

Safety Data Sheet

Issue Date: 01-Jan-2001

Revision Date: 13-Feb-2017

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Cartridge, Power Device

Other means of identification

SDS # AET-002

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 Organic Compound | 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**General Advice**

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.

Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical attention.

| | |
|---------------------|--|
| Skin Contact | Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation develops or persists, seek medical attention. |
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Get medical attention. |
| Ingestion | 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 | Harmful if swallowed. Harmful if inhaled. 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. |
|---------------------------|------------------------|

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**Carbon dioxide (CO₂). 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.

6. ACCIDENTAL RELEASE MEASURES**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 ³ Pb | TWA: 50 µg/m ³ Pb | IDLH: 100 mg/m ³ Pb TWA: 0.050 mg/m ³ Pb |
| Proprietary Metal | STEL: 10 mg/m ³ Zr STEL: 10 mg/m ³ Zr TWA: 5 mg/m ³ Zr TWA: 5 mg/m ³ Zr | TWA: 5 mg/m ³ Zr (vacated) TWA: 5 mg/m ³ Zr (vacated) TWA: 5 mg/m ³ Zr (vacated) STEL: 10 mg/m ³ Zr (vacated) STEL: 10 mg/m ³ Zr | IDLH: 50 mg/m ³ Zr IDLH: 25 mg/m ³ Zr TWA: 5 mg/m ³ Zr TWA: 5 mg/m ³ Zr except Zirconium tetrachloride Zr STEL: 10 mg/m ³ Zr STEL: 10 mg/m ³ 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

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

| | |
|---------------------|--------------------------|
| Eye Contact | Avoid contact with eyes. |
| Skin Contact | Avoid contact with skin. |
| Inhalation | Harmful if inhaled. |
| Ingestion | 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 Organic Compound | X | X | X | 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

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

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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