

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 12-Jul-2024

Revision Number 1

1. Identification

Product identifier

Product Catalog Number: 30-3105=XX	Product Description: 0.40M Tetrazole in Acetonitrile
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Product Code(s) 30-3105-XX	Product Name Activator
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Other means of identification

UN number or ID number UN1648

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 CHEMTREC Customer Number (CCN): 234802 Glen Research Corporation
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2. Hazard(s) identification

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2A
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

Harmful if inhaled

Causes serious eye irritation

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Avoid breathing dust, fume, gas, mist, vapors and spray

Use only outdoors or in a well-ventilated area

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

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice and attention

Skin

IF ON SKIN: Wash with plenty of water and soap

Call a POISON CENTER or doctor if you feel unwell

Take off contaminated clothing and wash it before reuse

Inhalation

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

Call a POISON CENTER or doctor if you feel unwell

Ingestion

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

Rinse mouth

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant

Other information

No information available.

Unknown acute toxicity

3 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

3 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

3 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. Composition/information on ingredients**Substance**

Chemical name	CAS No.	Weight-%	Hazardous Material	Date HMIRA filed and
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			Information Review Act registry number (HMIRA registry #)	date exemption granted (if applicable)
Acetonitrile	75-05-8	95-99	-	-
1H-Tetrazole	288-94-8	1-5	-	-

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.
Inhalation	Remove to fresh air. 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. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Not an expected route of exposure. IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. Get 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. Avoid breathing vapors or mists. 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. May cause redness and tearing of the eyes. 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	Treat symptomatically.
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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	No information available.
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. Avoid breathing vapors or mists.

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. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

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.

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/m ³ (vacated) TWA: 40 ppm (vacated) TWA: 70 mg/m ³ (vacated) STEL: 60 ppm (vacated) STEL: 105 mg/m ³ S* as CN	IDLH: 137 ppm TWA: 20 ppm TWA: 34 mg/m ³	
Chemical name	Alberta	British Columbia	Ontario	Quebec
Acetonitrile 75-05-8	TWA: 20 ppm TWA: 34 mg/m ³	TWA: 20 ppm Skin	TWA: 20 ppm Skin	TWA: 20 ppm Ceiling: 10 ppm Ceiling: 11 mg/m ³

			Skin
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Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

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. Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse.

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	(1H-Tetrazole)
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	0.79g/mL	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

Other information

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	Excessive heat. Extremes of temperature and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	None known based on information supplied.
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. 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 irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts. Harmful in contact with skin. (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	Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death. May cause redness and tearing of the eyes. Coughing and/ or wheezing.
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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)	636.10 mg/kg
ATEmix (dermal)	1,134.00 mg/kg

ATEmix (inhalation-gas) 99,999.00 ppm
 ATEmix (inhalation-dust/mist) 1.55 mg/l
 ATEmix (inhalation-vapor) 99,999.00 mg/l

Unknown acute toxicity

3 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 3 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 3 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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

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

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

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) $\log Pow \leq 4$

Component Information

Chemical name	Partition coefficient
Acetonitrile 75-05-8	-0.34

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 products Dispose of in accordance with local regulations. Dispose of waste in accordance with 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

UN number or ID number	Regulated UN1648
Proper shipping name	Acetonitrile solution
Transport hazard class(es)	Class 3
Packing group	Packing Group II
Reportable quantity - lbs	5000 lbs

IATA

UN number or ID number	Regulated UN1648
UN proper shipping name	Acetonitrile solution
Transport hazard class(es)	Class 3
Packing group	Packing Group II

IMDG

UN number or ID number	Regulated UN1648
UN proper shipping name	Acetonitrile solution
Transport hazard class(es)	Class 3
Packing group	Packing Group II
EmS-No.	F-E, S-D

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	5000 lb	-	RQ 5000 lb final RQ

75-05-8			RQ 2270 kg final RQ
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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 2	Flammability 3	Instability 0	Special hazards -
HMIS	Health hazards 2	Flammability 3	Physical hazards 0	Personal protection X

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

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

Issuing Date 11-Apr-2024

Revision date 12-Jul-2024

Revision Note No information available

Disclaimer

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End of Safety Data Sheet