of eye contact : Rinse with plenty of water.If easy to do, remove contact lens, if worn.Immediately call a POISON CENTER or doctor/ physician.

If swallowed	:	Immediately call a POISON CENTER or doctor/ physician.Rinse mouth.Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	:	None known.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry powder, Alcohol-resistant foam, Water spray, Carbon dioxide (CO2)
Specific hazards during fire fighting	:	No information available.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Remove undamaged containers from fire area if it is safe to do so.
Special protective equipment for fire-fighters	:	Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear suitable protective equipment.Keep people away from and upwind of spill/leak.Ensure adequate ventilation.Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions	:	Should not be released into the environment.
Methods and materials for containment and cleaning up	:	Collect as much of the spill as possible with a suitable absorbent material.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Prevent generation of vapor or mist.Take precautionary measures against static discharge.Use explosion-proof equipment.
Local/Total ventilation	:	Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Use a local exhaust ventilation.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not subject to grinding, shock or friction. Wash hands and face thoroughly after handling. Open drum carefully as content may be under pressure.
Conditions for safe storage	:	Keep container tightly closed. Store in a refrigerator. Keep in a well-ventilated place. Use explosion-proof equipment. Keep under inert gas. Store locked up.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS RN	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Isopropyl Alcohol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m3	NIOSH REL
		ST	500 ppm 1,225 mg/m3	NIOSH REL
		TWA	400 ppm 980 mg/m3	OSHA Z-1
		TWA	400 ppm 980 mg/m3	OSHA P0
		STEL	500 ppm 1,225 mg/m3	OSHA P0
Ammonia	7664-41-7	TWA	50 ppm 35 mg/m3	OSHA Z-1
		STEL	35 ppm 27 mg/m3	OSHA P0

		TWA	25 ppm (Ammonia)	ACGIH
		STEL	35 ppm (Ammonia)	ACGIH
		TWA	25 ppm 18 mg/m3 (Ammonia)	NIOSH REL
		ST	35 ppm 27 mg/m3 (Ammonia)	NIOSH REL

Biological occupational exposure limits

Components	CAS RN	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Isopropyl Alcohol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI

Engineering measures : Install a closed system or local exhaust.Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection : Gas mask, Self-contained breathing apparatus
Hand protection : Impervious gloves
Eye protection : Safety glasses, Safety goggles, Face-shield
Skin and body protection : Impervious protective clothing

*Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	colorless
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	0.78
Solubility(ies)	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Molecular weight	:	17.03 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No data available
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None under normal processing.
Conditions to avoid	:	Heat. Electrical spark Open flame Electrostatic discharge Exposure to air.
Incompatible materials	:	Oxidizing agents, Acids
Hazardous decomposition products	:	Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Product:
Acute inhalation toxicity : Acute toxicity estimate: 75 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Components:
Isopropyl Alcohol:
Acute oral toxicity : TDLo (Humans): 223 mg/kg

TDLo (Humans, male): 14,432 mg/kg

LD50 (Rat): 5,045 mg/kg

Acute inhalation toxicity : TCLo (Humans): 35 ppm
Exposure time: 4 h
Test atmosphere: gas

LC50 (Rat): 16000 ppm
Exposure time: 8 h
Test atmosphere: gas

Acute dermal toxicity : LD50 (Rabbit): 12,800 mg/kg

Skin corrosion/irritation
Product:
Result : Skin irritation

Components:
Ammonia:
Result : Causes burns.

Serious eye damage/eye irritation
Product:
Result : Irreversible effects on the eye

Components:
Isopropyl Alcohol:
Result : Eye irritation

Components:
Ammonia:
Result : Irreversible effects on the eye

Respiratory or skin sensitization
Components:
Ammonia:
Assessment : May cause sensitization by inhalation.

Germ cell mutagenicity
Product:
Germ cell mutagenicity - Assessment : Suspected of inducing heritable mutations in the germ cells of humans.

Carcinogenicity
IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Product:
Reproductive toxicity - Assessment : Suspected human reproductive toxicant
Components:
Isopropyl Alcohol:

Reproductive toxicity - Assessment : Suspected human reproductive toxicant

STOT-single exposure

Product**:**

Assessment : May cause respiratory irritation.

Target Organs : Respiratory system, Kidney, Central nervous system

Assessment : Causes damage to organs.

Components:

Isopropyl Alcohol:

Assessment : May cause respiratory irritation.

Target Organs : Kidney, Central nervous system

Assessment : Causes damage to organs.

Components:

Ammonia:

Target Organs : Respiratory system

Assessment : Causes damage to organs.

STOT-repeated exposure

Product**:**

Target Organs : Liver, blood vessel, Lungs, spleen

Assessment : May cause damage to organs through prolonged or repeated exposure.

Components:

Isopropyl Alcohol:

Target Organs : Liver, blood vessel, spleen

Assessment : May cause damage to organs through prolonged or repeated exposure.

Components:

Ammonia:

Target Organs : Lungs

Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity : No information available.

Aspiration toxicity

Product**:**

May be harmful if swallowed and enters airways.

Components:

Isopropyl Alcohol:

May be harmful if swallowed and enters airways.

RTECS No. : NT8050000 (Isopropyl Alcohol)
BO0875000 (Ammonia)

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Components:

Isopropyl Alcohol:

Toxicity to fish : LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l

invertebrates		Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l Exposure time: 72 h

Components:

Ammonia:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.37 mg/l Exposure time: 48 h LC50 (Pimephales promelas (fathead minnow)): 5.9 mg/l Exposure time: 96 h

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Persistence and degradability

No data available

Bioaccumulative potential

Components:

Isopropyl Alcohol:

Partition coefficient: n-octanol/water	:	0.05

Mobility in soil

Components:

Isopropyl Alcohol:

Distribution among environmental compartments	:	Koc: 1.5

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Disposal in accordance with local and national regulations.Take precautions against ignition or explode.Entrust disposal to a licensed waste disposal company.
Contaminated packaging	:	Disposal in accordance with local and national regulations.Before disposal of used container, remove contents completely.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 1219
Proper shipping name	:	Isopropyl alcohol solution
Class	:	3
Packing group	:	II

IMDG-Code

UN number	:	UN 1219
Proper shipping name	:	ISOPROPYL ALCOHOL SOLUTION
Class	:	3
Packing group	:	II
EmS Code	:	F-E, S-D
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1219
Proper shipping name	:	Isopropyl alcohol solution
Class	:	3
Packing group	:	II
ERG Code	:	129
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Components	CAS RN	Component RQ (lbs)	Calculated product RQ (lbs)
Ammonia	7664-41-7	100	2500

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS RN	Component RQ (lbs)	Calculated product RQ (lbs)
Ammonia	7664-41-7	100	2500

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS RN	Component TPQ (lbs)
Ammonia	7664-41-7	500

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Isopropyl Alcohol	67-63-0	>= 90 - <= 100 %
Ammonia	7664-41-7	>= 1 - < 5 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

Ammonia	7664-41-7	>= 1 - < 5 %

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

Isopropyl Alcohol	67-63-0	>= 90 - <= 100 %

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ammonia	7664-41-7	>= 1 - < 5 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ammonia	7664-41-7	>= 1 - < 5 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Isopropyl Alcohol	67-63-0
Ammonia	7664-41-7

Pennsylvania Right To Know

Isopropyl Alcohol	67-63-0
Ammonia	7664-41-7

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California List of Hazardous Substances

Isopropyl Alcohol	67-63-0
Ammonia	7664-41-7

California Permissible Exposure Limits for Chemical Contaminants

Isopropyl Alcohol	67-63-0
Ammonia	7664-41-7

California List of Acutely Hazardous Chemicals, Toxics and Reactives

Ammonia	7664-41-7

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Revision Date : 11/05/2024

This SDS was prepared sincerely based on the information obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling operations, sufficient care should be taken, in addition to the safety measures suitable for the given situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.