1SE601; 1SE603; 1SE606A; 1SE607; 1SE608; 1SE609 1SE610; 1SE613; 1SE615

Document Number: EHS-SDS-3004

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 07/01/2024 Rev. Orig

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Substance

Product Name: 1SE601; 1SE603; 1SE606A; 1SE607; 1SE608; 1SE609; 1SE610; 1SE613; 1SE615

1.2. Intended Use of the Product

Cutting mechanism using pyrotechnic-generated energy

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

Company

EaglePicher Technologies, LLC
1215 W C St.
Joplin MO 64801
United States of America
+1 417 623 8000
Website: www.eaglepicher.com
email: inquiry@eaglepicher.com

1.4. Emergency Telephone Number

Emergency Number : For Chemical Emergency Call CHEMTREC day or night
Within USA and Canada: 1.800.424.9300
Outside USA and Canada: 1.703.527.3887 (collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

This article contains one or more explosive substances or mixtures in a sealed case. Under normal handling conditions the user is unable to be exposed to the internal chemical contents of the article. The risk of chemical exposure exists only in cases of mechanical failure of the article case allowing contents to be exposed. Thus, these articles should never be punctured, incinerated, dropped, or crushed.

GHS-US/CA Classification

The explosive classification below only applies to US 29 CFR 1910.1200 (HCS/HazCom 2012). The explosive classification is excluded from Canada Hazardous Products Regulations (HPR, SOR/2015-17), it is regulated under the Canada Explosives Act (R.S.C., 1985, c. E-17)

Explosive Category 1.4	H204

Classification of the Substance or Mixture (for exposure to internal components):

Acute toxicity (oral) Category 4	H302
Acute toxicity (inhalation:dust,mist) Category 4	H332

2.2. Label Elements

GHS-US/CA Labeling

Any labeling elements (pictograms, signal word, hazard, and precautionary statements) related to explosive classifications apply to the OSHA Hazard Communication Standard (HCS, 29 CFR 1910.1200) only and are excluded from Canada's Hazardous Products Regulations (HPR, SOR/2015-17)

Hazard Pictograms (GHS-US/CA) :

GHS01 GHS07

Signal Word (GHS-US/CA) : Warning

Hazard Statements (GHS-US/CA) : H204 - Fire or projection hazard.
H302+H332 - Harmful if swallowed or if inhaled.

Precautionary Statements (GHS-US/CA) : P261 - Avoid dust
P264 - Wash hands, forearms, and other 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.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P330 - Rinse mouth.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P250 - Do not subject to grinding/shock/friction.
P280 - Wear protective gloves, protective clothing, and eye protection.
P370+P380 - In case of fire: Evacuate area.
P372 - Explosion risk in case of fire.
P373 - DO NOT fight fire when fire reaches explosives.
P374 - Fight fire with normal precautions from a reasonable distance.
P401 - Store in accordance with local, regional, national, and international regulations.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Barium styphnate	Barium bis(2,4,6-trinitroresorcinolate) / 1,3-Benzenediol, 2,4,6-trinitro-, barium salt (2:1) / Resorcinol, 2,4,6-trinitro-, barium salt (2:1)	(CAS-No.) 20236-55-9	100	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: For exposure to internal components: Encourage exposed person to cough, spit out, and blow nose to remove dust. Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

Skin Contact: For exposure to internal components: Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: For exposure to internal components: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: For exposure to internal components: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: For exposure to internal components: Harmful if swallowed. Harmful if inhaled. Risk of energetic effects.

Inhalation: For exposure to internal components: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.

Skin Contact: For exposure to internal components: Skin contact with large amounts of dust may cause mechanical irritation.

Eye Contact: For exposure to internal components: Eye contact with dust may cause mechanical irritation.

Ingestion: For exposure to internal components: This material is harmful orally and can cause adverse health effects or death in significant amounts.

Chronic Symptoms: None known.

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

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: 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: Explosive, could cause fire and secondary explosions.

Explosion Hazard: Risk of explosion if heated under confinement.

Reactivity: Fire or projection hazard.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. This product is an explosive with a fire or projection hazard. DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS.

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRE. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Thermal decomposition can lead to release of irritating gases and vapors.

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

Hazardous Combustion Products: Carbon oxides, Nitrogen oxides. Barium oxides. Explosive hydrogen gas.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Evacuate danger area. Remove ignition sources. Keep away from heat, sparks, open flames, hot surfaces. – No smoking. Do not get in eyes, on skin, or on clothing. Do not breathe dust.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Evacuate danger area.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area. 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

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Remove ignition sources. Ventilate area. Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Absorb and contain with inert material. Place contents in suitable container for disposal.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Use only non-sparking tools. Be careful to avoid shock, friction, and contact with grit. Collect product for recovery or disposal. Collect contaminated soil and water, and absorbent for proper disposal. Notify applicable government authority if release is reportable or could adversely affect the environment. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

As devices are unpackaged from their primary packaging they may present greater sensitivity to projection or fire hazards. Retain the primary packaging until use and limit the amount of unpacked devices. When a device is installed or deployed and is later removed from use without initiation, it should be replaced in its primary packaging or identical primary packaging.

Additional Hazards When Processed: Avoid dust production.

Precautions for Safe Handling: For exposure to internal components: Keep away from sources of ignition - No smoking. Do not subject to grinding, shock, friction. Do not get in eyes, on skin, or on clothing. Avoid breathing dust. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Use only outdoors or in a well-ventilated area. Keep shunt on device until ready to install.
Hygiene Measures: This product is an explosive and should only be used under the supervision of trained and licensed personnel. 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. Keep shunt on device until ready to install.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage Conditions: Store in dry protected location.
Incompatible Materials: Strong acids, strong bases, strong oxidizers. Hydrides. Sulfides. Sulfur. Nitrides. Sodium hydroxide. Potassium hydroxide.
Special Rules on Packaging: Keep only in the original container.

7.3. Specific End Use(s)

Cutting mechanism using pyrotechnic-generated energy

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), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

8.2. Exposure Controls

Appropriate Engineering Controls: For exposure to internal components: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed. Product to be handled in a closed system and under strictly controlled conditions. Use explosion-proof equipment. Gas detectors should be used when toxic gases may be released.
Personal Protective Equipment: Gloves. Protective clothing. Protective goggles or glasses. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Wear suitable protective clothing.
Hand Protection: Wear protection against mechanical hazards. For exposure to internal components wear appropriate chemical gloves.
Eye and Face Protection: For exposure to internal components: Chemical goggles or safety glasses.
Skin and Body Protection: Wear suitable protective clothing.
Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.
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	:	Cyindrical, metallic
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	Not applicable
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	:	Above 400° F (204° C)
Decomposition Temperature	:	No data available
Flammability (solid, gas)	:	No data available
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	No data available
Specific Gravity	:	No data available
Solubility	:	No data available
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Explosive Properties	:	Explosives, Division 1.4 - Explosives (with no significant blast hazard)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Fire or projection hazard.

10.2. Chemical Stability:

Risk of explosion if heated under confinement.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Avoid creating or spreading dust. Keep away from open flames, hot surfaces and sources of ignition. Incompatible materials.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Hydrides. Sulfides. Sulfur. Nitrides. Sodium hydroxide. Potassium hydroxide.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides, Nitrogen oxides. Barium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Harmful if inhaled.

LD50 and LC50 Data:

Barium styphnate (20236-55-9)	
ATE US/CA (oral)	500.00 mg/kg body weight
ATE US/CA (dust, mist)	1.50 mg/l/4h

Skin Corrosion/Irritation: Not classified.

Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Reproductive Toxicity: Not classified.

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

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: For exposure to internal components: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.

Symptoms/Injuries After Skin Contact: For exposure to internal components: Skin contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Eye Contact: For exposure to internal components: Eye contact with dust may cause mechanical irritation.

Symptoms/Injuries After Ingestion: For exposure to internal components: This material is harmful orally and can cause adverse health effects or death in significant amounts.

Chronic Symptoms: None known.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Barium styphnate (20236-55-9)	
ATE US/CA (oral)	500.00 mg/kg body weight
ATE US/CA (dust, mist)	1.50 mg/l/4h

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Not classified.

12.2. Persistence and Degradability

Not established.

12.3. Bioaccumulative Potential

Not established.

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Contact a licensed professional waste disposal service capable of handling waste explosives. Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations. Do not dispose of waste into sewer. Do not empty into drains.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

1SE601 (EX2000050089); 1SE603 (EX2003090150); 1SE607 (EX2010040700); 1SE608 (EX2011111402); 1SE609 (EX2010040700); 1SE610 (EX2010040700); 1SE613 (EX2010040700)

1SE615 (EX2019042105) – Not regulated as Class 1

1SE606A (EX2007060130) – Not regulated as Class 1

Proper Shipping Name : RELEASE DEVICES, EXPLOSIVE

Hazard Class : 1.4S

Identification Number : UN0173

Label Codes : 1.4S

14.2. In Accordance with IMDG

Proper Shipping Name : RELEASE DEVICES, EXPLOSIVE

Hazard Class : 1.4S

Identification Number : UN0173

Label Codes : 1.4S

EmS-No. (Fire) : F-B

EmS-No. (Spillage) : S-X

14.3. In Accordance with IATA

Proper Shipping Name : RELEASE DEVICES, EXPLOSIVE

Hazard Class : 1.4S

Identification Number : UN0173

Label Codes : 1.4S

ERG Code (IATA) : 3L

14.4. In Accordance with TDG

Proper Shipping Name : RELEASE DEVICES, EXPLOSIVE
Hazard Class : 1.4S
Identification Number : UN0173
Label Codes : 1.4S
Packing Group : II

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

1SE601; 1SE603; 1SE606A; 1SE607; 1SE608; 1SE609; 1SE610; 1SE613; 1SE615	
SARA Section 311/312 Hazard Classes	Physical hazard - Explosive Health hazard - Acute toxicity (any route of exposure)

15.2. US State Regulations

Neither this product nor its chemical components appear on any US state lists, or its chemical components are not required to be disclosed.

15.3. Canadian Regulations

This product or its components are not listed on the Canadian Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL), or are not required to be disclosed.

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

Date of Preparation or Latest Revision : 07/01/2024

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H204	Explosive Category 1.4
H302	Harmful if swallowed
H332	Harmful if inhaled

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)
AU_WES: Australia WES
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)
EC_RAR: European Commission Renewal Assessment Report
EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports
ECHA_API: European Chemicals Agency API
ECHA_RAC: ECHA Committee for Risk Assessment
EFSA: European Food Safety Authority
EPA: U.S. Environmental Protection Agency
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)
EPA_HPV: High Production Volume Chemicals (U.S. Environmental Protection Agency)
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)
EU_CLH: European Union Harmonised Classification and Labelling Proposal
EU_RAR: European Union Risk Assessment Report
FOOD_JOURN: Food Research Journal (1956)
IARC: The International Agency for Research on Cancer
IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
IUCLID: International Uniform Chemical Information Database
JAPAN_GHS: Japan GHS Basis for Classification Data
JP_J-CHECK: Japan J-Check
KR_NIER: South Korea National Institute of Environmental Research Evaluations
NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
NLM_CIP: National Library of Medicine ChemID plus database
NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
NLM_PUBMED: National Library of Medicine PubMed database
NTP: National Toxicology Program
NZ_CCID: New Zealand Chemical Classification and Information Database
OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
WHO: World Health Organization

DISCLAIMER: This SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this article. The information contained here has been compiled from sources considered by EaglePicher Technologies, LLC to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. EaglePicher Technologies, LLC assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the product.

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