SAFETY DATA SHEET

DINAMITA (DYNAMITE)

Section 1: Product Identification

Product Trade Name:	FAMESA POWDERED DYNAMITE 45 S; FAMESA POWDERED DYNAMITE; FAMESA SEMIGELATIN DYNAMITE; FAMESA GELATIN DYNAMITE.
Generic Name by SUCAMEC:	DYNAMITE
Recommended Use and Restrictions:	FAMESA DYNAMITE is an explosive manufactured with nitroglycerin and is sensitive to Plain Detonator No. 6, it exhibits high blasting power, and its water resistance depends on the specific type of dynamite. It is used in all types of blasting operations in surface and underground mining, as well as civil works. It has been successfully employed in rocks of medium to hard hardness, delivering effective fragmentation results. The handling temperature range of the FAMESA DYNAMITE is from 0°C up to 40°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

Blasting explosive, Type A

UN Number 0081

Class or Division 1.1D

	Description	Hazard Identification
Physical Hazards	Explosives 1.1	H201 Explosive: mass explosion hazard
Health Hazards	Acute Ingestion Toxicity, Cat. 3	H301 Toxic in case of ingestion
	Acute Dermal Toxicity, Cat. 2	H310 Fatal in case of skin contact
	Acute Inhalation Toxicity, Cat. 2	H330 Fatal if inhaled
	Serious Eye Damage / Eye Irritation.	H319 May cause serious eye irritation
	Specific Target Organ Systemic Toxicity – Repeated Exposures, Cat. 2	H373 May cause damage to organs through prolonged or repeated exposure.
Environmental Risks	Short-term (acute) hazard to the aquatic environment, Acute. 2	H401 Toxic to aquatic life.
	Long-term (chronic) hazard to the aquatic environment, chronic 2	H411 Toxic to aquatic life with long lasting effects.

Signal Word: Hazard.

GHS Label Element

Cautionary Advice

In terms of prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.
P230	Keep humidified.
P234	Keep only in original packaging.
P250	Avoid abrasion, shock and friction.
P260	Do not breathe vapors.
P262	Avoid all contact with eyes, skin, or clothing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
In the event of interference	
P301 + P316	IF SWALLOWED: seek immediate emergency medical attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P319	Seek medical advice if the person is unwell.
P316	Get immediate medical attention.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P361 + P364	Immediately remove all contaminated clothing and wash before reuse.
P305 + P351 + P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337 + P317	If eye irritation persists: Get medical attention.
P370 + P372 + P380 + P373	In case of fire: Risk of explosion. Evacuate area. DO NOT fight fire when fire reaches explosives.
P391	Collect spillage.
For storage	
P401	Store according to local regulations.
P403 + P233	Store in a well-ventilated place. Keep the container hermetically sealed.
P405	Store locked up.
For disposal	
P501	Dispose of contents and container in accordance with local regulations.
P503	Ask the manufacturer or supplier for information on disposal, recovery and recycling.

Other hazards

None.

Section 3: Composition / Information of components

Chemical Identity	Common Name	CAS Number	Concentration
Ammonium Nitrate	Not Applicable	6484-52-2	0 to 90 %

Nitrocellulose	Not Applicable	9004-70-0	0.5 to 5 %
Nitroglycerin	Not Applicable	55-63-0	10 to 30 %
Nitroglycol	Not Applicable	628-96-6	10 to 30 %

Section 4: First Aid Measures

Inhalation: If nitroglycerin vapors are inhaled, move the victim to a clear and ventilated area. If not breathing, provide artificial respiration. Seek medical attention.

Skin Contact: Wash thoroughly with water and soap to prevent absorption of nitroglycerin through the skin.

Eye Contact: Rinse using running water for 15 minutes. If irritation persists, seek medical attention.

Ingestion: In the eventual case that the contents of the product are swallowed, DO NOT INDUCE VOMITING, rinse mouth, drink water, and then seek medical attention. Accidental ingestion causes gastrointestinal disorders.

Most important symptoms / effects: Abdominal pain, nausea, vomiting, motor weakness, anemia.

Most acute symptoms / effects: Hypertension, abdominal pain, nausea, vomiting.

Delayed symptoms / effects: Abdominal cramps, anemia, anxiety, insomnia, motor weakness. Seek medical attention if they occur.

Immediate indications and special treatment: No information is available.

Section 5: Fire-fighting measures

Suitable extinguishing media: If the product is not directly affected by the fire and/or the fire has not reached the product: Extinguish the fire with water or carbon dioxide, avoiding any contact with the product at all costs, using all available means. When possible, move the product away from the burning area.

Specific hazards of the chemical: This product is a high explosive with the risk of mass detonation. DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel immediately from the area to a safe distance. Thermal decomposition may lead to the release of irritating gases and vapors.

Special protective equipment and special precautions for fire-fighting equipment: If the fire has reached the product or is about to reach it, do not attempt to extinguish. Clear the area and evacuate personnel to a safe place. Report the authorities according to the emergency procedures. Only personnel trained in emergency situations must take action.

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

Personal Precautions: Verify fire and explosion risks, take regular safety precautions. Only qualified personnel should perform disposal of material.

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: The product has a kerosene paper cover that protects it from the external environment. Once the interior is exposed, it should not come into contact with water sources, and any material that has come into contact with the exposed product, such as soil, must be disposed of in accordance with current legislation.

Methods and materials for isolation and cleaning up: Collect scattered cartridges by hand: if explosive substance has been spilled, collect it with suitable tools. Never use metallic objects or any tools that may produce sparks. Hands should be free of rings, watches, or bracelets during the operation. Place the product in marked containers and seal them. The collected material should be handled by qualified technical personnel in accordance with current legislation.

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.

Other precautions: Under no circumstances should you attempt to disassemble, cut or remove the product content.

Storage Conditions

Conditions for Safe Storage: FAMESA DYNAMITE should be stored in magazines at temperatures between 0°C and 30°C, located in safe, well ventilated, dry areas, protected from rain and heat. Also, the explosive inventory should be rotated, avoiding the use of new materials before using old ones. And it must be stored according to the current compatibility table of the relevant authority.

Incompatible Substances and Mixtures: Dynamite will be stored only with compatible products, according to local and state regulations.

Do not store with corrosive, volatile, combustible, acid and base chemical substances, or metallic elements.

Section 8: Exposure control / personal protection

Control parameters

NO VALUE IS RECORDED FOR THIS SPECIFIC MATERIAL. However, exposure limits are described, according to international standards, for particulate matter and decomposition products:

Product name: AMMONIUM NITRATE, SODIUM NITRATE.

Dusts not otherwise classified: 8hr TWA = 10 mg/m^3

Nitrogen dioxide: 8hr TWA = 5.6 mg/m^3 (3 ppm), 15 min STEL=9.4 mg/m^3 (5 ppm)

Mineral oils: 8hr TWA = 5 mg/m^3

Appropriate engineering controls

Observe standard precautions when handling chemical products. Do not eat, drink, smoke, or inhale excessively during work. Use respiratory protection equipment.

Immediately change stained or wet clothing, wash hands and/or face before breaks and at the end of work. Take a shower at the end of the work shift. Keep and consume food and beverages only in authorized dining areas.

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: Safety clothing and footwear should be appropriate according to current regulations, e.g. cotton uniform to avoid static charge build-up.

Respiratory Protection: Forced ventilation may be necessary when natural ventilation is limited. Use a combustion gas respirator that complies with ANSI/ASSE Z88.2 – 2015 requirements.

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: Semi-solid, pasty mass in kerosene paper cartridges.

Color: White to light beige.

Odor: Has an odor. Slightly penetrating odor, characteristic of nitro esters.

Melting Point / Freezing Point: Not applicable.

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

Flammability: Flammable product.

Lower and upper explosion limit / flammability limit: No information is available.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Decomposition Temperature: No information is available.

pH: Not applicable.

Kinematic Viscosity: Not applicable.

Solubility: Ammonium nitrate is soluble in water; Nitroglycerin and Nitroglycol are slightly soluble in water.

Partition coefficient n-octanol/water (logarithmic value): Not applicable.

Vapor Pressure: No information is available.

Relative density: 1.08g/cm^3– 1.22 g/cm^3.

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

Particle Characteristics: Not applicable.

Section 10: Stability and Reactivity

Reactivity: May explode if exposed to fire or heat, especially when confined and in large quantities, or if subjected to a detonator.

Chemical Stability: Stable under normal storage conditions. May detonate when subjected to direct flame, a strong impact from a blunt object, especially under certain conditions, such as the degree of confinement and when present in large quantities.

Possibility of Hazardous Reactions: No risk of spontaneous reaction.

Conditions to Avoid: Keep away from any direct heat source. Avoid fire, impact, friction, and sparks.

Incompatible Materials: Corrosive, volatile, combustible, acid and base chemical substances.

Hazardous Decomposition Products: None, provided that recommended handling, transport, storage and usage requirements are met. Eventual decomposition may involve CO, NO_x.

Section 11: Toxicological Information

Acute Toxicity (DL 50, CL 50): Not applicable.

Corrosion / Irritation: None under normal handling conditions. In some cases, prolonged contact may cause mild skin irritation.

Serious Eye Damage/Eye Irritation: May cause mild eye irritation.

Respiratory or Skin Sensitization: Flue gases may cause respiratory sensitization.

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: Toxic to aquatic environments.

Persistence and Degradability: Not applicable.

Bioaccumulative Potential: No information is available.

Soil Mobility: Very low mobility.

Other adverse effects: Long-term negative environmental effects.

Section 13: Information regarding the disposal of products

Recommended and approved methods for safe disposal: Contaminated material can be placed in large-diameter holes and detonated under the supervision of trained personnel. Consult Famesa Explosivos S.A.C. for assistance.

Recommended and approved methods for disposal of contaminated containers/packaging: Burn in open spaces and under controlled conditions with supervision by trained personnel and strict 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	0081	0081	Forbidden
Proper UN Shipping Name	Blasting explosive, Type A	Blasting explosive, Type A	Not Applicable
Transport classification	1.1D	1.1D	Not Applicable
Label			Not Applicable
Packaging group	II	Not Applicable	Not Applicable
Environmental hazards	Avoid contact with soil	Avoid water sources	Not Applicable
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.

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.