SDS ML031 Date of Issue/re-issue**: 3.10.2018**

User declaration:- I have read and understood this Safety Data Sheet

Name:-_____Signature_____Date_____

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Company Name **ECP LTD**

Address: 39 Woodside Ave, Northcote, Auckland , New Zealand

Emergency Tel: NZ 0800154666	**Tel** +64 9 480 4386	**FAX** +64 9 480 4385

Product	**Magnesium POWDER**		**Code**	**ML031**
CAS#	**HSNO#**	**UN #**	**DG Class/es**	**Packing group #**
7439-95-4	HSR001470	1869	4.2C	III

Recomended use: Laboratory Investigations

2. Hazards Identification

2.1 GHS Classification

Spontaneously Combustible Substances: self-heating substances (Category B)
Substances and mixtures, which in contact with water, emit flammable gases (Category A)
NZ:-
4.2C; 4.3C; 6.1E(ALL); 6.1E (O); 9.3C

2.2 GHS Label elements, including precautionary statements

Pictogram  Signal word Danger

Hazard statement(s)
H251 Self-heating; may catch fire.
H260 In contact with water releases flammable gases which may ignite spontaneously.
Precautionary statement(s)
Prevention
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P235 + P410 Keep cool. Protect from sunlight.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response

P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage
P402 + P404 Store in a dry place. Store in a closed container.
P407 Maintain air gap between stacks/ pallets.
P410 Protect from sunlight.
P413 Store bulk masses greater than .? kg/ .? lbs at temperatures not exceeding .? °C/ .? °F.
P420 Store away from other materials.
P422 Store contents under inert gas.
Disposal
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

Vesicant.

Hazard Classification

Australia:
Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

New Zealand:
Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.
Classified as Dangerous Goods for transport, according to the New Zealand Standard NZS 5433:1999 Transport of Dangerous Goods on Land.
HSNO Classification:
4.1.1B - Flammable solid - Low hazard.
4.3CSolids that emit flammable gas when in contact with water: low hazard
6.1E - Substance that is acutely toxic.
9.3C - Substance that is harmful to terrestrial vertebrates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Magnesium	7439-95-4	100 %

4. FIRST AID MEASURES

Inhalation Remove the source of contamination or move the affected person to fresh air. Ensure airwa are clear. Keep at rest. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion Do not induce vomiting. Immediately rinse mouth thoroughly with water. Seek immediate medical attention.

Skin	Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.
Eye	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until the contamination is thoroughly washed off. Seek medical attention.
First Aid Facilities	Eye wash and normal washroom facilities.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use dry chemical extinguisher or sand. Water and carbon dioxide should not be used on magnesium fires.
Hazards from Combustion Products	Under fire conditions this product may emit toxic and/or irritating fumes.
Specific Hazards	Flammable solid; spontaneously flammable in air. May be easily ignited by heat, sparks and flame. Dangerous, when heated, burns violently in air and emits fumes, will react with water or steam to produce hydrogen. It can react violently on contact with oxidizing materials.
Hazchem Code	4[Y]
Precautions in connection with Fire	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) and full protective clothing to prevent exposure to vapours, fumes or products of combustion. If safe to do so, remove containers from path of fire.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures	Wear appropriate personal protective equipment and clothing to minimise exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unnecessary personnel. If possible contain the spill. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent disposal. Dispose of waste according to the Environmental Protection Authority (EPA), federal, state and local regulations. If the spillage enters the waterways contact the EPA, or your local Waste Management Authority.

7. HANDLING AND STORAGE

Precautions for Safe Handling	Do not breathe dust or fumes. Use only in a well ventilated area. Prevent build up of vapours in the working atmosphere. Do not use near welding or other ignition sources. Wear suitable protective clothing, gloves and eye/face protection. Maintain high standards of personal hygiene ie. wash hands after handling this material, and prior to eating, drinking, smoking or using toilet facilities.
Conditions for Safe Storage	Store in a cool, dry, well ventilated area away from sources of ignition, oxidising agents and foodstuffs. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate

fire extinguishers available in and near the storage area. Store and handle in accordance with all applicable local and national regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards	No exposure standards have been established for the mixture by the Australian National Occupational Health & Safety Commission (NOHSC) or the Occupational Safety and Health Service (OSH) of the New Zealand Department of Labour. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels. The exposure limits for magnesium oxide fume are as follows: Australian National Occupational Health And Safety Commission (NOHSC) exposure standards: Magnesium oxide (fume) TWA: 10 mg/m³ New Zealand Workplace Exposure Standards (OSH): Magnesium oxide (fume) TWA: 10 mg/m³ TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.
Engineering Controls	Provide sufficient ventilation to keep airborne levels below as low as possible. Where dust or fumes are generated, a local exhaust ventilation system or fume cupboard is required.
Respiratory Protection	Where sufficient ventilation is not available, avoid breathing dusts and fumes by wearing an AS 1716 approved P1 or P2 particulate filter respirator. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.
Eye Protection	Safety glasses with side shields or chemical goggles should be worn. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.
Hand Protection	Wear laminated film, nitrile or other suitable gloves conforming to AS/NZS 2161: Occupational protective gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Silvery white metal shavings or strips.
Melting Point	651°C
Boiling Point	1107°C
Solubility in Water	Insoluble in cold water (reacts violently). Slightly soluble with decomposition in hot water.
Specific Gravity	1.74
Vapour Pressure	1 mmHg at 621°C
Flash Point	Not available

Flammability	Flammable solid.
Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available

10. STABILITY AND REACTIVITY

Chemical Stability	Slowly oxidizes in moist air. Stable in ordinary air, but strongly attacked by air containing salt spray.
Incompatible Materials	This material is a reducing agent and will form explosive mixtures with most oxidizing substances such as chlorates, nitrates, perchlorates and permanganates. Reacts very slowly with water at ordinary temperatures, less slowly at 100°C, weak alkalis are produced; reacts readily with acids and caustic alkali with liberation of hydrogen; reacts with aqueous solutions of ammonium salts, forming a double salt. Reduces carbon monoxide, carbon dioxide, sulphur dioxide, nitric oxide and nitrous oxide at a red heat. Burns in air, continues to burn in a current of steam. Combines directly with nitrogen, sulphur, the halogens, phosphorus and arsenic. Reacts with methyl alcohol at 200°C giving magnesium methylate. Reacts readily with iron oxide producing a thermit effect.
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information Not available

Inhalation	Inhalation will irritate the respiratory tract. Symptoms may include coughing, shortness of breath, sore throat and runny nose. If sufficient amounts are inhaled and absorbed, symptoms may resemble those of acute ingestion. Inhalation of fumes may cause metal fume fever which has influenza-like symptoms, including fever, chills, perspiration, cough, nasal irritation, chest pain, nausea, headaches, vomiting and muscular weakness. Symptoms may be delayed 1-3 hours after exposure.
Ingestion	Ingestion of large amounts may cause hypotension, ECG changes, and impairment of neuromuscular transmission. Ingestion may cause gastroenteritis (inflammation of the membrane lining of the stomach and intestines) with abdominal pain, nausea, vomiting and diarrhea. Systemic effects may follow and may include ringing of the ears, dizziness, elevated blood pressure, blurred vision and tremors. May cause severe burns to the mouth, throat and stomach.
Skin	Particles embedded in the skin may cause 'chemical gas gangrene' with symptoms of persistent lesions, inflammation and gas bubbles under the skin. Molten magnesium may cause serious skin burns.
Eye	The dust may cause irritation resulting in redness, blurring and tearing. Watching a magnesium fire can cause eye injury.

Chronic Effects Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity Not available

Persistence / Degradability Not available

Mobility Not available

Bioaccumulative Potential Not available

Environment Protection Do not allow product to enter drains, waterways or sewers.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations Disposal of the spilled or waste product must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport Information Australia
This material is classified as Class 4.1 Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods. Class 4.1 Dangerous Goods shall not be packed or loaded in the same vehicle or freight as:
- Class 1, Explosives,
- Class 2.1, Flammable Gases,
- Class 4.2, Spontaneously Combustible Substances,
- Class 5.1, Oxidizing Agents,
- Class 5.2, Organic Peroxides, and
- Class 7, Radioactive Substances

New Zealand
This material is classified as a Class 4.1 - Dangerous Goods according to NZS 5433:1999 Transport of Dangerous Goods on Land.
This material must not be loaded in the same freight container or on the same vehicle with:
- Class 1, Explosives
- Class 5.2, Organic peroxides or
- Class 7, Radioactive materials unless specifically exempted.

It must not be loaded in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:
- Class 2.1, Flammable Gases
- Class 4.2, Spontaneously combustible substances
- Class 5.1, Oxidising substances

Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in segregation devices with:
- Class 4.2, Spontaneously combustible substances

- Class 5.1, Oxidising substances
- Class 5.2, Organic peroxides

U.N. Number	1869
Proper Shipping Name	MAGNESIUM
DG Class	4.1
Hazchem Code	4[Y]
Packaging Method	3.8.4.1
Packing Group	III
EPG Number	4A1
IERG Number	26

15. REGULATORY INFORMATION

Regulatory Information	Australia: Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia. Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
Poisons Schedule	Not Scheduled
National and or International Regulatory Information	New Zealand: Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. ERMA Approval Code: HSR001470; Magnesium pellets, turnings, ribbon, alloys >50%.
Hazard Category	Highly Flammable
AICS (Australia)	All constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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