

SINDET

MAXAM Australia

Chemwatch: 5164-71

Version No: 2.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 4

Issue Date: 30/01/2015

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Initial Date: **Not Available**

S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	SINDET
Synonyms	LOADED SINDET - PART FOR NON ELECTRIC DETONATORS
Proper shipping name	DETONATORS, NON-ELECTRIC for blasting†
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Explosive object used as a component in the manufacture of the product named Detonator assemblies, non-electric for blasting. Not suitable for direct use in blasting. Use of this product by persons lacking adequate training, experience and supervision may result in injury or death. Obey all Commonwealth, State and Local Laws and Regulations. DANGER - If misused or disposed of improperly material may explode and cause death or injury. DO NOT HANDLE WHEN IN DOUBT.
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Details of the manufacturer/importer

Registered company name	MAXAM Australia
Address	141 Boundary Road Oxley 4074 QLD Australia
Telephone	+61 7 3717 1818
Fax	+61 7 3717 1888
Website	http://www.maxam-corp.com.au
Email	info@maxam-int.com.au

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1800 833 111 (24hrs)
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	
Toxicity	0	
Body Contact	0	
Reactivity	4	
Chronic	0	


0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable
GHS Classification [1]	Explosive Division 1.4

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Legend: 1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements

GHS label elements	
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SIGNAL WORD	WARNING
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Hazard statement(s)

H204	Fire or projection hazard
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Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P240	Ground/bond container and receiving equipment.
P250	Do not subject to grinding/shock/sources of friction.

Precautionary statement(s) Response

P370+P380	In case of fire: Evacuate area.
P372	Explosion risk in case of fire.
P374	Fight fire with normal precautions from a reasonable distance.
P373	DO NOT fight fire when fire reaches explosives.

Precautionary statement(s) Storage

P401	Store according to local regulations for explosives
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
13424-46-9	41	lead azide
1314-41-6	22	lead tetroxide - red lead
7440-21-3	16	silicon
1309-37-1	8	ferric oxide

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. <p>In case of burns:</p>

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	<ul style="list-style-type: none"> ▶ Quickly immerse affected area in cold running water for 10 to 15 minutes. ▶ Bandage lightly with a sterile dressing. Treat for shock if required. ▶ Lay patient down. Keep warm and rested. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary.
Ingestion	Not considered a normal route of entry. The form and packaging of explosive detonators prevents any significant contamination by the charge.

Indication of any immediate medical attention and special treatment needed

Delayed pulmonary oedema may result following exposure to nitrous oxides formed during an explosion or on thermal decomposition of the explosive. Long term exposure to low airborne concentrations of lead from test firing of detonators of this type may result in altered haemoglobin breakdown, kidney damage, anaemia and central and peripheral nervous system damage.

SECTION 5 FIREFIGHTING MEASURES**Extinguishing media**

	<ul style="list-style-type: none"> ▶ DANGER: Deliver media remotely. ▶ Water spray or fog. ▶ Flooding quantities only.
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Special hazards arising from the substrate or mixture

Fire Incompatibility	<ul style="list-style-type: none"> ▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials. ▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.
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Advice for firefighters

Fire Fighting	<p>DANGER: HIGHLY EXPLOSIVE!</p> <ul style="list-style-type: none"> ▶ Evacuate all personnel and move upwind to a safe distance. ▶ Prevent re-entry. ▶ Alert Fire Brigade and tell them the location and nature of the hazard. ▶ Fire fighting should only be undertaken by trained personnel. <p>[In case of a small fire, if actual explosive is not burning, carefully]remove containers from path of fire.[If explosive is burning evacuate area immediately. DO NOT fight fire.</p>
Fire/Explosion Hazard	<p>Div 1.4, Compatibility Group A and B DANGER: SEVERE EXPLOSION HAZARD![Combustible.]Detonation may occur from heavy impact or excessive heating.[Dry material is sensitive to shock, friction and sparks.]Heating may cause expansion or decomposition leading to violent rupture of containers.[Heat affected containers remain hazardous.]May detonate in a mass explosion if confined or mixed with incompatible materials.[Explosives can supply own oxygen for combustion and smothering action of foam or dry chemical may be ineffective.]May emit irritating, poisonous or corrosive fumes.[Combustion or decomposition produces oxides of nitrogen (NOx), carbon monoxide (CO) and carbon dioxide (CO2)]On burning under confined or semi-confined conditions toxic fumes of[lead will be present.</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Minor Spills	<p>WARNING!: EXPLOSIVE.</p> <p>BLAST and/or PROJECTION and/or FIRE HAZARD</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid inhalation of the material and avoid contact with eyes and skin. ▶ Wear impervious gloves and safety glasses.
Major Spills	<p>WARNING!: EXPLOSIVE.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive.
	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

Safe handling	<ul style="list-style-type: none"> ▶ Handle gently. Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this MSDS. ▶ Avoid all personal contact, including inhalation.
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	Explosives should not be abandoned at any location for any reason. Do not handle during electrical storms. Always stay away from area of explosion or disposal sites, behind suitable barriers.
Other information	<ul style="list-style-type: none"> ▶ Store cases in a well ventilated magazine licenced for the appropriate Class, Division and Compatibility Group. ▶ Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis. ▶ Observe manufacturer's storage and handling recommendations contained within this MSDS. Protect against lightning.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods. ▶ Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore on the assignment to a particular division
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials. ▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus. ▶ Dangerous goods of other classes. Remove all ignition sources.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	lead azide	Lead, inorganic dusts & fumes (as Pb)	0.15 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	lead tetroxide - red lead	Lead, inorganic dusts & fumes (as Pb)	0.15 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	silicon	Silicon (a)	10 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	ferric oxide	Iron oxide fume (Fe2O3) (as Fe)	5 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
lead tetroxide - red lead	Lead tetroxide	0.17 mg/m3	130 mg/m3	770 mg/m3
silicon	Silicon	45 mg/m3	100 mg/m3	630 mg/m3
ferric oxide	Iron oxide; (Ferric oxide)	15 mg/m3	360 mg/m3	2200 mg/m3

Ingredient	Original IDLH	Revised IDLH
lead azide	700 mg/m3	100 mg/m3
lead tetroxide - red lead	700 mg/m3	100 mg/m3
silicon	Not Available	Not Available
ferric oxide	N.E. mg/m3 / N.E. ppm	2,500 mg/m3

Exposure controls

Appropriate engineering controls	Product needs to be used by experienced and skilled personnel under the supervision of a qualified Shotfirer.
Personal protection	
Eye and face protection	▶ Generally not applicable.
Skin protection	See Hand protection below

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Hands/feet protection	<ul style="list-style-type: none"> ▶ Cotton gloves ▶ Safety footwear
Body protection	See Other protection below
Other protection	▶ Generally not applicable.
Thermal hazards	Not Available

Recommended material(s)**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

SINDET Not Available

Material	CPI
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* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Not Applicable

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance	A solid outer shell of rigid plastic, inside which are explosive parts. No characteristic odour.		
Physical state	Manufactured	Relative density (Water = 1)	Not Applicable
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	190
pH (as supplied)	Not Applicable	Decomposition temperature	Not Applicable
Melting point / freezing point (°C)	Explosive	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water (g/L)	Not Applicable	pH as a solution(1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
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Chemical stability	Hazardous polymerisation will not occur. Detonation may occur from impact or heat. Avoid all contact with other chemicals. Conditions contributing to instability - heat (confinement), stacking (burning) Explodes at elevated temperatures, friction or on impact, produces shrapnel.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<ul style="list-style-type: none"> ▶ Generally not applicable. Test firing in poorly ventilated areas can cause lead fume exposure.
Ingestion	<ul style="list-style-type: none"> ▶ Generally not applicable. Explosive ingredients are contained wholly within a small tube.
Skin Contact	<ul style="list-style-type: none"> ▶ Generally not applicable. Accidental detonation of explosive devices can cause lacerations, punctures and/or traumatic injury. Severity of the injuries is dependent on the number and proximity of the detonators.
Eye	<ul style="list-style-type: none"> ▶ Generally not applicable. Explosive ingredients are contained wholly within a small tube.
Chronic	Short term exposure by all routes is considered to be practically non-harmful apart from explosive nature of product. Over-exposure to lead fumes from test firing in poorly ventilated areas may result in anaemia, kidney and nervous system damage.

SINDET	TOXICITY	IRRITATION
	Not Available	Not Available
lead azide	TOXICITY	IRRITATION
	Not Available	Not Available
lead tetroxide - red lead	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Not Available
	Inhalation (rat) LC50: >5.05 mg/l4 h ^[1]	
	Oral (rat) LD50: >2000 mg/kg ^[1]	
silicon	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Nil reported
	Oral (rat) LD50: 3160 mg/kgd ^[2]	
ferric oxide	TOXICITY	IRRITATION
	Oral (rat) LD50: >5000 mg/kg ^[1]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's msds unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

LEAD AZIDE	WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. Intraperitoneal (rat) LD? >150 mg/kg Nil reported
SILICON, FERRIC OXIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

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Acute Toxicity	⊘	Carcinogenicity	⊘
Skin Irritation/Corrosion	⊘	Reproductivity	⊘
Serious Eye Damage/Irritation	⊘	STOT - Single Exposure	⊘
Respiratory or Skin sensitisation	⊘	STOT - Repeated Exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

Legend:
 ✓ – Data required to make classification available
 ✗ – Data available but does not fill the criteria for classification
 ⊘ – Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
lead tetroxide - red lead	LOW (BCF = 237)

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Disposal of unexploded or deteriorated explosives can be hazardous. Expert assistance is positively recommended in destroying explosives. Accidents can be prevented by thorough planning and handling in accordance with approved methods. Consult your supervisor, or the nearest Maxam office for assistance.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG)

UN number	0455
Packing group	Not Applicable
UN proper shipping name	DETONATORS, NON-ELECTRIC for blasting†
Environmental hazard	No relevant data
Transport hazard class(es)	Class : 1.4S Subrisk : Not Applicable

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Special precautions for user	Special provisions	347
	Limited quantity	0

Air transport (ICAO-IATA / DGR)

UN number	0455	
Packing group	Not Applicable	
UN proper shipping name	Detonators, non-electric for blasting †	
Environmental hazard	No relevant data	
Transport hazard class(es)	ICAO/IATA Class	1.4S
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	3L
Special precautions for user	Special provisions	A165
	Cargo Only Packing Instructions	131
	Cargo Only Maximum Qty / Pack	100 kg
	Passenger and Cargo Packing Instructions	131
	Passenger and Cargo Maximum Qty / Pack	25 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden
	Passenger and Cargo Limited Maximum Qty / Pack	Forbidden

Sea transport (IMDG-Code / GGVSee)

UN number	0455	
Packing group	Not Applicable	
UN proper shipping name	DETONATORS, NON-ELECTRIC for blasting	
Environmental hazard	Not Applicable	
Transport hazard class(es)	IMDG Class	1.4S
	IMDG Subrisk	Not Applicable
Special precautions for user	EMS Number	F-B , S-X
	Special provisions	347
	Limited Quantities	0

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

lead azide(13424-46-9) is found on the following regulatory lists	"Australia Exposure Standards", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)", "International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft", "Australia Hazardous Substances Information System - Consolidated Lists"
lead tetroxide - red lead(1314-41-6) is found on the following regulatory lists	"Australia Exposure Standards", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)", "Australia Hazardous Substances Information System - Consolidated Lists"
silicon(7440-21-3) is found on the following regulatory lists	"Australia Exposure Standards", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)", "Australia Hazardous Substances Information System - Consolidated Lists"
ferric oxide(1309-37-1) is found on the following regulatory lists	"Australia Exposure Standards", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)", "Australia Hazardous Substances Information System - Consolidated Lists"

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
silicon	152284-21-4, 157383-37-4, 160371-18-6, 17375-03-0, 71536-23-7, 72516-01-9, 72516-02-0, 72516-03-1, 7440-21-3, 90337-93-2

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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