

**SAFETY DATA SHEET**

# FAMETRONIC SSS

**Section 1: Product Identification**

Product Trade Name:	FAMETRONIC SSS
Generic Name by SUCAMEC:	ELECTRIC - ELECTRONIC DETONATOR
Recommended Use and Restrictions:	FAMETRONIC SSS is used in seismic prospecting, where it acts as an initiator of explosive charges at depth, and for this purpose it is provided with a high resistance to hydrostatic pressure.  Its handling temperature range is from 0°C to 60°C.

**Provider Information**

Name:	FAMESA EXPLOSIVOS S.A.C.
Address:	Km 28 Autopista Ancón - Puente Piedra
City / Country:	Lima / Peru
Emergency telephone:	(+51 1) 613-9800
Email address:	famesa@famesa.com.pe
Emergency Telephone Number:	(+51 1) 613-9800 Extension 100
Office hours:	M-F from 08:00 to 17:00 hours

**Section 2: Hazards Identification**
**Substance or Mixture GHS Classification**

Electric detonators for blasting

UN Number: 0456

Class or Division 1.4S

Description	Hazard Identification
Physical Hazards } Explosives 1.4 Health Hazards } Acute Ingestion Toxicity, Cat. 5 } Reproductive toxicity, Cat. 1A Environmental Risks } Short-term hazard (acute) to the aquatic environment, Cat. 2	H204 Fire or projection hazard H303 May be harmful if swallowed. H360 May damage fertility or the unborn child. H401 Toxic to aquatic life.

**Signal Word:** Danger, Caution.

**GHS Label Element**

**Cautionary Advice**
**In terms of prevention**

P203	Be sure to read and follow all safety instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
P234	Keep only in original packaging.
P240	Grounding and equipotential bonding of the vessel and the receiving equipment.
P250	Avoid abrasion, shock and friction.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing and eye protection.

**In the event of interference**

P318	IN CASE OF PROVEN or SUSPECTED EXPOSURE: Get medical advice/attention.
P301 + P317	IF SWALLOWED: Get medical attention.
P370 + P372 + P380 + P373	IN CASE OF FIRE: Risk of explosion. Evacuate area. DO NOT fight fire when fire reaches explosives.

**For storage**

P401	Store according to local regulations.
------	---------------------------------------

**For disposal**

P501	Dispose of contents in accordance with local regulations.
P503	Ask the manufacturer for information on disposal.

**Other hazards**

No information is available.

**Section 3: Composition / Information of components**

Chemical Identity	Common Name	CAS Number	Concentration
Lead Azide	Not Applicable	13424-46-9	<20%
Pentaerythritol Tetranitrate	Penthrite	78-11-5	<40%
Potassium perchlorate	Not Applicable	7778-74-7	<10%
Zirconium	Not Applicable	7440-67-7	<10%
Lead Picrate	Not Applicable	25721-38-4	<10%
Plastic, metallic and other non-hazardous components	Not Applicable	Not Applicable	<60%

**Section 4: First Aid Measures**

**Inhalation:** Move exposed person to a place where he/she can breathe uncontaminated air. Get medical attention.

**Skin Contact:** Wash immediately with soap and water. If irritation, redness or burning sensation exists and persists, seek medical attention.

**Eye Contact:** Wash immediately with plenty of water for at least 15 minutes holding eyelids up. If irritation occurs, repeat rinsing and seek medical attention.

**Ingestion:** Do not induce vomiting. Rinse mouth and give water to drink. Never give liquids to an unconscious person. Seek medical attention immediately.

**Most important symptoms / effects:** No information is available.

**Most acute symptoms / effects:** No information is available.

**Delayed symptoms / effects:** No information is available.

**Immediate indications and special treatment:** No information is available.

**Section 5: Fire-fighting measures**

**Suitable extinguishing media:** Do not fight fire. Evacuate area immediately, prevent access, do not breathe fumes from fire.

**Specific hazards of the chemical:** Heat under confined and/or special conditions may cause violent reaction or explosion. May detonate when subjected to fire or under severe impact. Burning material may explode and produce toxic fumes.

**Special protective equipment and special precautions for fire-fighting equipment:** Evacuate area in all directions 800 m or more. Allow fire to burn out. Do not allow personnel to pass. Clear area.

---

## Section 6: Measures to be taken in case of accidental release

---

**Personal Precautions:** Only trained and authorized personnel must take actions in emergency situations.

**Personal Protective Equipment:** Gloves, safety glasses with side protection, work clothes, safety shoes.

### Emergency Procedures:

- Restrict access to the spill area.
- Remove sources of heat and ignition.
- Do not allow access to unauthorized personnel.
- Minimize the number of people in the risk area.
- All equipment used in handling the spill should be grounded.
- Use non-sparking equipment and tools when handling the material.
- Do not touch or walk over spilled material.

**Environmental precautions:** Take precautions to prevent contamination of streams and drains.

**Methods and materials for isolation and cleaning up:** Spilled FAMETRONIC SSS should be carefully collected and placed in properly identified containers, without the use of metallic objects or any tool that could produce sparks. Place the product in marked containers. Decontaminate the spill area. Dispose of the material under supervision of qualified personnel.

---

## Section 7: Handling and Storage

---

### Precautions for Safe Handling

**Operational and Technical Measures to avoid exposure:** This product should be handled by qualified and authorized personnel in the use of the explosive. Handle with extreme care, bearing in mind that the FAMETRONIC SSS is sensitive under certain conditions of shock, friction, spark and fire. Its handling temperature range is from 0°C to 60°C.

**Other precautions:** Do not expose the FAMETRONIC SSS to temperatures higher than 65°C for any reason, nor attempt to disassemble, section or extract the contents of the product.

### Storage Conditions

**Conditions for Safe Storage:** It shall be stored only with compatible products and electrical conductors will always be kept shorted. The ammunition dump designed for storage shall comply with all the requirements established by current regulation. The warehouse must be a dry, fresh, clean, and ventilated area with electrical connection to the earth. Must be stored in powder magazines at temperatures between 0 °C and 30 °C.

**Incompatible Substances and Mixtures:** Do not store with corrosive, volatile, combustible, acid and base chemical substances, or metallic elements.

---

## Section 8: Exposure control / personal protection

---

### Control parameters

No values are recorded for this specific material; however, exposure limits are described, according to international standards, for some of its components:

Product Name	Permissible exposure limit (OHSA PEL-TWA)	Tolerable limit value (ACGIH TLV-TWA)
Lead Azide	0.05 mg (Pb)/m <sup>3</sup>	0.05 mg (Pb)/m <sup>3</sup>

### Appropriate engineering controls

---

---

Apply engineering measures to comply with occupational exposure limits. Eye drop stations. Ventilation system.

If safe exposure levels could be exceeded in the handling and application of this material, engineering controls such as local exhaust ventilation should be considered. If safe exposure levels are achieved, engineering controls are not required, following a detailed and documented risk assessment using personnel.

### **Personal Protective Equipment (PPE)**

---

**Eye Protection:** Safety glasses fitted to the contour of the face that meet ANSI/ISEA Z87.1-2015 requirement.

**Skin and Body Protection:** Wear suitable clothing according to current regulations, such as cotton uniform, in order to avoid static charge buildup.

**Respiratory Protection:** Not required during handling.

**Thermal Hazards:** Not applicable.

**Hand Protection:** The use of protective gloves made of impermeable material with chemical resistance is recommended. They may be made of nitrile or better, complying with the UNE-EN-420:2004 standard.

---

### **Section 9: Physical and chemical properties**

---

**Physical State:** Cylindrical aluminum capsule closed at one end containing the secondary and primary explosive charge, an electric drop, an electronic circuit and two energy conductors. This entire system is kept hermetically sealed by a plug at the other end.

**Color:** Not applicable.

**Odor:** Odorless.

**Melting Point / Freezing Point:** Not applicable.

**Boiling point or initial boiling point and boiling range:** Not applicable.

**Flammability:** Not applicable.

**Lower and upper explosion limit / flammability limit:** Not applicable.

**Flash Point:** Not applicable.

**Autoignition Temperature:** No information is available.

**Decomposition Temperature:** No information is available.

**pH:** Not applicable.

**Kinematic Viscosity:** Not applicable.

**Solubility:** Insoluble in water.

**Partition coefficient n-octanol/water (logarithmic value):** No information is available.

**Vapor Pressure:** Not applicable.

**Relative density:** Not applicable.

**Vapor relative density (air=1):** Not applicable.

**Particle Characteristics:** Not applicable.

---

### **Section 10: Stability and Reactivity**

---

**Reactivity:** Explosive

**Chemical Stability:** Product is stable at normal recommended environmental conditions of storage and handling. Risk of explosion due to energy, shock, fire or other sources of ignition. Capable of explosive detonation, decomposition or reaction, but requires a strong initiation source or must be heated in confinement.

**Possibility of Hazardous Reactions:** No risk of spontaneous reaction, but a fire may involve a risk of explosion. An adjacent detonation may also involve an explosion hazard.

**Conditions to Avoid:** Avoid fire, impact, friction and electric shocks or static electricity. To avoid stability and reactivity problems, keep the ends of the wires short-circuited and away from any direct heat source (above 65°C).

**Incompatible Materials:** Incompatible with oxidizing agents, acids and alkalis.

**Hazardous Decomposition Products:** In the eventual case of being involved in a fire, the gases generated may include mainly carbon monoxides and nitrogen oxides. The exposure to fire may cause a detonation along with a rain of splinters.

---

## Section 11: Toxicological Information

---

**Acute Toxicity (DL50, CL50):** Lead Azide (500mg/kg body weight, No information).  
 Pentaerythrite tetranitrate (1660 mg/kg, No information).  
 Potassium perchlorate (27675 mg/kg, No information).  
 Zirconium (>5000 mg/kg, No information).

**Corrosion / Irritation:** None under normal handling conditions.

**Serious Eye Damage/Eye Irritation:** No irritant effects are evidenced under normal conditions of handling.

**Respiratory or skin sensitization:** In overexposure, the decomposition products of detonation may be toxic.

**Germ Cell Mutagenicity:** No information is available

**Carcinogenicity:** No information is available.

**Reproductive Toxicity:** No information is available.

**Specific Target Organ Systemic Toxicity – Single Exposure:** No information is available.

**Specific Target Organ Systemic Toxicity – Repeated Exposures:** No information is available.

**Aspiration Hazard:** No information is available.

---

## Section 12: Ecotoxicological Information

---

**Ecotoxicity:** This is an assembled product whose content is not exposed under normal conditions of use. Avoid contact with waterways and soils.

**Persistence and Degradability:** No information is available.

**Bioaccumulative Potential:** No information is available.

**Soil Mobility:** No information is available.

**Other adverse effects:** No information is available.

---

## Section 13: Information regarding the disposal of products

---

**Recommended and approved methods for safe disposal:** All waste must be handled according to national regulations. Small quantities or deteriorated explosives can be destroyed by placing them in an auger containing a good explosive. For large quantities of damaged or deteriorated explosives, please notify Famesa Explosivos S.A.C.




**Recommended and approved methods for disposal of contaminated containers/packaging:** Burn under controlled conditions while strictly following national procedures.

---

## Section 14: Transport Information

---

Mode of transport applied	Road	Sea	Air
National and international regulations	SUCAMEC / Law 28256	IMO / IMDG	IATA / DGR
UN Number	0456	0456	0456
Proper UN Shipping Name	Electric detonators for blasting	Electric detonators for blasting	Electric detonators for blasting
Transport classification	1.4S	1.4S	1.4S

Label			
Packaging group	II	II	II
Environmental hazards	No information is available	No information is available	No information is available
Bulk transport according with IMO instruments	Not Applicable	Not Applicable	Not Applicable

## Section 15: Regulatory Information

### National Regulations

- Regulation on the Control of Explosives for Civil Use – Peru (SUCAMEC)
- Law No. 28256: “Law regulating the Land Transportation of Hazardous Materials and Hazardous Wastes”.

### International Regulations

- Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations, 8th version.
- International Maritime Dangerous Goods Code (IMDG Code), IMO, 2018 edition.
- Dangerous Goods Regulations (DGR), IATA, Issue 62.

## Section 16: Other Information

This safety data sheet has been prepared by professionals from the areas of Industrial Safety, Environment, Quality Control, Research and Development and the Occupational Physician of Famesa Explosivos.

Date of Issue: 03/25/2022

Revision: Annual

### Abbreviations and Acronyms

DL50 – Lethal dose for 50% of the population tested.

CL50 – Lethal concentration for 50% of the population tested.

UN - United Nations Organization.

TWA - Time Weighted Average Concentration.

CAS - Chemical Abstracts Service.

OSHA – Occupational Safety and Health Administration.

ACGIH – American Conference of Governmental Industrial Hygienists.

PEL - Permissible Exposure Limit.

TLV - Threshold Limit Value.

### Disclaimer of Liability

Famesa Explosivos S.A.C., hereinafter Famesa, has prepared this safety data sheet based on our extensive knowledge at the date of issue, on chemical health hazards, material safety and general guidance on how to handle the material safely in the workplace. Since Famesa cannot anticipate or control the conditions of use of the product, each user must, prior to handling, evaluate and control the risks of the product.

If you need clarification and/or further information, please contact FAMESA EXPLOSIVOS S.A.C. through our telephone and/or mail indicated in section 1 of this document.