1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **RAMSET POWDER LOADS (NZ)**

Synonyms PLCGR22S, PLCGY22S, PLCPU22S, PLCRD22S, PLCYW22S, PLSBL22 - PRODUCT CODES ● PLDRD25X, PLDYW25 - PRODUCT CODES ● PLSRD22, PLSYW22, PLDBL25X, PLDBU25X, PLDGR25, PLDRD25S - PRODUCT CODES

1.2 Uses and uses advised against

Uses CARTRIDGE ● PROPELLANT

22 and 25 calibre construction tool propellant containers for explosive actuated tools (bolt gun). A black powder, encased in a cylindrical brass cartridge, colour coded to indicate strength of charge.

1.3 Details of the supplier of the product

Supplier name **RAMSETREID (A DIVISION OF ITW AUSTRALIA LTD) (RAMSET NZ)**

Address 23-29 Poland Road, Glenfield, Auckland, NEW ZEALAND

Telephone 0800 726 738

Email sales@ramsetreid.co.nz

Website www.ramset.co.nz

1.4 Emergency telephone numbers

Emergency 0800 764 766

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

Physical Hazards

1.4 - Substances and articles that present no significant explosive hazard

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word **WARNING**

Pictograms

Hazard statements

H204 Fire or projection hazard.

Prevention statements

P103 Read label before use.
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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

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 statements

P401	Store in accordance with relevant site and storage provisions.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

The Cartridge is made of a shell which contains hazardous substances. During normal handling of the cartridge, no exposure to these substances should take place. However when the cartridge is fired, a small amount of particles may be released which have the following hazards:
6.1C Toxic by inhalation, in contact with skin and if swallowed.
6.5B May cause an allergic skin reaction.
6.8A May damage fertility or the unborn child.
6.9A Causes damage to organs through prolonged or repeated exposure.
9.1A Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
COPPER	7440-50-8	231-159-6	50 to 65%
ZINC POWDER - ZINC DUST (STABILISED)	7440-66-6	231-175-3	15 to 30%
NITROCELLULOSE	9004-70-0	618-392-2	7 to 12%
4-AMIDINO-N'-NITROSO-1-TETRAZENE-1-CARBOXIMIDO HYDRAZID	109-27-3	203-659-4	1 to 10%
BARIUM NITRATE	10022-31-8	233-020-5	0.5 to 2%
DIBUTYL PHTHALATE	84-74-2	201-557-4	0.5 to 2%
NITROGLYCERIN	55-63-0	200-240-8	0.5 to 2%
TRINITRO-1,3-BENZENEDIOL LEAD SALT	63918-97-8	-	0.5 to 2%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye Exposure is considered unlikely unless casing is damaged. Flush gently with running water. Seek medical attention if irritation develops.

Inhalation Due to product form / nature of use, an inhalation hazard is not anticipated.

Skin Exposure is considered unlikely unless casing is damaged. Gently flush affected areas with water. Seek medical attention if irritation develops.

Ingestion For advice, contact the National Poisons Centre on 0800 764 766 (0800 POISON) or +643 479 7248 or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

First aid facilities Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

DO NOT attempt to extinguish burning explosives. Evacuate area immediately. Notify trained emergency response personnel.

5.2 Special hazards arising from the substance or mixture

EXPLOSIVE. Will explode under specific conditions. May evolve toxic gases (carbon/ nitrogen/ lead/ zirconium/ fluoride/ potassium/ chloride oxides) when heated to decomposition or detonated. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, etc when handling. Eliminate all static discharge and potential for static discharge. CAUTION: Will explode if exposed to heat or with heavy impact.

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.

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 clean, dry magazine licensed for Class 1.4 Explosives. Do not store with other explosives. Store removed from incompatible materials and heat or ignition sources. Ensure the magazine is adequately placarded. Large storage areas should have appropriate ventilation and fire protection systems. To eliminate static charge the devices should be shunted.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Barium, soluble compounds, as Ba	WES [NZ]	--	0.5	--	--
Copper (fume)	WES [NZ]	--	0.2	--	--
Copper, dusts & mists (as Cu)	WES [NZ]	--	1	--	--
Dibutyl phthalate	WES [NZ]	--	5	--	--
Lead, inorganic dusts & fumes, as Pb	WES [NZ]	--	0.1	--	--
Nitroglycerin (NG)	WES [NZ]	0.05	0.46	--	--
Zinc oxide (dust)	WES [NZ]	--	10	--	10
Zinc oxide (fume)	WES [NZ]	--	5	--	10

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. When handlinging exposed explosive, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or cotton gloves.
Body	Wear safety boots and coveralls.
Respiratory	Not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BLACK POWDER (BRASS CARTRIDGE ENCLOSED)
Odour	ODOURLESS
Flammability	EXPLOSIVE
Flash point	NOT AVAILABLE
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT AVAILABLE
Solubility (water)	INSOLUBLE
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	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information provided 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
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

May detonate if heated strongly or exposed to severe shock. Due to enclosed form, reaction with other materials is unlikely, however avoid contact with acids (e.g. nitric acid), metal powders, combustibles and oxidisers. Incompatible with alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen/ lead/ zirconium/ fluoride/ potassium/ chloride oxides) when heated to decomposition or detonated.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Due to the product encapsulation, acute toxicity associated with the contents is not anticipated with normal use. Use safe work practices to avoid dust/fume inhalation after detonation. WARNING: May explode with shock, heat, friction or static charge. Serious damage may result from explosive fragments.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
COPPER	--	> 2000 mg/kg (rat)	--
NITROCELLULOSE	> 5 g/kg (rat)	--	--
BARIUM NITRATE	355 mg/kg (rat)	--	--
NITROGLYCERIN	105 mg/kg (rat)	280 mg/kg (rabbit)	--

Skin Contact with contents/fumes may result in irritation, redness, pain, rash and dermatitis. Due to product form (enclosed), the potential for exposure to contents is not anticipated. Serious damage may result from explosive fragments.

Eye Contact with contents/fumes may cause discomfort, lacrimation and redness. Due to product form (enclosed), the potential for exposure to contents is not anticipated. Serious damage may result from explosive fragments.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity No evidence of mutagenic effects.

Carcinogenicity Lead compounds (inorganic) are classified as probably carcinogenic to humans (IARC Group 2A). Due to product form (enclosed), the potential for exposure to contents is not anticipated.

Reproductive Due to product encapsulation, the potential for exposure to the contents is reduced. Exposure to high levels of lead and its compounds may cause adverse effects on male and female fertility, including adverse effects on sperm quality. Prenatal exposure to lead and its compounds is also associated with adverse effects on neurobehavioral development in children.

STOT - single exposure Not classified as causing organ damage from single exposure. However, serious damage may result from explosive fragments.

STOT - repeated exposure Lead is a cumulative poison, and symptoms are often delayed. Repeated exposure may result in lead poisoning. Symptoms may include blood, kidney and central nervous system/brain damage. Due to product form (enclosed), the potential for exposure to contents is not anticipated.

Aspiration This product does not present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Intact powder load is not considered harmful in the aquatic environment. However, the ingredients, if released may be toxic to aquatic organisms. Data considered: Copper: 0.212mg/L (96hr, Atherinops affinis), 0.44mg/l (48hr, brine shrimp), 0.0127mg/l (72hr, green algae), Zinc: 0.14 mg/l (96h, Oncorhynchus mykiss), 0.07mg/L (48hr, Daphnia magna), 0.03mg/l (96hr, Selenastrum capricornutum)

12.2 Persistence and degradability

Contains ingredients which are not rapidly biodegradable.

12.3 Bioaccumulative potential

Not expected to bioaccumulate.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

This product is not considered toxic to the soil environment. This product is not considered toxic to terrestrial vertebrates.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Small quantities may be disposed by incineration or blasting (by licensed personnel only). For large quantities, contact the manufacturer/supplier for additional information.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA

	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	0323	0323	0323
14.2 Proper Shipping Name	CARTRIDGES, POWER DEVICE	CARTRIDGES, POWER DEVICE	CARTRIDGES, POWER DEVICE
14.3 Transport hazard class	1.4S	1.4S	1.4S
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

No information provided.

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

Approval code HSR100249

Group standard CARTRIDGES, POWER DEVICE

Inventory listings **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.
NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)
All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information

EXPLOSIVES & BLASTING AGENTS: Refer to Local State and Federal legislation that specifically relates to the use of Explosives. Users of products described in this ChemAlert Report are advised to ensure familiarity and compliance with the appropriate legal requirements (e.g. Regulations) prior to the use of this product. Where any further information is required, users may contact their local authority in Explosives and Dangerous Goods.

EXPLOSIONS: Fires involving explosives or explosive mixtures may undergo further explosions and rapid propagation. Police and emergency personnel should be notified immediately. Evacuate individuals to a safe sheltered area at least 800 metres away. If possible remove vehicles and further heat and ignition sources from the area. Do not return to areas until at least one hour after fire and explosions have ceased.

EXPLOSIONS: For further information please refer to Australian Standard 1216, for classification of explosives and Local and Federal Explosive and Dangerous Goods legislation (Act and Regulations).

ENGINEERING CONTROLS: Effective shielding is recommended for personnel when handling these devices. Humidity controls (i.e. higher relative Humidity, > 60%) reduces or prevents static electricity build up.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, 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.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; 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 report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
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)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources 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. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, 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 SDS.

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