

# Safety Data Sheet

Issue Date: 01-Jan-2001

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Version 1

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Cartridge, Power Device

### Other means of identification

**SDS #** AET-001

**UN/ID No** UN0323

### Recommended use of the chemical and restrictions on use

**Recommended Use** Fire extinguisher cartridge.

### Details of the supplier of the safety data sheet

#### **Supplier Address**

Applied Energy Technology Corp.  
2105 S. Hardy Drive, Suite #20  
Tempe, AZ 85282  
Ph: 480-894-1719 Mon-Thurs 7:00 a.m. - 4:30 p.m.

### Emergency Telephone Number

**Emergency Telephone (24 hr)** INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Metal cases approximately  
3/4"Hex x 1 1/4" long

**Physical state** Solid

### Classification

Exposure to products ingredients is unlikely, due to metal casing.

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Reproductive toxicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 2
Explosives	Division 1.4

### Signal Word

**Danger**

### Hazard statements

Harmful if swallowed  
Harmful if inhaled  
May damage fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure  
Fire or projection hazard



**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Use only outdoors or in a well-ventilated area  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
 Ground/bond container and receiving equipment  
 Do not subject to grinding/shock/friction

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth  
 In case of fire: Evacuate area  
 DO NOT fight fire when fire reaches explosives  
 Fight fire with normal precautions from a reasonable distance

**Precautionary Statements - Storage**

Store locked up  
 Store in accordance with local regulations

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other hazards**

Very toxic to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Proprietary Azide	Proprietary	Proprietary
Proprietary Metal	Proprietary	Proprietary
Proprietary Salt	Proprietary	Proprietary

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST AID MEASURES

**First Aid Measures**

<b>General Advice</b>	Provide this SDS to medical personnel for treatment. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
<b>Eye Contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical attention.
<b>Skin Contact</b>	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation develops or persists, seek medical attention.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Get medical attention.
<b>Ingestion</b>	Call a poison center or doctor/physician if you feel unwell. Rinse mouth. If conscious give 2 glasses of water to dilute. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects****Symptoms**

The primary hazards from improper handling and misuse of these components are physical wounds resulting from detonation. Close proximity during detonation may cause damage to eyes, ears, and skin due to loud noise and high energy shrapnel. Post detonation fumes are noxious and can cause irritation.

**Indication of any immediate medical attention and special treatment needed****Notes to Physician**

Treat symptomatically.

<b>5. FIRE-FIGHTING MEASURES</b>
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**Suitable Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Foam.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Fire or projection hazard. Mass detonating from excessive heat (176.6°C/400°F+) will produce shrapnel to approximately 50 ft. In case of fire, evacuate area.

**Hazardous Combustion Products** Post detonation fumes are noxious.

**Protective equipment and precautions for firefighters**

Fight fire with normal precautions from a reasonable distance. DO NOT fight fire when fire reaches explosives. Maintain 50 to 100 foot distance. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

<b>6. ACCIDENTAL RELEASE MEASURES</b>
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**Personal precautions, protective equipment and emergency procedures****Personal Precautions**

Use personal protection recommended in Section 8. Evacuate personnel to safe areas.

**Environmental precautions****Environmental precautions**

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up****Methods for Containment**

Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up**

If components are released from packaging and still intact individually, handle sparingly to repack. If individual components are released from packaging, are individually damaged and explosive material is visible or separating, use extreme caution not to expose to friction, static, or impact. Do not handle. Consult manufacturer in either case.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on Safe Handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Ground/bond container and receiving equipment. Do not subject to grinding/shock/friction. Do NOT remove black rubber shunt plug or other shunting devices until after installation. Do NOT subject to any electronic test equipment. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Store in accordance with local regulations.

**Incompatible Materials**

None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Proprietary Azide	TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> Pb
Proprietary Metal	STEL: 10 mg/m <sup>3</sup> Zr STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr	TWA: 5 mg/m <sup>3</sup> Zr (vacated) TWA: 5 mg/m <sup>3</sup> Zr (vacated) TWA: 5 mg/m <sup>3</sup> Zr (vacated) STEL: 10 mg/m <sup>3</sup> Zr (vacated) STEL: 10 mg/m <sup>3</sup> Zr (vacated)	IDLH: 50 mg/m <sup>3</sup> Zr IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr except Zirconium tetrachloride STEL: 10 mg/m <sup>3</sup> Zr STEL: 10 mg/m <sup>3</sup> Zr

**Appropriate engineering controls**

**Engineering Controls**

Apply technical measures to comply with the occupational exposure limits. Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**

Chemical safety goggles/faceshield. Refer to 29 CFR 1910.133 for eye and face protection regulations.

**Skin and Body Protection**

Use ONLY cotton protective gloves. Wear suitable protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

**Respiratory Protection**

If detonated, or if otherwise necessary, wear a MSHA/NIOSH approved respirator. If necessary, wear a MSHA/NIOSH-approved respirator. Refer to 29 CFR 1910.134 for respiratory protection requirements.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Solid	<b>Odor</b>	Not determined
<b>Appearance</b>	Metal cases approximately 3/4" Hex x 1 1/4" long	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Not determined		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not determined	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	204.4 °C / 400 °F	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limits in Air		
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

### Conditions to Avoid

Keep out of reach of children. Avoid temperatures above 350 +°F. Mechanical shock. Extreme heat, flame, and static discharge.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

If detonated, fumes are noxious.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	Avoid contact with eyes.
<b>Skin Contact</b>	Avoid contact with skin.
<b>Inhalation</b>	Harmful if inhaled.
<b>Ingestion</b>	Harmful if swallowed.

### Information on physical, chemical and toxicological effects

**Symptoms** Please see section 4 of this SDS for symptoms.

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

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Proprietary Azide	A3	Group 2A	Reasonably Anticipated	X

#### Legend

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*A3 - Animal Carcinogen*

*IARC (International Agency for Research on Cancer)*

*Group 2A - Probably Carcinogenic to Humans*

*NTP (National Toxicology Program)*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present*

**Reproductive toxicity** May damage fertility or the unborn child.

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

**ATEmix (oral)** 500.00 mg/kg

**ATEmix (inhalation-dust/mist)** 1.50 mg/L

## 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Very toxic to aquatic life with long lasting effects.

#### Persistence/Degradability

Not determined.

#### Bioaccumulation

Not determined.

#### Mobility

Not determined

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS**

**Waste Treatment Methods**

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**California Hazardous Waste Status**

Chemical Name	California Hazardous Waste Status
Proprietary Azide	Ignitable Reactive Toxic
Proprietary Metal	Ignitable powder
Proprietary Salt	Toxic Ignitable Reactive

**14. TRANSPORT INFORMATION**

**Note** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

**UN/ID No** UN0323  
**Proper Shipping Name** Cartridges, power device  
**Hazard Class** 1.4S

**IATA**

**UN/ID No** UN0323  
**Proper Shipping Name** Cartridges, power device  
**Hazard Class** 1.4S

**IMDG**

**UN/ID No** UN0323  
**Proper Shipping Name** Cartridges, power device  
**Hazard Class** 1.4S  
**Marine Pollutant** Yes

## 15. REGULATORY INFORMATION

### International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Proprietary Azide	X	X	X	Present		Present		X
Proprietary Metal	X	X	X		X	Present	X	X
Proprietary Salt	X	X	X	Present	X	Present	X	X

#### 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

**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

#### **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	CAS No.	Weight-%	SARA 313 - Threshold Values %
Proprietary Azide -		Proprietary	0.1

#### **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
Proprietary Azide		X		

### US State Regulations

#### **California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Proprietary Azide -	Carcinogen

### U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Proprietary Azide	X	X	X
Proprietary Metal	X	X	X
Proprietary Salt	X	X	X



**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special Hazards</b>
	Not determined	Not determined	Not determined	Not determined
<b><u>HMIS</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Physical hazards</b>	<b>Personal Protection</b>
	Not determined	Not determined	Not determined	Not determined

**Issue Date:** 01-Jan-2001  
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**Revision Note:** New format

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**