

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **GRENADE, HAND, SMOKE - WHITE**
Synonym(s) *EON: 610-010-B1-05-01 • MUNB • NSN: 1330-66-151-0243 • OBJ ID: B438109*
 A140 - STOCK CODE

1.2 Uses and uses advised against

Use(s) DISTRESS SIGNAL • SIGNALLING FLARE • SMOKE GENERATOR

1.3 Details of the supplier of the safety data sheet

Supplier name **CHEMRING AUSTRALIA PTY LTD**
Address 230 Staceys Rd, Lara, VIC, Australia, 3212
Telephone +61 3 5220 8500
Fax +61 3 5282 3545
Email info@chemring.com.au
Website http://www.chemring.com.au

1.4 Emergency telephone number(s)

Emergency +61 (0)402 130005

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS Classification(s) Explosives: Division 1.4
 Skin Sensitisation: Category 1
 Respiratory Sensitisation: Category 1

2.2 Label elements

Signal word **DANGER**

Pictograms



Hazard statement(s)

H204 Fire or projection hazard.
 H317 May cause an allergic skin reaction.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Prevention statement(s)

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/rough handling.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P285 In case of inadequate ventilation wear respiratory protection.

Response statement(s)

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P304 + P341 IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
 P321 Specific treatment is advised - see first aid instructions.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

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P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
 P363 Wash contaminated clothing before reuse.
 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.

Storage statement(s)
 P401 Store in accordance with relevant site and storage provisions.

Disposal statement(s)
 P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other Hazards
 No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS number	EC number	Content
KAOLIN	1332-58-7	310-194-1	>10%
POTASSIUM CHLORATE	3811-04-9	223-289-7	>10%
BORON	7440-42-8	231-151-2	<10%
MOLYBDENUM TRIOXIDE	1313-27-5	215-204-7	<10%
POTASSIUM NITRATE	7757-79-1	231-818-8	<10%
SILICON	7440-21-3	231-130-8	<10%
LACTOSE	Not Available	Not Available	>10%
METHYLANTHRAQUINONE WHITE DYE	Not Available	Not Available	>10%
DEXTRIN	Not Available	Not Available	<10%
GUM ARABIC DERIVATIVE	Not Available	Not Available	<10%
GUNPOWDER	Not Available	Not Available	<10%
IRON OXIDE(S)	Not Available	Not Available	<10%
ZINC OXIDE	Not Available	Not Available	<10%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Rinse mouth out with water and give plenty of water to drink.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

No information provided.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

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5. FIREFIGHTING MEASURES

5.1 Extinguishing media

DO NOT attempt to extinguish burning explosives. Once product is ignited it cannot be extinguished. Evacuate area and contact emergency personnel.

5.2 Special hazards arising from the substance or mixture

EXPLOSIVE. Product is designed to produce a controlled explosion when activated. May evolve smoke and toxic gases (metal/ carbon/ sulphur/ nitrogen oxides and fumes) when exploded or heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Exposure to heat may result in detonation, however effects are expected to be limited to the package. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Do not attempt to fight fire if other explosives are present. Use waterfog to cool unexploded cartridges. Once the device has ignited the signal will burn until all the composition has been exhausted. It is recommended that a minimum safety evacuation distance of 100 metres be applied if this product is burned in bulk quantities.

5.4 Hazchem code

1YE

1	Coarse Water Spray.
Y	Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.
E	Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Clear area of all unprotected personnel. Contact emergency services where appropriate. CAUTION: Heating, impact or static charge may cause explosion.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

If cartridges are spilt or containers damaged, contain spillage, then collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end use(s)

No information provided.

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8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Substance	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Borates, anhydrous	SWA (AUS)	--	1	--	--
Iron oxide fume (Fe ₂ O ₃) (as Fe)	SWA (AUS)	--	5	--	--
Kaolin (Inspirable dust)	SWA (AUS)	--	10	--	--
Kaolin (Respirable dust)	SWA (AUS)	--	2	--	--
Silicon	SWA (AUS)	--	10	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering Controls Avoid inhalation. Mechanical extraction ventilation is recommended when removal of the atmospheric contaminants is required. Maintain dust / fume levels below the recommended exposure standard.

PPE No PPE has been assigned for this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	SOLID (CARTRIDGE ENCLOSED)
Odour	ODOURLESS
Odour Threshold	NOT AVAILABLE
Flammability	EXPLOSIVE
Flash Point	NOT AVAILABLE
Boiling Point	NOT RELEVANT
Melting Point	NOT AVAILABLE
Evaporation Rate	NOT RELEVANT
pH	NOT RELEVANT
Specific Gravity	NOT AVAILABLE
Solubility (water)	NOT AVAILABLE
Vapour Density	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE
Upper Explosion Limit	NOT AVAILABLE
Lower Explosion Limit	NOT AVAILABLE
Partition Coefficient	NOT AVAILABLE
Autoignition Temperature	NOT AVAILABLE
Decomposition Temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive Properties	Fire or projection hazard
Oxidising Properties	NOT AVAILABLE

9.2 Other information

% Volatiles NOT RELEVANT

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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Contact with combustible materials (wood, paper, oil). Contamination with moisture.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources. Also incompatible with organic solvents.

10.6 Hazardous decomposition products

May evolve smoke and toxic gases (metal/ carbon/ sulphur/ nitrogen oxides and fumes) when exploded or heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Health hazard summary	Irritant. This product is designed for smoke/gas generation. Over exposure to smoke/gas levels may result in harm and irritation of the eyes, nose and throat. Activating near the face may result in injury or blindness. Individuals with pre-existing respiratory disorders (e.g. asthmatics) may be more susceptible to the development of adverse health effects.
Eye	Irritant. Due to product form and nature of use, the potential for exposure is reduced. However, direct contact with contents or fumes may result in irritation, lacrimation and conjunctivitis.
Inhalation	Irritant. Over exposure to contents may result in respiratory irritation. Persons with pre-existing respiratory disorders are more susceptible to developing adverse health effects and should avoid atmospheres contaminated with smoke/fume. Toxic effects may result from inhalation. May cause sensitisation by inhalation.
Skin	Irritant. Product encapsulation minimises skin contact potential, however contact with contents or smoke may cause irritation, pain and redness. May cause sensitisation by skin contact.
Ingestion	Harmful. Ingestion may result in nausea, vomiting, abdominal pain and diarrhoea. Ingestion is considered unlikely due to product form.
Toxicity data	<p>POTASSIUM CHLORATE (3811-04-9)</p> <p>LD50 (Ingestion): 1870 mg/kg (rat)</p> <p>LDLo (Ingestion): 1200 mg/kg (dog)</p> <p>LDLo (Intraperitoneal): 1500 mg/kg (rat)</p> <p>BORON (7440-42-8)</p> <p>LD50 (Ingestion): 650 mg/kg (rat)</p> <p>LD50 (Intraperitoneal): 7 g/kg (rat)</p> <p>MOLYBDENUM TRIOXIDE (1313-27-5)</p> <p>LCLo (Inhalation): > 5840 mg/m³/4 hours (rat)</p> <p>LD50 (Ingestion): 2689 mg/kg (rat)</p> <p>LD50 (Intraperitoneal): 141 mg/kg (mouse)</p> <p>LD50 (Skin): > 2000 mg/kg (rat)</p> <p>LD50 (Subcutaneous): 94 mg/kg (mouse)</p> <p>TCLo (Inhalation): 6 mg/m³/4 years (man)</p> <p>POTASSIUM NITRATE (7757-79-1)</p> <p>LC50 (Inhalation): > 0.527 mg/L/4h (rat)</p> <p>LD50 (Ingestion): 3015 mg/kg (rat)</p>

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LD50 (Skin): > 5000 mg/kg (rat)
 LDLo (Intravenous): 100 mg/kg (cat)
 TDLo (Ingestion): 598 mg/kg (rat - 1-22 days pregnant)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Results of PBT and vPvB assessment

No information provided.

12.6 Other adverse effects

Potassium chlorate is a known biocide which may cause some short term damage if released into waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect and reuse/return to container. Contact the manufacturer/supplier for additional information (if required).
Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	Land Transport (ADG)	Sea Transport (IMDG/IMO)	Air Transport (IATA/ICAO)
14.1 UN number	0197	0197	-
14.2 UN proper shipping name	SIGNALS, SMOKE	SIGNALS, SMOKE	-
14.3 Transport hazard classes			
DG division	1.4G	1.4G	-
Subsidiary risk(s)	None Allocated	-	-
14.4 Packing group	None Allocated	-	-
14.5 Environmental hazards		None Allocated	
14.6 Special precautions for user			
Hazchem Code	1YE		
EMS		F-B, S-X	

15. REGULATORY INFORMATION

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

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the

Product name	GRENADE, HAND, SMOKE - WHITE	
	Uniform Scheduling of Medicines and Poisons (SUSMP).	
Classifications	E - Explosive Xi - Irritant	
Risk phrases	R2: R42/43:	Risk of explosion by shock, friction, fire or other sources of ignition. May cause sensitisation by inhalation and skin contact.
Safety phrases	S1/2: S16: S23: S24/25: S34: S41:	Keep locked up and out of reach of children. Keep away from sources of ignition - No smoking. Do not breathe gas/fumes/vapour/spray (where applicable). Avoid contact with skin and eyes. Avoid shock and friction. In case of fire and/or explosion, do not breathe fumes.

WHS regulatory information

Ingredient name	CAS number	Regulation	Details
POTASSIUM NITRATE	7757-79-1	Restricted Hazardous Chemicals	Nitrates. For wet abrasive blasting.

Inventory listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

15.2 Chemical safety assessment

No information provided.

16. OTHER INFORMATION

Additional information **RESPIRATORS:** In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre

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OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report Status This ChemAlert report has been independently compiled by RMT's scientific department utilising the original Safety Data Sheet ('SDS') for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been authorised or verified by the manufacturer / distributor of the chemical to which it relates.

This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this ChemAlert report, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this ChemAlert report.

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End of Report