SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 01-Jul-2024 **Revision Number** 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Catalog Number:	Product Description:
40-4122-XX	10% 1-Methylimidazole in Tetrahydrofuran/Pyridine

Product Code(s)
40-4122-XX

Product Name
Cap Mix B

Pure substance/mixture Mixture
Contains Tetrahydrofuran; Pyridine; N-Methylimidazole

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use For research use only

Uses advised against Not for human diagnostic use

1.3. Details of the supplier of the safety data sheet

Manufacturer
Glen Research LLC
22825 Davis Drive
Sterling, VA 20164 USA

For further information, please contact

E-mail address support@glenresearch.com

Website www.glenresearch.com

Company Phone Number 1-703-437-6191

1.4. Emergency telephone number

Emergency Telephone CHEMTREC Customer Number (CCN): 234802 Glen Research Corporation
US: 1-800-424-9300 or Local: +1-703-527-3887
EMEA: +44 20 3885 0382
APAC: +65 3163 8374

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

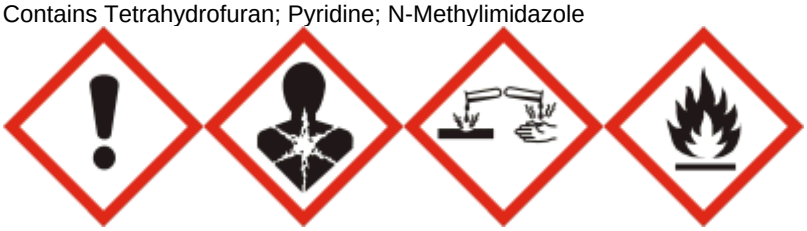
Classification according to
Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Dermal	Category 4 - (H312)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)

Serious eye damage/eye irritation	Category 1 - (H318)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (single exposure)	Category 3 - (H335)
Category 3 Respiratory irritation	
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 2 - (H225)

2.2. Label elements

Contains Tetrahydrofuran; Pyridine; N-Methylimidazole



Signal word
Danger

Hazard statements
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
H412 - Harmful to aquatic life with long lasting effects
H225 - Highly flammable liquid and vapor
EUH019 - May form explosive peroxides

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish

Additional information
This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

Harmful to aquatic life.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No.	Specific concentration	M-Factor	M-Factor (long-term)

				1272/2008 [CLP]	limit (SCL)		
Tetrahydrofuran 109-99-9	74-86	No data available	(603-025-00-0) 203-726-8	Eye Irrit. 2 (H319) Carc. 2 (H351) STOT SE 3 (H335) Flam. Liq. 2 (H225) (EUH019)	Eye Irrit. 2 :: C>=25% STOT SE 3 :: C>=25%	-	-
Pyridine 110-86-1	7-13	No data available	203-809-9 (613-002-00-7)	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Flam. Liq. 2 (H225)	-	-	-
N-Methylimidazole 616-47-7	7-13	No data available	210-484-7 (613-035-00-7)	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314)	-	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate
If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Tetrahydrofuran 109-99-9	1650	2000	No data available	No data available	No data available
Pyridine 110-86-1	866	1000	12.898	No data available	No data available
N-Methylimidazole 616-47-7	1144	400	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.

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.

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 Remove all sources of ignition. Ensure that medical personnel are aware of the material(s)

involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

4.3. 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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

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.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products Nitrogen oxides (NOx). Carbon oxides.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Attention! Corrosive material. Avoid breathing vapors or mists.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if

safe to do so. Prevent product from entering drains. Should not be released into the environment. Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. 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.

General hygiene considerations Do not eat, drink or smoke when using this product. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ *	TWA: 50 ppm TWA: 150 mg/m³ STEL 100 ppm STEL 300 mg/m³ H*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ D*	STEL: 100 ppm STEL: 300.0 mg/m³ TWA: 50.0 ppm TWA: 150.0 mg/m³ K*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ *
Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³ STEL 20 ppm STEL 60 mg/m³ Sk*	TWA: 1 ppm TWA: 3.3 mg/m³	TWA: 15.0 mg/m³	TWA: 5 ppm TWA: 15 mg/m³

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Tetrahydrofuran 109-99-9	* STEL: 100 ppm STEL: 300 mg/m³ TWA: 50 ppm TWA: 150 mg/m³	TWA: 150 mg/m³ Ceiling: 300 mg/m³ D*	TWA: 50 ppm TWA: 150 mg/m³ H* STEL: 300 mg/m³ STEL: 100 ppm	S+ TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ A*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ iho*
Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 mg/m³ Sk* Ceiling: 10 mg/m³	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 30 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 1 ppm TWA: 3 mg/m³ STEL: 5 ppm STEL: 16 mg/m³ Sk*

Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ *	TWA: 50 ppm TWA: 150 mg/m³ H*	TWA: 20 ppm TWA: 60 mg/m³ Peak: 40 ppm Peak: 120 mg/m³ *	TWA: 200 ppm TWA: 590 mg/m³ STEL: 250 ppm STEL: 735 mg/m³	TWA: 150 mg/m³ TWA: 50 ppm STEL: 300 mg/m³ STEL: 100 ppm b*
Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 30 mg/m³	-	Sk*	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 30 mg/m³	TWA: 15 mg/m³ TWA: 5 ppm STEL: 30 mg/m³ STEL: 10 ppm Sk* sz+

Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ Sk*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ cute*	TWA: 50 ppm TWA: 147 mg/m³ STEL: 100 ppm STEL: 295 mg/m³ cute*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ Ada*	O* TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³
Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 30 mg/m³	-	TWA: 1 ppm TWA: 3.2 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³

Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Tetrahydrofuran 109-99-9	Peau* STEL: 100 ppm STEL: 300 mg/m³ TWA: 50 ppm TWA: 150 mg/m³	skin* STEL: 100 ppm STEL: 300 mg/m³ TWA: 50 ppm TWA: 150 mg/m³	TWA: 100 ppm TWA: 300 mg/m³ STEL: 200 ppm STEL: 600 mg/m³ H*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 75 ppm STEL: 187.5 mg/m³ H*	STEL: 300 mg/m³ TWA: 150 mg/m³ skóra*
Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 0.3 ppm TWA: 0.9 mg/m³	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 22.5 mg/m³	TWA: 5 mg/m³ Sk*

Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ Cutânea*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ P*	TWA: 50 ppm TWA: 150 mg/m³ K* Ceiling: 300 mg/m³	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ K*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ vía dérmica*

Pyridine 110-86-1	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 5 ppm TWA: 15 mg/m³	TWA: 1 ppm TWA: 3 mg/m³

Chemical name	Sweden	Switzerland	United Kingdom
Tetrahydrofuran 109-99-9	NGV: 50 ppm NGV: 150 mg/m³ Bindande KGV: 100 ppm Bindande KGV: 300 mg/m³	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ H*	TWA: 50 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 300 mg/m³ Sk*
Pyridine 110-86-1	NGV: 2 ppm NGV: 7 mg/m³ Vägledande KGV: 3 ppm Vägledande KGV: 10 mg/m³	TWA: 5 ppm TWA: 15 mg/m³ STEL: 10 ppm STEL: 30 mg/m³	TWA: 5 ppm TWA: 16 mg/m³ STEL: 10 ppm STEL: 33 mg/m³

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Tetrahydrofuran 109-99-9	-	-	-	2 mg/L - urine (Tetrahydrofuran) - at the end of the work shift	-

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Tetrahydrofuran 109-99-9	-	-	-	2 mg/L (urine - Tetrahydrofuran end of shift) 2 mg/L - BAT (end of exposure or end of shift) urine	2 mg/L (urine - Tetrahydrofuran end of shift)

Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII
Tetrahydrofuran 109-99-9	2 mg/L (urine - Tetrahydrofuran end of shift) 28 µmol/L (urine - Tetrahydrofuran end of shift)	2 mg/L (urine - Tetrahydrofuran end of shift)	-	2 mg/L - urine (Tetrahydrofuran) - end of shift

Chemical name	Latvia	Luxembourg	Romania	Slovakia
Tetrahydrofuran 109-99-9	-	-	-	2 mg/L (urine - Tetrahydrofuran end of exposure or work shift)

Chemical name	Slovenia	Spain	Switzerland	United Kingdom
Tetrahydrofuran 109-99-9	2 mg/L - urine (Tetrahydrofuran) - at the end of the work shift	2 mg/L (urine - Tetrahydrofuran end of shift)	2 mg/L (urine - Tetrahydrofuran end of shift) 27.7 µmol/L (urine - Tetrahydrofuran end of shift)	-

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls
Showers
Eyewash stations
Ventilation systems

Personal protective equipment

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

Hand protection	Contact glove manufacturer for recommendations. Gloves must conform to standard EN 374. Wear suitable gloves. Impervious gloves.
Skin and body protection	EN ISO 6529. Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.
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.
General hygiene considerations	Do not eat, drink or smoke when using this product. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear Liquid
Color	Clear
Odor	Pungent Sweet Ether-like odor
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	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	
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH	No data available	None known
pH (as aqueous solution)	No data available	No information available
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	Completely soluble	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapor pressure	No data available	None known
Relative density	0.90g/mL	None known
Bulk density	No data available	
Liquid Density	No data available	
Relative vapor density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks. Exposure to air or moisture over prolonged periods. Excessive heat.

10.5. Incompatible materials

Incompatible materials Acids. Bases. Oxidizing agent.

10.6. Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides (NOx). Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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. May cause irritation of respiratory tract. Harmful by inhalation.

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 Redness. Burning. May cause blindness. Coughing and/ or wheezing.

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)	1,454.00 mg/kg
ATEmix (dermal)	1,718.80 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	1.50 mg/l
ATEmix (inhalation-vapor)	99,999.00 mg/l

Unknown acute toxicity
90 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrahydrofuran	= 1650 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 14.7 mg/L (Rat) 4 h
Pyridine	= 866 mg/kg (Rat)	1000 - 2000 mg/kg (Rabbit)	= 12.898 mg/L (Rat) 4 h
N-Methylimidazole	= 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 Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

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

Chemical name	European Union
Tetrahydrofuran	Carc. 2

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Tetrahydrofuran	-	LC50: 1970 - 2360mg/L (96h, Pimephales promelas) LC50: 2700 - 3600mg/L (96h, Pimephales promelas)	-	-
Pyridine	-	LC50: 63.4 - 73.6mg/L (96h, Pimephales promelas) LC50: =26mg/L (96h, Cyprinus carpio) LC50: =4.6mg/L (96h, Oncorhynchus mykiss)	-	-

12.2. Persistence and degradability

Persistence and degradability Not Likely.

12.3. Bioaccumulative potential

Bioaccumulation

Bioconcentration factor (BCF) log Pow <= 4

Component Information

Chemical name	Partition coefficient
Tetrahydrofuran	0.45
Pyridine	0.65
N-Methylimidazole	-0.19

12.4. Mobility in soil

Mobility in soil Not expected to adsorb on soil.

Mobility Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Tetrahydrofuran	The substance is not PBT / vPvB
Pyridine	The substance is not PBT / vPvB
N-Methylimidazole	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number UN2924
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Class 3, (8)
14.4 Packing group Packing Group II
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

IMDG

14.1 UN number or ID number UN1993
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Class 3, (8)
14.4 Packing group Packing Group II
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None
EmS-No. F-E, S-C
14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

ADR
14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

France
Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Tetrahydrofuran 109-99-9	RG 84	-
Pyridine 110-86-1	RG 84	-

Germany
TA Luft (German Air Pollution Control Regulation)

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:
This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Tetrahydrofuran - 109-99-9	75.	-
N-Methylimidazole - 616-47-7	75.	-

Persistent Organic Pollutants
Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)
P5a - FLAMMABLE LIQUIDS
P5b - FLAMMABLE LIQUIDS
P5c - FLAMMABLE LIQUIDS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
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

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

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

Full text of H-Statements referred to under section 3
H225 - Highly flammable liquid and vapor
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer

Legend
SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: Exposure controls/personal protection

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

Revision date 01-Jul-2024

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
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End of Safety Data Sheet