

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) and Canadian
Workplace Hazardous Material Information System (WHMIS 2015)

Issuing Date 11-Apr-2024

Revision date 28-Jun-2024

Revision Number 1

1. Identification

Product identifier

Product Catalog Number:	Product Description:
40-4115-XX	20% 1-Methylimidazole in Acetonitrile/ 2,6-Lutidine

Product Code(s)

40-4115-XX

Product Name

Cap Mix A

Other means of identification

UN number or ID number UN2924

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use For research use only

Restrictions on use Not for human diagnostic use

Details of the supplier of the safety data sheet

Manufacturer Address

Glen Research LLC
22825 Davis Drive
Sterling, VA 20164 USA

Emergency telephone number

Company Phone Number 1-703-437-6191

Emergency Telephone

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2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Flammable liquids	Category 2

Appearance Clear Liquid

Physical state Liquid

Odor Pungent Sweet Ether-like odor

Label elements

Signal word

Danger

Hazard statements

Harmful if swallowed

Harmful in contact with skin

Toxic if inhaled

Causes severe skin burns and eye damage



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Do not breathe dusts or mists

Wear protective gloves, protective clothing, eye protection and face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor

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

Call a POISON CENTER or doctor if you feel unwell

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

Wash contaminated clothing before reuse

Inhalation

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

Immediately call a POISON CENTER or doctor

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Do NOT induce vomiting

Precautionary Statements - Storage

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

Store locked up

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant

Other information

No information available.

Unknown acute toxicity

30 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

3. Composition/information on ingredients

Substance

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Acetonitrile	75-05-8	30-75	-	-
2,6-Lutidine	108-48-5	15-40	-	-
N-Methylimidazole	616-47-7	10-30	-	-

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. 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. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention. Immediate medical attention is required.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.
Ingestion	Do NOT induce vomiting. Rinse mouth. 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 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. Do not breathe vapor or mist. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
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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 chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous combustion products	Hydrogen cyanide. Nitrogen oxides (NOx). Carbon oxides.
Explosion data	
Sensitivity to mechanical impact	None.
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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not breathe vapor or mist.
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.
Methods for cleaning up	Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials.
Packaging materials	Glass.

8. Exposure controls/personal protection

Control parameters Exposure Limits

Chemical name		ACGIH TLV		OSHA PEL		NIOSH	
Acetonitrile 75-05-8		TWA: 20 ppm S*		TWA: 40 ppm TWA: 70 mg/m³ (vacated) TWA: 40 ppm (vacated) TWA: 70 mg/m³ (vacated) STEL: 60 ppm (vacated) STEL: 105 mg/m³ S* as CN		IDLH: 137 ppm TWA: 20 ppm TWA: 34 mg/m³	
Chemical name	Alberta		British Columbia		Ontario		Quebec
Acetonitrile 75-05-8	TWA: 20 ppm TWA: 34 mg/m³		TWA: 20 ppm Skin		TWA: 20 ppm Skin		TWA: 20 ppm Ceiling: 10 ppm Ceiling: 11 mg/m³ Skin

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations 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 vapor or mist.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid
Appearance Clear Liquid
Color Clear
Odor Pungent Sweet Ether-like odor
Odor threshold 170 ppm

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flash point	2.0 °C / 35.6 °F	(Acetonitrile)
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Completely soluble	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
<u>Other information</u>		
Explosive properties	No information available	
Oxidizing properties	No information available	
Softening point	No information available	
Molecular weight	No information available	
VOC content	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	No information available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible materials	Acids. Bases. Oxidizing agent.
Hazardous decomposition products	Hydrogen cyanide. Nitrogen oxides (NOx). Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Toxic by inhalation.
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Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death. Redness. Burning. May cause blindness. Coughing and/ or wheezing. Difficulty in breathing.
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Acute toxicity

Numerical measures of toxicity

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	710.50 mg/kg
ATEmix (dermal)	1,100.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapor)	6.02 mg/l

Unknown acute toxicity

- 30 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 30 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acetonitrile 75-05-8	617 mg/kg (mouse)	> 2000 mg/kg (Rabbit)	= 26.8 mg/L (Rat) 4 h
2,6-Lutidine 108-48-5	= 400 mg/kg (Rat)	-	-
N-Methylimidazole 616-47-7	= 1144 mg/kg (Rat)	400 - 640 mg/kg (Rabbit)	-

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

Skin corrosion/irritation	Classification based on data available for ingredients. Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects No information available.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Acetonitrile 75-05-8	-	LC50: 1600 - 1690mg/L (96h, Pimephales promelas) LC50: =1000mg/L (96h, Pimephales promelas) LC50: =1850mg/L (96h, Lepomis macrochirus) LC50: =1650mg/L (96h, Poecilia reticulata)	-	-

Persistence and degradability Not Likely.

Bioaccumulation Not likely to bioaccumulate.

Bioconcentration factor (BCF) log Pow <= 4

Component Information

Chemical name	Partition coefficient
Acetonitrile 75-05-8	-0.34
N-Methylimidazole 616-47-7	-0.19

Mobility in soil Not expected to adsorb on soil.

Mobility Soluble in water.

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused Dispose of in accordance with local regulations. Dispose of waste in accordance with

products	environmental legislation.
Contaminated packaging	Dispose of in accordance with federal, state and local regulations. Do not reuse empty containers.
California waste information	This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT	Regulated
UN number or ID number	UN2924
Proper shipping name	Flammable liquid, corrosive, n.o.s
Transport hazard class(es)	Class 3, (8)
Packing group	Packing Group II
Reportable quantity - lbs	5000 lbs

IATA	Regulated
UN number or ID number	UN2924
UN proper shipping name	Flammable liquid, corrosive, n.o.s.
Transport hazard class(es)	Class 3, (8)
Packing group	Packing Group II

IMDG	Regulated
UN number or ID number	UN2924
UN proper shipping name	Flammable liquid, corrosive, n.o.s.
Transport hazard class(es)	Class 3, (8)
Packing group	Packing Group II
EmS-No.	F-E, S-C

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	All of the components of this product are listed in the TSCA Inventory or exempt.
DSL/NDSL	Listed or exempt.
EINECS/ELINCS	Listed or exempt.
ENCS	Listed or exempt.
IECSC	Listed or exempt.
KECI	Listed or exempt.
PICCS	Listed or exempt.
AIIC	Listed or exempt.

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AIIC** - Australian Inventory of Industrial Chemicals**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 %
Acetonitrile - 75-05-8	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).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Acetonitrile 75-05-8	-	X	X	-

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).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Acetonitrile 75-05-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

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
Acetonitrile 75-05-8	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

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

Key or legend to abbreviations and acronyms used in the safety data sheetLegend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation

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Revision Note No information available

Disclaimer

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End of Safety Data Sheet