

SUPREME ELECTRIC DET/SEISMIC DET

ELECTRIC DETONATORS

SAFETY • QUALITY • RELIABILITY



IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	SUPREME ELECTRIC DET (IED, SDED, LDED)/SEISMIC DET
Packaging:	1.1B
Recommended use of the chemical & restrictions of use:	Initiating System for Explosives Charge
Supplier:	Solar Mining Services (Middelburg) 12 April Street Extension 33 Middelburg Mpumalanga South Africa
Supplier:	Solar Mining Services (Sandton) Building A, Upper Grayston Office Park 150 Linden Road Sandton Johannesburg Telephone number: +27 (0) 11 883 1110 Fax: +27 (0) 86 205 4048 Web: www.solarminingservices.com Email: info@solarminingservices.co.za

HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Code for the Transport of Explosives by Road and Rail;
DANGEROUS GOODS.

Classification of the substance or mixture:

Explosives - Division 1.1

SIGNAL WORD - DANGER

Hazard Statement(s):

H201: Explosive; mass explosion hazard.

Precautionary Statement(s):

Prevention:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240: Ground/bond container and receiving equipment.

P250: Do not subject to grinding/shock/friction/impact/electrical energy from extraneous source (lighting, static electricity, stray currents, galvanic electricity or electromagnetic radiation) or any form of heating.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P370+P380: In case of fire: Evacuate area.

P372: Explosion risk in case of fire.

P373: DO NOT fight fire when fire reaches explosives.

Storage:

P401: Store in accordance with Hazardous Substances (Class 1 to 5) Control Regulations 2001.

Disposal:

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Product Name: SUPREME DET - NONEL (1.1B PACKAGING)

Poisons Schedule(SUSMP):

None allocated.

COMPOSITION/INFORMATION ON INGREDIENTS

Product Description:

Metal tubes (aluminium or copper), closed at one end and capped at the other with plastic closure plug ending in plastic covered electric lead. Contains explosive charges and fuse head.

Component	CAS No.	Proportion	Risk Phrases
Metal & Plastic Components		>60%	
Aluminium Powder (Stabilised)	7429-90-5	<1%	R11, R15
Pentaerythritoltetranitrate	78-11-5	<1%	R3
Lead Azide	13424-46-9	<1%	R3, R20/22, R33, R50/53
Lead Styphnate	15245-44-9	<1%	R61(1), R62(3), R20/22, R33
Tetryl (N-Methyl-N, 2, 4, 6-Tetranitroaniline)	479-45-8	<1%	R23/24/25, R33

FIRST AID MEASURES

Construction of the product normally prevents contact with explosive component, however, in the event of exposure: For advice, contact a Poisons Information Centre or a doctor.

Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Seek medical advice if effects persist.

Skin Contact:

If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

Eye Contact:

If in eyes, wash out immediately with water. In all cases of eye contamination, it is a sensible precaution to seek medical advice.

Ingestion:

Seek immediate medical assistance. Rinse mouth with water. If swallowed, give a glass of water to drink. If vomiting occurs give further water.

Indication of immediate medical attention and special treatment needed:

Treat symptomatically. Detonator assemblies are explosive - handle with care. Explosive material containing lead. Long term exposure to detonation fumes may result in lead poisoning. Shrapnel from detonation may cause burns, wounds and bruises - treat symptomatically.

FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Do not fight fires involving explosives. Coarse water spray.

Hazchem or Emergency Action Code: 1YE

Specific hazards arising from the substance or mixture:

Explosive material. Risk of explosion by shock, friction, fire or other sources of ignition. Avoid all ignition sources. Avoid stray current.

Precautions for fire fighters and special protective equipment:

Explosive. Severe detonation hazard when exposed to heat. In case of a small fire where the actual explosive is not involved, carefully remove explosive to a safe distance. If explosive is burning, fight fire from a protected location. On burning will emit toxic fumes, including those of lead. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contact. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Collect and seal in properly labeled containers. Use a spark-free shovel. In the case of a transport accident, notify the Police, Explosives Inspector and SMS.

HANDLING AND STORAGE

Conditions for safe storage:

Store material in a well ventilated magazine suitably licensed for Class 1.1B explosives. Do not store detonators in an explosives magazine. Protect containers from physical damage. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10.

Precautions for safe handling:

Avoid all ignition sources. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Ensure radio transmitters are not allowed near electric detonators. Detonators are explosive - handle with care. Take precautionary measures against static discharges. Keep out of reach of children. Electric Instantaneous II Detonators WILL initiate if the lead-wires touch the aerial of a radio transmitter (including mobile phones). (1) Detonators are explosive - handle with care. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Take precautionary measures against static discharges. Keep out of reach of children.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

No value assigned for this specific material by the Occupational Health and Safety Act.

However, Exposure Standard(s) for constituent(s):

Lead, inorganic dusts & fumes (as Pb): 8hr TWA = 0.15 mg/m³

Aluminium (metal dust): 8hr TWA = 10 mg/m³

Tetryl: 8hr TWA = 1.5 mg/m³

As published by the National Occupational Health and Safety Commission.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Biological Exposure Indices:

Inorganic lead.

Engineering Measures:

When test firing, ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards.

Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

SMS Personal Protection Guide: - OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.



Containment of charge prevents exposure. Wear protective clothes, gloves and eye protection when handling. Wash hands and exposed skin before meals and after work. DO NOT eat, drink or smoke in lead contaminated areas.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Article, Solid
Colour	Various
Odour	None (odourless)
Solubility	Insoluble in water
Specific Gravity	N Av
Relative Vapour Density (air=1)	N Av
Vapour Pressure (20 °C)	N App
Flash Point (°C)	N Av
% Volatile by Volume	0
Flammability Limits (%)	N Av
Auto ignition Temperature (°C)	N Av
% Volatile by Volume	Nil
Solubility in water (g/L)	N Av
Melting Point/Range	N App
Decomposition Point (°C)	N Av
Sublimation Point (°C)	N App
pH:	N App
Viscosity	N App
Evaporation Rate	N App

STABILITY AND REACTIVITY

Chemical stability:

Explosive material. Avoid ignition sources, static electricity discharge and friction. Stable if stored and handled under recommended conditions.

Possibility of hazardous reactions:

Explosive material. Explosion may result due to shock, friction, fire and other sources of ignition. Explosion creates the potential for shrapnel. Hazardous polymerisation will not occur.

Conditions to avoid:

Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to shock, friction, fire and other sources of ignition. Avoid build-up of static electricity. Avoid exposure to radio transmitters (including mobile phones).

Incompatible materials:

Incompatible with oxidising agents. Incompatible with heat and hot surfaces. Incompatible with combustible materials.

Hazardous decomposition products:

Oxides of carbon. Oxides of nitrogen. Oxides of lead. Lead fume. Metal Oxides.

Hazardous reactions:

Explosive material. Explosion may result due to shock, friction, fire and other sources of ignition. Electric Instantaneous II Detonators WILL initiate if the lead-wires touch the aerial of a radio transmitter (including mobile phones). Explosion creates the potential for shrapnel. Detonation may occur from impact, friction, excessive heating or by electrical energy from an extraneous source (lightning, static electricity, stray currents, galvanic electricity or electromagnetic radiation).

TOXICOLOGICAL INFORMATION

The construction of these articles should prevent any chemical contamination. No adverse health effects expected if the product is handled in accordance with this Material Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion:

No information available.

Eye contact:

May be an eye irritant. However, not a likely route of exposure.

Skin contact:

Contact with contents may result in irritation. Shrapnel from detonation may cause burns and wounds to the skin and eyes.

Inhalation:

Not expected to cause respiratory irritation (closed system). Inhalation of dust may result in respiratory irritation. Initiation can cause the presence of lead fume in air. Lead fume may be irritant to mucous membranes and respiratory tract. Test firing of detonators in poorly ventilated areas can cause presence of lead fume in air. Lead fumes may be irritant to mucous membranes and respiratory tract.

Long Term Effects:

Long term exposure to low concentrations of lead (by any route) may result in blood effects, anaemia, central and peripheral nervous system damage, gastrointestinal disturbances, renal injury, foetotoxicity, developmental deficiencies in neonates and children, and testicular damage including decreased sperm count.

Acute toxicity:

No LD50 data available for the product.

Exposure to explosive charge material unlikely. The main hazard is the possibility of exposure to lead fumes when test firing detonators in a poorly ventilated area. The effects of lead poisoning may not be apparent immediately but significant absorption over a period of time may produce adverse effects as noted earlier due to accumulation of lead in the body.



MATERIAL SAFETY DATA SHEET

ECOLOGICAL INFORMATION

Eco toxicity:

Avoid contaminating waterways. Contains lead compounds which can be harmful to the Environment

DISPOSAL CONSIDERATIONS

Disposal methods:

Refer to Waste Management Authority. Dispose of contents/container in accordance with local/regional/national/international regulations. For small quantities: Place in a blast hole and explode during blasting. Large quantities should be returned to SMS or be disposed of in conjunction with the Land Waste Management Authority. Do not move detonators showing obvious signs of deterioration.

Waste Disposal Method:

Burn under supervision of an expert at an approved explosive burning ground or destroy by detonation in boreholes, in accordance with applicable local, provincial and federal regulations. Call upon the services of an SMS Technical Representative.

Contaminated Packaging:

No information available.

TRANSPORT INFORMATION

Road and Rail Transport:

Classified as Dangerous Goods by the criteria of the Code for the Transport of Explosives by Road and Rail; DANGEROUS GOODS.

UN No 0030

Class-primary 1.1 B Explosive
Proper Shipping Name DETONATOR, ELECTRIC

Hazchem Code E

Marine Transport Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.
UN No: 0360

Class-primary 1.1 B Explosive
Proper Shipping Name DETONATOR, NON ELECTRIC, FOR BLASTING

IMDG EMS Fire F-B

IMDG EMS Spill S-X

Air Transport TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.



REGULATORY INFORMATION

Classification:

Based on available information, not classified as hazardous according to criteria of OHSA; NON-HAZARDOUS SUBSTANCE.

Classification of the substance or mixture:

Explosives - Division 1.1

Risk Phrase(s):

R2: Risk of explosion by shock, friction, fire or other sources of ignition.

Safety Phrase(s):

S2: Keep out of the reach of children.

S16: Keep away from sources of ignition - No smoking.

S33: Take precautionary measures against static discharges.

Poisons Schedule:

None allocated.



MATERIAL SAFETY DATA SHEET

OTHER INFORMATION

This Material Safety Data Sheet has been prepared by SMS.

Reason(s) for Issue:

Revised MSDS for SMS South Africa

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since SMS cannot anticipate or control the conditions under which the product may be handled, each user must, prior to handling, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their SMS representative or SMS at the contact details on page 1.

SMS's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.