

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: 40-4010-XX	Product Description: Tetrahydrofuran/ 2,6-Lutidine/ Acetic Anhydride
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Product Code(s)
40-4010-XX

Product Name
Cap Mix A

Pure substance/mixture Mixture
Contains 2,6-Lutidine; Acetic Anhydride; Tetrahydrofuran

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

Company Phone Number 1-703-437-6191

Website www.glenresearch.com

E-mail address support@glenresearch.com

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 - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
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
Flammable liquids	Category 2 - (H225)

2.2. Label elements

Contains 2,6-Lutidine; Acetic Anhydride; Tetrahydrofuran



Signal word

Danger

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer
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
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
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 tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No. (Index No.)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
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)	Eye Irrit. 2 :: C>=25% STOT SE 3 :: C>=25%	-	-

				(EUH019)			
Acetic Anhydride 108-24-7	7-13	No data available	(607-008-00-9) 203-564-8	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Skin Corr. 1B (H314) Flam. Liq. 3 (H226)	Eye Dam. 1 :: 5%≤C<25% Eye Irrit. 2 :: 1%≤C<5% Skin Corr. 1B :: C≥25% Skin Irrit. 2 :: 5%≤C<25% STOT SE 3 :: C≥5%	-	-
2,6-Lutidine 108-48-5	7-13	No data available	203-587-3	No data available	-	-	-

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
Acetic Anhydride 108-24-7	630	4000	4.2	No data available	No data available
2,6-Lutidine 108-48-5	400	No data available	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (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. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately.
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. Get immediate medical attention. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get 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 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 Treat symptomatically.

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.

Hazardous combustion products Nitrogen oxides (NO_x). 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. 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. For small spills absorb material on dry rags, cat litter or similar absorbent material and dispose of in the trash.

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.
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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 with local exhaust ventilation. 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. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment.
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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.
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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.
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7.3. Specific end use(s)

Risk Management Methods (RMM)	The information required is contained in this Safety Data Sheet.
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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/m ³ STEL: 100 ppm STEL: 300 mg/m ³ *	TWA: 50 ppm TWA: 150 mg/m ³ STEL 100 ppm STEL 300 mg/m ³ H*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ D*	STEL: 100 ppm STEL: 300.0 mg/m ³ TWA: 50.0 ppm TWA: 150.0 mg/m ³ K*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ *
Acetic Anhydride 108-24-7	-	TWA: 5 ppm TWA: 20 mg/m ³ STEL 10 ppm	TWA: 1 ppm TWA: 4.2 mg/m ³ STEL: 3 ppm	-	TWA: 0.5 ppm TWA: 2.5 mg/m ³ STEL: 2 ppm

		STEL 40 mg/m ³	STEL: 13 mg/m ³		STEL: 10 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Tetrahydrofuran 109-99-9	* STEL: 100 ppm STEL: 300 mg/m ³ TWA: 50 ppm TWA: 150 mg/m ³	TWA: 150 mg/m ³ Ceiling: 300 mg/m ³ D*	TWA: 50 ppm TWA: 150 mg/m ³ H* STEL: 300 mg/m ³ STEL: 100 ppm	S+ TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ A*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ iho*
Acetic Anhydride 108-24-7	-	TWA: 4 mg/m ³ Ceiling: 20 mg/m ³	Ceiling: 2 ppm Ceiling: 20 mg/m ³	STEL: 5 ppm STEL: 20 mg/m ³	STEL: 5 ppm STEL: 21 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ *	TWA: 50 ppm TWA: 150 mg/m ³ H*	TWA: 20 ppm TWA: 60 mg/m ³ Peak: 40 ppm Peak: 120 mg/m ³ *	TWA: 200 ppm TWA: 590 mg/m ³ STEL: 250 ppm STEL: 735 mg/m ³	TWA: 150 mg/m ³ TWA: 50 ppm STEL: 300 mg/m ³ STEL: 100 ppm b*
Acetic Anhydride 108-24-7	STEL: 5 ppm STEL: 20 mg/m ³	TWA: 0.1 ppm TWA: 0.42 mg/m ³	TWA: 0.1 ppm TWA: 0.42 mg/m ³ Peak: 0.2 ppm Peak: 0.84 mg/m ³	TWA: 5 ppm TWA: 20 mg/m ³ STEL: 5 ppm STEL: 20 mg/m ³	TWA: 0.42 mg/m ³ STEL: 0.84 mg/m ³
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ Sk*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ cute*	TWA: 50 ppm TWA: 147 mg/m ³ STEL: 100 ppm STEL: 295 mg/m ³ cute*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ Ada*	O* TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³
Acetic Anhydride 108-24-7	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 10 mg/m ³	-	TWA: 1 ppm TWA: 4.2 mg/m ³ STEL: 3 ppm STEL: 12.5 mg/m ³	TWA: 5 mg/m ³	Ceiling: 5 ppm Ceiling: 20 mg/m ³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Tetrahydrofuran 109-99-9	Peau* STEL: 100 ppm STEL: 300 mg/m ³ TWA: 50 ppm TWA: 150 mg/m ³	skin* STEL: 100 ppm STEL: 300 mg/m ³ TWA: 50 ppm TWA: 150 mg/m ³	TWA: 100 ppm TWA: 300 mg/m ³ STEL: 200 ppm STEL: 600 mg/m ³ H*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 75 ppm STEL: 187.5 mg/m ³ H*	STEL: 300 mg/m ³ TWA: 150 mg/m ³ skóra*
Acetic Anhydride 108-24-7	-	-	-	Ceiling: 5 ppm Ceiling: 20 mg/m ³	STEL: 24 mg/m ³ TWA: 12 mg/m ³
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Tetrahydrofuran 109-99-9	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ Cutânea*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ P*	TWA: 50 ppm TWA: 150 mg/m ³ K* Ceiling: 300 mg/m ³	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ K*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ vía dérmica*
Acetic Anhydride 108-24-7	TWA: 1 ppm STEL: 1 ppm	TWA: 3.6 ppm TWA: 15 mg/m ³ STEL: 6 ppm STEL: 25 mg/m ³	TWA: 5 ppm TWA: 21 mg/m ³ Ceiling: 21 mg/m ³	TWA: 5 ppm TWA: 21 mg/m ³ STEL: 5 ppm STEL: 21 mg/m ³	TWA: 5 ppm TWA: 21 mg/m ³
Chemical name	Sweden		Switzerland	United Kingdom	
Tetrahydrofuran 109-99-9	NGV: 50 ppm NGV: 150 mg/m ³ Bindande KGV: 100 ppm Bindande KGV: 300 mg/m ³		TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ H*	TWA: 50 ppm TWA: 150 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ Sk*	
Acetic Anhydride 108-24-7	Bindande KGV: 5 ppm Bindande KGV: 20 mg/m ³		TWA: 1 ppm TWA: 4 mg/m ³ STEL: 2 ppm STEL: 8 mg/m ³	TWA: 0.5 ppm TWA: 2.5 mg/m ³ STEL: 2 ppm STEL: 10 mg/m ³	

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.

Hand protection Contact glove manufacturer for recommendations. Gloves must conform to standard EN 374. Wear suitable gloves. Impervious gloves.

Skin and body protection Protective clothing must conform to standard EN ISO 6529:2013. 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.

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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. Excessive heat.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides (NO_x). 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. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes. 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)	1,119.10 mg/kg
ATEmix (dermal)	2,352.90 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	4.20 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
Acetic Anhydride	= 630 mg/kg (Rat)	= 4000 mg/kg (Rabbit)	4.2 - 8.5 mg/L (Rat) 4 h
2,6-Lutidine	= 400 mg/kg (Rat)	-	-

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 skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Causes serious eye damage.
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.
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11.2.2. Other information

Other adverse effects	No information available.
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SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Unknown aquatic toxicity	Contains 10 % of components with unknown hazards to the aquatic environment.
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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)	-	-

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
Acetic Anhydride	-0.27

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
Acetic Anhydride	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	Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride)
14.3 Transport hazard class(es)	3
Subsidiary hazard class	8
14.4 Packing group	II
Description	UN2924, Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride), 3 (8), II
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	A3, A803
ERG Code	3CH

IMDG

14.1 UN number or ID number	UN2924
14.2 UN proper shipping name	Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride)
14.3 Transport hazard class(es)	3
Subsidiary hazard class	8
14.4 Packing group	II
Description	UN2924, Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride), 3 (8), II
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	274
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	UN2924
14.2 UN proper shipping name	Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride)
14.3 Transport hazard class(es)	3
Subsidiary hazard class	8
14.4 Packing group	II
Description	UN2924, Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride), 3 (8), II
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	274
Classification code	FC

ADR

14.1 UN number or ID number	UN2924
14.2 UN proper shipping name	Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride)
14.3 Transport hazard class(es)	3
Subsidiary hazard class	8
14.4 Packing group	II
Description	UN2924, Flammable liquid, corrosive, n.o.s. (Tetrahydrofuran, Acetic Anhydride), 3 (8), II, (D/E)
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	274
Classification code	FC
Tunnel restriction code	(D/E)

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
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Tetrahydrofuran 109-99-9	RG 84	-
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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.	-
Acetic Anhydride - 108-24-7	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 Chemicals Inventory

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
- H226 - Flammable liquid and vapor
- H302 - Harmful if swallowed
- 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