UTC Aerospace Systems
Fire Protection Systems

SAFETY DATA SHEET
Actuating Cartridge, Power Device

1. IDENTIFICATION

Product Name	Actuating Cartridge, Power Device
Part Numbers	Slug designs: 872627-02, 873571-02, 874000-01, 897899-2, and 897899-3
Recommended use of the chemical and restrictions on use	
Identified uses	Fire Extinguisher Actuator
Restrictions on use	Not user serviceable. Do not attempt disassembling.
Company Identification	UTC Aerospace Systems 4200 Airport Drive, NW Wilson, NC 27896
Customer Information Number	(252) 237-7004
Emergency Telephone Number	
3E Company	1-800-451-8346 Site Code: 33067
Issue Date	June 14, 2017
Supersedes Date	March 28, 2017 Rev. D

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Explosives – Division 1.4

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Fire or projection hazard

Precautionary Statements
Prevention
Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Do not subject to grinding/shock/friction.
Wear face protection.
Response
In case of fire: Evacuate area.
Explosion risk in case of fire.
Do NOT fight fire when fire reaches explosives.
Fight fire with normal precautions from a reasonable distance.
Storage
Store in accordance with local regulations.

2. HAZARD IDENTIFICATION

Disposal
Dispose of contents/container in accordance with local regulation.

Other Hazards
None identified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture contained in a sealed device.

Component	CAS Number	Concentration
Lead Azide	13424-46-9	65 - 75%
Zirconium	7440-67-7	10 - 20%
Potassium Perchlorate	7778-74-7	10 - 20%
Fluoropolymer binder	9011-17-0	<2%
Graphite	7782-42-5	<0.5%

Note: Material content is less than 0.5 grams per unit in a hermetically sealed capsule.

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
No specific treatment is required as exposure is unlikely under normal conditions of use.
Skin
No specific treatment is required as exposure is unlikely under normal conditions of use.
Ingestion
No specific treatment is required as exposure is unlikely under normal conditions of use.
Inhalation
No specific treatment is required as exposure is unlikely under normal conditions of use.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may explode in the heat of a fire.

Specific hazards arising from the chemical
Do not fight fires involving explosives. Product may explode. Evacuate the area and allow to burn or fight fire remotely. May release toxic fumes during a fire.

5. FIRE - FIGHTING MEASURES

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
If devices are spilled from their shipping or storage container and are damaged, cordon off the area until the situation has been properly assessed. Wear appropriate protective clothing to shield from accidental detonation.

Environmental Precautions
None

Methods and materials for containment and cleaning up
Recover the devices by hand and inspect in a shielded area before repacking. Dispose of damaged detonators as described in Section 13. Suspect or damaged articles should be labeled and consigned for correct destruction.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Devices should be stored in the packaging supplied until required for use. Follow industry guidelines for handling explosives. Uninstalled actuators should only be handled by personnel trained to handle explosive devices. Static grounding is recommended when handling unshunted devices.

Conditions for safe storage
Keep away from friction, impact, heat, flame, radio transmitters, electric storms and electric currents, including those caused by static electricity. Store in original packaging in dry area at 50 to 85 °F (10 to 30°C). Keep away from other explosives. Do not disassemble detonators as this may cause them to explode.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.
Lead Azide, as Pb
ACGIH: TLV 0.05 mg/m^3 8h TWA.
OSHA: PEL 0.05 mg/m^3 8h TWA.
Zirconium and Compounds as Zr
ACGIH: TLV 5 mg/m^3 8h TWA, 10 mg/m^3 10-min STEL
OSHA: PEL 5 mg/m^3 8h TWA.
Graphite
ACGIH: TLV 2 mg/m^3 8h TWA.
OSHA: PEL 15 mg/m^3 8h TWA, total dust
5 mg/m^3 TWA, respirable fraction

Appropriate engineering controls
Work with device in a shielded area. Static grounding is recommended when handling unshunted devices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures
Respiratory Protection
Not normally required.
Skin Protection
Cotton gloves.
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Cotton clothing and conductive-soled shoes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Solid
Color	N/A
Odor	None
Odor Threshold	Not applicable
pH	Not applicable
Specific Gravity	Not applicable
Boiling Range/Point (°C/F)	Not applicable
Melting Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate (BuAc=1)	Not applicable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Not applicable
VOC (g/l)	Not applicable
VOC (%)	Not applicable
Partition coefficient (n-octanol/water)	Not applicable
Viscosity	Not applicable
Auto-ignition Temperature	480°F
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	No data available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical Stability
Actuators are stable under normal conditions of operation.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

10. STABILITY AND REACTIVITY

Conditions to Avoid
Exposure to low level electric current - impact - heat- static - shock - radio frequency (RF) energy

Incompatible Materials
Corrosive materials - copper tools - materials that can build up an electrostatic charge

Hazardous Decomposition Products
Oxides of carbon – lead compounds – zirconium compounds – potassium compounds

11. TOXICOLOGICAL INFORMATION

The chemicals contained in the actuator are hermetically sealed and pose no hazard under normal conditions of operation and storage. The information below is applicable only if the device ruptures before use.
Acute Toxicity
No relevant studies identified.

Specific Target Organ Toxicity (STOT) – single exposure
No relevant studies identified.

Specific Target Organ Toxicity (STOT) – repeat exposure
Lead Azide: May cause damage to organs through prolonged or repeated exposure. (route of exposure: inhalation)

Serious Eye damage/Irritation
No relevant studies identified.

Skin Corrosion/Irritation
No relevant studies identified.

Respiratory or Skin Sensitization
No relevant studies identified.

Carcinogenicity
Lead Azide: IARC 2A : Probably carcinogenic to humans, NTP: Anticipated Carcinogen

Germ Cell Mutagenicity
No relevant studies identified.

Reproductive Toxicity
Lead Azide: May damage fertility or the unborn child (route of exposure: oral)

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Devices are sealed and present no ecological hazard to the environment.

12. ECOLOGICAL INFORMATION

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
This material should be disposed of by a competent body familiar with explosive materials in accordance with all applicable local and national regulations. Ensure packaging is free of explosive material prior to disposal.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Cartridges, Power Device, (1.4C) UN0276, PGII Cartridges, Power Device, (1.4S) UN0323, PGII (when packaged per 180924) For 874000-01 only Cartridge, Power Device, (1.4S) UN0323, PGII (when specified in government contract and packaged per 404658)
UN Proper Shipping Name	Cartridges, Power Device
UN Class	(1.4C) or (1.4S)
UN Number	UN0276 or UN0323
UN Packaging Group	II
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.

15. REGULATORY INFORMATION

United States TSCA Inventory
All components of this product are in compliance with the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory
All ingredients in this product have been verified for inclusion on the Domestic Substance List (DSL).

SARA Title III Sect. 311/312 Categorization
Pressure Hazard (Explosive)

SARA Title III Sect. 313
This product contains the following chemicals listed in Section 313 at or above de minimis concentrations:
Lead compounds

California Proposition 65
This product contains materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Chemical Abstracts Service Number
ECHA: European Chemicals Agency
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

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Replaces: March 28, 2017 Rev. D
Changes made: Updated transport information

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

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