SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Standard JIS Z 7250:2000, and EU REACH Regulations

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**TETRAZENE**
CAS Number:	31330-63-9
Synonyms:	1-s-tetrazolyl-4-guanyltetrazene monohydrate, guanyl nitrosoaminoguanyltetrazene, tetrazene 1-(5 tetrazolyl)-4-guanyltetrazene hydrate; 3-Tetrazene-2-carboximidamide, 4-(2H-tetrazol-5-yl)-hydrate (1:1)
Chemical Family:	Substituted iminourea; Substituted carbamidine
Formula:	$C_2H_8N_{10}O$
Product Use:	Initiating explosive
U.N. Number:	UN 0114
U.N. Dangerous Goods Class	Explosive, 1.1A
Manufacturer/Responsible Party:	Olin Winchester, LLC
Manufacturers' Address:	600 Powder Mill Road, East Alton, IL 62024 www.winchester.com
Emergency Telephone Number:	US/Canada: 1-800-424-9300 Outside US/Canada: 703-527-3887
SDS Control Group:	618-258-3507 (Technical Information Only)

Olin SDS No.: 00081.0001 **Issue Date:** 6/1/15

Revision Date: 01/01/2026

Revision No.: 10

2. HAZARDS IDENTIFICATION

DANGER!

EXPLOSIVE. KEEP AWAY FROM HEAT AND SPARKS. DO NOT SUBJECT TO MECHANICAL SHOCK. KEEP WETTED WITH WATER. CAN CAUSE EYE AND RESPIRATORY TRACT IRRITATION. HARMFUL IF INHALED OR SWALLOWED. USE ONLY WITH ADEQUATE VENTILATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. WASH THOROUGHLY AFTER HANDLING.

US DOT SYMBOLS CANADA (WHMIS) SYMBOLS GHS HAZARD SYMBOLS

This Product is not subject to WHMIS

Class 3.2 Explosive







GHS Classifications:
Explosive Division 1.1
Acute Toxicity, Oral & Inhalation (dust/mist), Category 4
Eye Irritation, Category 2
STOT SE, Category 3

Signal Word: Danger

Hazard Statements :
H201: Explosive; mass explosion hazard
H302: Harmful if swallowed
H332: Harmful if inhaled
H319: Causes serious eye irritation
H335: May cause respiratory irritation

Target organs: None

Precautionary Statements:
P102: Keep out of reach of children
P210: Keep away from heat/sparks/open flame/hot surfaces
P230: Keep wetted with water
P240: Ground/bond container and receiving equipment
P250: Do not subject to shock/friction
P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P280: Wear protective gloves/protective clothing/eye protection/face protection

GHS Pictograms:
Exploding Bomb; explosive
Exclamation Mark: toxic, irritating

EU Classifications:

Hazard Symbols	E, Xn, Xi
Risk Phrases	R3: Extreme risk of explosion by shock, friction, fire or other sources of ignition R20/22: Harmful by inhalation and if swallowed R36: Irritating to eyes R37: Irritating to respiratory system
Safety Phrases	S2: Keep out of reach of children S15/16: Keep away from heat, keep away from sources of ignition S20/21: When using do not eat, drink or smoke S22: Do not breathe dust S25: Avoid contact with eyes S28: After contact with skin, wash immediately with plenty of soap and water S33: Take precautionary measures against static discharges S35: This material and its container must be disposed of in a safe way S39: Wear eye/face protection S48: Keep wetted with water S51: Use only in well-ventilated areas

Health Hazards or Risks From Exposure

This material is a substituted iminourea. Dust or fume can cause eye irritation consisting of redness, swelling, and pain. May cause conjunctivitis with repeated exposures. Harmful if inhaled or swallowed. Inhalation of high concentrations may cause respiratory and nasal irritation, coughing, and difficulty breathing. Ingestion may cause nausea, vomiting, constipation, cramps, and or stomach pain.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% By Weight	CAS Number	EINECS/ ELINCS #
Tetrazene	100	31330-63-9	Not Listed

4. FIRST AID MEASURES

Eye Contact: Immediately flush out fume or particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

Skin Contact: Wash skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical attention..

Inhalation: If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing is difficult, give oxygen. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

Ingestion: If ingested, immediately call a physician. Induce vomiting if possible, as directed by medical personnel. Never give anything by mouth to an unconscious person.

Medical Conditions Aggravated By Exposure:
Exposure may aggravate an existing asthma, emphysema, or other respiratory disease.

Recommendations To Physcians:
There is no specific antidote for this chemical. Remove from exposure and treat symptoms.

5. FIRE FIGHTING MEASURES

PROPERTY	*VALUE*	*PROPERTY*	*VALUE*
Explosive	Yes	Flammable	Not applicable
Combustible	Not applicable	Pyrophoric	No
Flash Point (°C):	Explodes at 130 (266°F)	Burning Rate of Material:	Not applicable
Lower Explosive Limit:	Not applicable	Autoignition Temperature (°C) :	Explodes at 130 (266°F)
Upper Explosive Limit:	Not applicable	Flammability Classification: (defined by 29 CFR 1910.1200)	Explosive

Unusal Fire and Explosion Hazards: Do not subject to mechanical shock. Material involved in a fire may not be totally destroyed and will still be subject to detonation. Dust may cause an ignitable and/or an explosive atmosphere.

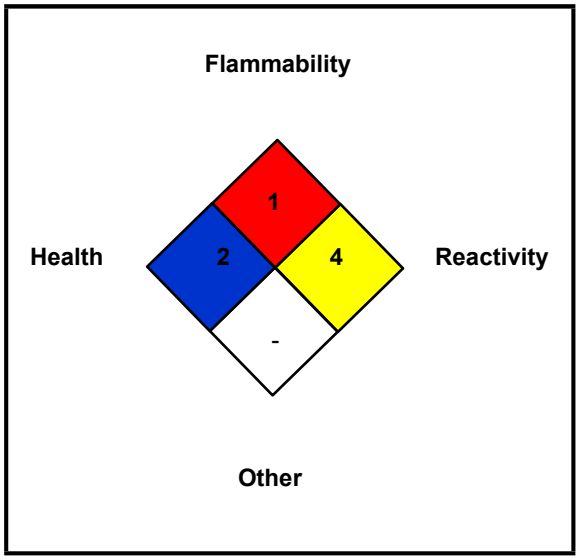
Extinguishing Media: Water spray. Apply by mechanical means only.

Special Firefighting Procedures: Fire involved cargo may explode. Fight all fires from an explosion resistant location. Evacuate all non-essential personnel.

Use water to cool containers exposed to fire. Do not move material exposed to or involved in a fire. Use extreme caution working around this material and avoid any form of mechanical shock. Keep material wet if possible. "DO NOT ALLOW TO DRY."

Firefighters must wear self-contained breathing apparatus (SCBA) and full protective equipment. Structural firefighters' protective clothing will only provide limited protection.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HEALTH HAZARD (BLUE)	**1**
FLAMMABILITY HAZARD (RED)	**1**
PHYSICAL HAZARD (YELLOW)	**4**

PROTECTIVE EQUIPMENT			
EYES	PPE CODE	RESPIRATORY	HEARING
	F	See Sect. 8	See Sect. 8

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

6. ACCIDENTAL RELEASE MEASURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Spill Response: A SPILL OF THIS PRODUCT WILL REPRESENT AN EXPLOSION HAZARD. Remove all sources of ignition, heat and static discharge. Stop source of spill as soon as possible and notify appropriate personnel. Clean-up of this material will require extreme caution. Use non-sparking equipment and keep material wet at all times. Avoid mechanical shock. Material will decompose in boiling water to form hazardous products listed in Section 10. This material may be neutralized for disposal; you are requested to call 1-888-2891-911 for technical assistance before beginning any such operation.

Accidental Release Procedures: If a large spill occurs create a dike and flood with large amounts of water. Prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. See Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling: DO NOT SUBJECT TO MECHANICAL SHOCK. Avoid dispersion of dust in air. Dust should be removed by washing or HEPA vacuuming. Use appropriate personal protective equipment (see Section 8). Workers should wash hands thoroughly after handling. Eating, drinking and smoking should be prohibited in areas where this material is handled and stored.

Conditions for Safe Storage: Store in accordance with local regulations. Store in a cool, dry, well-ventilated place away from all sources of ignition. Do not store above 60°C (140°F). Do not expose to light. Product has a 2 year storage life. Store away from Acids, Class B & C explosives, strong oxidizers, and caustics. Avoid mechanical impact or shock and electrical discharge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

CAS #	*CHEMICAL NAME*	*ACGIH TLV*	*OSHA PEL*	*INTERNATIONAL OELS*
31330-63-9	Tetrazene	None established	None established	None established

Engineering Controls: Local explosion-proof exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general explosion-proof exhaust ventilation.

Respiratory Protection: Maintain airborne contaminant concentrations below guidelines listed above. Use a NIOSH-approved air-purifying respirator equipped with HEPA cartridges/canisters where there is the potential for exceeding established occupational exposure limits.

Eye/Face Protection: Use safety glasses.

Hand Protection: Gloves recommended

Skin Protection: Wear impervious gloves and other protective clothing (aprons, coveralls) as appropriate to prevent skin contact when using this product.

Hearing Protection: Not normally needed.

General Hygiene: Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY	*VALUE*	*PROPERTY*	*VALUE*
Appearance:	Colorless to pale yellow fluffy solid	*Physical State:*	Solid
Molecular Weight:	188	*Odor:*	None
Boiling Point (°F):	Not applicable	*Melting point:*	(Explodes) 128 - 132°C (262-270°F)
Vapor Pressure (mm Hg):	Not applicable	*Freezing point:*	Not applicable
Vapor Density(air = 1):	Not applicable	*Bulk Density (g/cc):*	0.30
Specific gravity (g/cc):	1.65	*Viscosity (cps):*	Not applicable
pH:	6 – 7 (saturated solution)	*Decomposition Temperature:*	100°C (212°F)
Solubility in Water (20 °C):	Insoluble in cold water; decomposes in boiling water	*Evaporation Rate:*	Not applicable
Volatiles, Percent by volume:	Not applicable	*Octanol/water partition coefficient:*	Unknown

10. STABILITY AND REACTIVITY

Stability:	Will explode with mechanical impact or shock
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur
Incompatible Materials:	Oxidizers, other explosives, metal salts
Hazardous Decomposition Products:	Nitrogen oxides, carbon monoxide, carbon dioxide
Conditions to Avoid:	Heat, mechanical impact or shock, electrical discharge. Contact with incompatible materials.

11. TOXICOLOGICAL INFORMATION

Potential Routes of Entry: Inhalation, Skin, and by Ingestion.

Effects Of Acute Exposure:

	Tetracene
Inhalation LC_{50}	No data; believed to be slightly toxic
Skin Contact LD_{50}	No data; believed to be > 2 g/kg, at most slightly toxic
Ingestion LD_{50}	No data; believed to be 1 – 3 g/kg, slightly toxic
Irritation	Eye and respiratory irritant
Sensitization	No data

Other Adverse Effects:

Target Organ Toxicity:	No reported target organ toxicity from this product.
Reproductive Toxicity:	This product is not known or reported to cause reproductive effects.
Teratogenicity (Birth Defects):	This product is not known or reported to cause developmental toxicity.
Mutagenicity:	This product is not known or reported to be mutagenic.
Carcinogenicity:	This product is not listed as a carcinogen by NTP, IARC, OSHA, ACGIH, or EPA.

12. ECOLOGICAL INFORMATION

Environmental Effects:

PRODUCT: Product has not been tested for environmental properties.

ECOTOXICITY:

Tetracene: No data is available on this material

Environmental Fate:

MOBILITY: No data
PERSISTANCE/DEGRADABILITY: No data
BIOACCUMULATION: No data

13. DISPOSAL CONSIDERATIONS

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding the treatment, storage and disposal for hazardous wastes.

14. TRANSPORT INFORMATION

Regulatory Information for US DOT, IATA, IMO, and ADR:

Proper Shipping Name:	Tetrazene, wetted
Hazard Class Number and Description:	Explosive 1.1A
UN Identification Number:	UN 0114
Packing Group:	N/A
DOT Label(s) Required:	1.1A/1.1 Placard
Marine Pollutant:	None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)
Special Comments:	Forbidden on aircraft. Allowed for shipment by rail, motor or water in non-bulk packages only. The applicable packaging sections in 49 CFR are 173.78 (Only on listed). Explosive substances of Division 1.1 Compatibility Group A (1.1A) are forbidden for transportation if dry or not desensitized, unless incorporated in a device. If shipment of the explosive substance is to take place at a time that freezing weather is anticipated, the water contained in the explosive substance must be mixed with denatured alcohol so that freezing will not occur.

Additional Information:

North American Emergency Response Guidebook Number (2004): 112

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING REGULATIONS: This product is classified as dangerous goods under 49 CFR 172.101. Note: May be reclassified domestically as an ORM-D if packaged as a consumer commodity per 49 CFR 173.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is classified as Dangerous Goods.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is classified as Dangerous Goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is classified by the United Nations Economic Commission for Europe to be dangerous goods.

15. REGULATORY INFORMATION

US FEDERAL

TSCA	This chemical is listed on the Toxic Substance Control Act inventory.				
CERCLA:	Not listed				
SARA 313:	Not listed				
SARA 311/312:	*Health*:	Acute – Yes Chronic - No	*Fire:* No	*Reactivity:* Yes	*Release of Pressure*: Yes
SARA 302 EHS List:	Not listed.				

STATE RIGHT-TO-KNOW STATUS

Component	California	New Jersey	Pennsylvania	Massachusetts	Michigan
Tetracene	Not listed	Not listed	Not listed	Not listed	Not listed

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65)

Not listed

GHS CLASSIFICATION

Explosive Division 1.1
Acute Toxicity, Oral & Inhalation (dust/mist), Category 4
Eye Irritation, Category 2
STOT SE, Category 3

EUROPEAN REGULATIONS

Hazard Classification

Danger Symbols:	E, Xn, Xi
Risk Phrases:	R3, R20/22, R36, R37
Safety Phrases:	S2, S15/16, S20/21, S22, S25, S28, S33, S35, S39, S48, S51

German WGK Classification: Not determined

CANADIAN REGULATIONS

DSL/NDSL Inventory: This chemical is listed on the DSL

IDL: Not listed

CEPA PRIORITIES LIST: Not listed

WHMIS: This product is not subject to WHMIS. It is regulated as a Class 3.2 Explosive in Canada.

JAPANESE REGULATIONS

Existing National Inventory of Chemical Substances (ENCS): Not Listed

Japanese Priority Assessment Chemical Substances: Not listed

OTHER INTERNATIONAL CHEMICAL INVENTORIES

Swiss Giftliste List of Toxic Substances:	Listed
Australian Inventory (AICS):	Listed

16. OTHER INFORMATION

REVISIONS: 10
DATE: 01/01/2026
PREPARED BY: Olin Winchester, LLC
OTHER: Additional information available from: www.winchester.com
NOTICE: THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.