

# Electric Detonator, Detonator Assembly

MSDS 214028

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 10/27/2023

Date of issue: 03/27/2015

Version: 3.1

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Device

**Product Name:** Electric Detonator, Detonator Assembly

**Product Code:** 214028, Alias 140-1

### 1.2. Intended Use of the Product

**Use of the substance/mixture:** Defense. For professional use only.

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Company

Tech Ord

47600 180th Street

Clear Lake, SD 57226

605-874-2631

[techord.net](http://techord.net)

### 1.4. Emergency Telephone Number

**Emergency Number** : 800-424-9300

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### Classification (GHS-US)

Expl. 1.4 H204

Acute Tox. 4 (Oral) H302

Acute Tox. 4 (Inhalation) H332

Carc. 1A H350

Repr. 1A H360

STOT RE 1 H372

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

### 2.2. Label Elements

#### GHS-US Labeling

##### Hazard Pictograms (GHS-US)



##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H204 - Fire or projection hazard.  
H302+H332 - Harmful if swallowed or if inhaled.  
H350 - May cause cancer.  
H360 - May damage fertility or the unborn child.  
H372 - Causes damage to organs through prolonged or repeated exposure.  
H400 - Very toxic to aquatic life.  
H410 - Very toxic to aquatic life with long lasting effects.

##### Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from open flames, sparks, heat, hot surfaces. - No smoking.  
P240 - Ground/bond container and receiving equipment.  
P250 - Do not subject to grinding, shock, friction.  
P260 - Do not breathe dust, fume.  
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P280 - Wear face protection.  
P281 - Use personal protective equipment as required.  
P301+P312+ P330 - If swallowed: Rinse mouth. Call poison center or doctor if you

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feel unwell.

P304+P340+P312 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call poison center or doctor if you feel unwell.

P308+P313 - If exposed or concerned: Get medical advice or attention.

P314 - Get medical advice or attention if you feel unwell.

P370+P380 - In case of fire: Evacuate area.

P372 - Explosion risk in case of fire.

P373 - DO NOT fight fire when fire reaches explosives.

P391 - Collect spillage.

P401 - Store in accordance with local, regional, national, and international regulations.

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

**2.3. Other Hazards** Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. This article will create shrapnel upon function. Blast hazard/shrapnel from functioning of the product may cause physical harm.

**2.4. Unknown Acute Toxicity (GHS-US)** No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1. Substance** Not applicable

**3.2. Mixture**

Name	Product Identifier	%	Classification (GHS-US)
Lead azide	(CAS No) 13424-46-9	37 - 75	Unst. Expl, H200 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Pentaerythrite tetranitrate	(CAS No) 78-11-5	25 - 63	Unst. Expl, H200 Acute Tox. 4 (Oral), H302
Normal lead styphnate	(CAS No) 15245-44-0	0 - 23	Expl. 1.1, H201 Carc. 1A, H350 Repr. 1A, H360 STOT RE 1, H372 Aquatic Chronic 2, H411
Nitrocellulose	(CAS No) 9004-70-0	0 - 0.3	Flam. Sol. 1, H228

Full text of H-phrases: see section 16

## SECTION 4: FIRST AID MEASURES

**4.1. Description of First Aid Measures**

**First-aid Measures General:** Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

**First-aid Measures After Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center, doctor, or physician if you feel unwell.

**First-aid Measures After Skin Contact:** Wash with plenty of soap and water. Get medical advice or attention if irritation occurs.

**First-aid Measures After Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Obtain medical attention if irritation persists.

**First-aid Measures After Ingestion:** Rinse mouth. Do NOT induce vomiting. Call a poison center, doctor, or physician if you feel unwell.

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

**Symptoms/Injuries:** The product is sealed preventing exposure to the hazardous ingredients inside. When discharged or otherwise exposed, dust, vapors, and/or fumes can result in both acute and chronic overexposure.

**Symptoms/Injuries After Inhalation:** Harmful if inhaled.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause eye irritation.

**Symptoms/Injuries After Ingestion:** Harmful if swallowed.

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**Chronic Symptoms:** May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. May cause cancer.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** For small fire: Use extinguishing media appropriate for surrounding fire. DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Water may be applied through fixed extinguishing system (sprinklers) as long as people need not be present for the system to operate.

**Unsuitable Extinguishing Media:** DO NOT fight fires involving explosives.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Heating may cause an explosion. Under fire conditions, hazardous fumes will be present.

**Explosion Hazard:** Explosive. Explosion risk in case of fire. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

**Reactivity:** Hazardous reactions are unlikely to occur under normal circumstances.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** DO NOT fight fire when fire reaches explosives. Evacuate area.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Remove ignition sources. No naked lights. No smoking. Use special care to avoid static electric charges. Evacuate danger area. Do not allow product to spread into the environment.

#### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Avoid release to the environment. Hazardous waste due to potential risk of explosion. Prevent entry to sewers and public waters.

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Ground equipment electrically. Remove ignition sources.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely. Collect spillage. Use only non-sparking tools.

### 6.4. Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** This product is an explosive and should only be used under the supervision of trained and licensed personnel. Do not expose to heat or ignition sources as this could cause an explosion.

**Precautions for Safe Handling:** Obtain special instructions before use. Take precautionary measures against static discharge. Keep away from sources of ignition - No smoking. Use grounded electrical/mechanical equipment. Use only non-sparking tools. Do not subject to grinding, shock, friction. Use only outdoors or in a well-ventilated area. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume. Wear recommended personal protective equipment.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Store locked up. Keep in fireproof place.

**Incompatible Materials:** Copper, silver, mercury, cadmium, nickel, acids, bases, acetylene, chlorine, oxidants. Heat sources. Avoid ignition sources.

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### 7.3. Specific End Use(s) Defense. For professional use only.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

Lead azide (7439-92-1)		
USA ACGIH	ACGIH BEI (Blood Exposure Index)(ug/L)	200 ug/L
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Normal lead styphate (7439-92-1)		
USA ACGIH	ACGIH BEI (Blood Exposure Index)(ug/L)	200 ug/L
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>

### 8.2. Exposure Controls

#### Appropriate Engineering Controls

: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Provide for an automatic sprinkler system. Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

#### Personal Protective Equipment

: Tweezers. Safety glasses. Protective clothing.



#### Materials for Protective Clothing

: For explosive-handling workers, caps and coveralls for full body (arms and legs) protection are recommended. Cotton coveralls, underwear, socks and conductive shoes are recommended to avoid human static discharge.

#### Hand Protection

: Handle parts with a tweezers.

#### Eye Protection

: Safety glasses should be worn that comply with ANSI Z87.1.

#### Skin and Body Protection

: Non-static creating clothing and conductive shoes should be worn.

#### Respiratory Protection

: Not required for normal handling.

#### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Steel cup, color varies, encases a header which has two lead wires.
Odor	: None
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Solubility	: No data available
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available
Explosive Properties	: Explosive; fire, blast or projection hazard.

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### 9.2. Other Information No additional information available

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions are unlikely to occur under normal circumstances.
- 10.2. Chemical Stability:** May explode in fire. Risk of explosion by shock, friction, fire or other sources of ignition.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Sparks, open flame, shock, heat, electrostatic discharge, impact, impingement, and friction.
- 10.5. Incompatible Materials:** Copper, silver, mercury, cadmium, nickel, acids, bases, acetylene, chlorine, oxidants.
- 10.6. Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides. Lead compounds, lead dust/fume. Aldehydes, ketones.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Toxicological Effects

**Acute Toxicity:** Oral: Harmful if swallowed. Inhalation: Harmful if inhaled.

Lead azide (13424-46-9)	
ATE (Oral)	500.00 mg/kg body weight
ATE (Dust/Mist)	1.50 mg/l/4h
Pentaerythrite tetranitrate (78-11-5)	
LD50 Oral Rat	1660 mg/kg

**Skin Corrosion/Irritation:** Not classified

**Serious Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** May cause cancer.

**Reproductive Toxicity:** May damage fertility or the unborn child.

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs through prolonged or repeated exposure.

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Harmful if inhaled.

**Symptoms/Injuries After Skin Contact:** May cause skin irritation.

**Symptoms/Injuries After Eye Contact:** May cause eye irritation.

**Symptoms/Injuries After Ingestion:** Harmful if swallowed.

**Chronic Symptoms:** May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. May cause cancer.

## SECTION 12: ECOLOGICAL INFORMATION

No additional information available.

## SECTION 13: DISPOSAL CONSIDERATIONS

No additional information available.

## SECTION 14: TRANSPORT INFORMATION

No additional information available.

## SECTION 15: REGULATORY INFORMATION

No additional information available.

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 10/27/2023

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Previous Version: 3.0

Reason for Revision: Updated lead compounds exposure controls.

### GHS Full Text Phrases:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1

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Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Expl. 1.1	Explosive Category 1.1
Expl. 1.4	Explosive Category 1.4
Flam. Sol. 1	Flammable Solids Category 1
Repr. 1A	Reproductive toxicity Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
Unst. Expl	Unstable explosives
H200	Unstable explosives
H201	Explosive; mass explosion hazard
H204	Fire or projection hazard
H228	Flammable solid
H302	Harmful if swallowed
H332	Harmful if inhaled
H350	May cause cancer
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)