



Extruded Rifle Powders  
**SAFETY DATA SHEET**  
June 2017

The following smokeless powders are distributed by Hodgdon Powder Company.

H4227® (NO 1.4C)  
H4895® (**EX-2015110873**)  
H4198® (**EX-2013031308**)  
Varget® (**EX-2015110873**)  
H4350® (**EX-2015110873**)  
H50BMG® (**EX-2012010785**)  
H4831® (**EX-2015110873**)  
H4831SC® (**EX-2015110873**)  
H1000® (**EX-2015110873**)  
Retumbo® (**EX-2015110873**)  
H322® (**EX-2016090002**)  
Benchmark® (**EX-2016090003**)

***1.4C EX Approvals in bold parenthesis***

# Propellant AR2209

Thales (Thales Australia Limited)

Chemwatch Hazard Alert Code: 4

Chemwatch: 4693-51

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 07/05/2013

Print Date: 05/03/2015

Initial Date: Not Available

S.GHS.AUS.EN

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

### Product Identifier

|                               |                    |
|-------------------------------|--------------------|
| Product name                  | Propellant AR2209  |
| Synonyms                      | Not Available      |
| Proper shipping name          | POWDER, SMOKELESS† |
| Other means of identification | Not Available      |

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

|                          |   |
|--------------------------|---|
| Relevant identified uses | Propellant for use in centrefire small arms ammunition. |
|--------------------------|---|

### Details of the manufacturer/importer

|                         |  |   |
|-------------------------|--|---|
| Registered company name | Thales (Thales Australia Limited)        | Thales (Thales Australia Limited)       |
| Address                 | Private Bag 1 Mulwala 2647 NSW Australia | Bayly Street Mulwala 2647 NSW Australia |
| Telephone               | Not Available                            | +61 3 5742 2200                         |
| Fax                     | Not Available                            | +61 3 5744 1873                         |
| Website                 | Not Available                            | Not Available                           |
| Email                   | Not Available                            | Not Available                           |

### Emergency telephone number

|                                   |               |                                   |
|-----------------------------------|---------------|-----------------------------------|
| Association / Organisation        | Not Available | Thales Australia Mulwala Facility |
| Emergency telephone numbers       | Not Available | 03 5742 2200                      |
| Other emergency telephone numbers | Not Available | 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 | 3   | 4   |
| Toxicity     | 2   | 3   |
| Body Contact | 2   | 3   |
| Reactivity   | 4   | 4   |
| Chronic      | 3   | 4   |

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

|                        |   |
|------------------------|---|
| Poisons Schedule       | Not Applicable  |
| GHS Classification [1] | Explosive Division 1.3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Germ Cell Mutagen Category 2, Carcinogen Category 1B, Reproductive Toxicity Category 2, Chronic Aquatic Hazard Category 3 |
| 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 |    |
|--------------------|---|

|             |               |
|-------------|---------------|
| SIGNAL WORD | <b>DANGER</b> |
|-------------|---------------|

### Hazard statement(s)

|      |   |
|------|---|
| H203 | Explosive; fire, blast or projection hazard |
| H302 | Harmful if swallowed                        |
| H312 | Harmful in contact with skin                |

Continued...

|      |   |
|------|---|
| H332 | Harmful if inhaled                                  |
| H341 | Suspected of causing genetic defects                |
| H350 | May cause cancer                                    |
| H361 | Suspected of damaging fertility or the unborn child |
| H412 | Harmful to aquatic life with long lasting effects   |

**Precautionary statement(s) Prevention**

|      |  |
|------|--|
| P201 | Obtain special instructions before use.  |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P230 | Keep wetted with phlegmatizer  |
| P271 | Use only outdoors or in a well-ventilated area.  |

**Precautionary statement(s) Response**

|           |  |
|-----------|--|
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
| P370+P380 | In case of fire: Evacuate area.                        |
| P372      | Explosion risk in case of fire.                        |
| P373      | DO NOT fight fire when fire reaches explosives.        |

**Precautionary statement(s) Storage**

|      |   |
|------|---|
| P405 | Store locked up.                                    |
| P401 | Store according to local regulations for explosives |

**Precautionary statement(s) Disposal**

|      |  |
|------|--|
| P501 | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |
|------|--|

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No        | %[weight] | Name                               |
|---------------|-----------|------------------------------------|
| 9004-70-0     | >=85      | <a href="#">nitrocellulose</a>     |
| 121-14-2      | <10       | <a href="#">2,4-dinitrotoluene</a> |
| Not Available | <10       | additives nonhazardous             |

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>   |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>  |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul> |

**Indication of any immediate medical attention and special treatment needed**

Symptoms of vasodilation and reflex tachycardia may present following organic nitrate overdose; most organic nitrates are extensively metabolised by hydrolysis to inorganic nitrites. Organic nitrates and nitrites are readily absorbed through the skin, lungs, mucosa and gastro-intestinal tract.

**Propellant AR2209**

**SECTION 5 FIREFIGHTING MEASURES**

**Extinguishing media**

|  |   |
|--|---|
|  | <p><b>DANGER:</b> Deliver media remotely.</p> <ul style="list-style-type: none"> <li>▶ For minor fires: Flooding quantities only.</li> <li>▶ For large fires: <b>Do not attempt to extinguish.</b></li> </ul> |
|--|---|

**Special hazards arising from the substrate or mixture**

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

**Advice for firefighters**

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <p><b>WARNING: EXPLOSIVE MATERIALS / ARTICLES PRESENT!</b></p> <ul style="list-style-type: none"> <li>▶ Evacuate all personnel and move upwind.</li> <li>▶ Prevent re-entry.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be explosively reactive, detonate and release much heat.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <p><b>WARNING: HIGH EXPLOSION HAZARD!</b></p> <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Will burn with rapidly increasing intensity of fire.</li> <li>▶ Dry material is extremely sensitive to shock, friction, heat and sparks.</li> <li>▶ Avoid metal to metal contact.</li> </ul>                                |

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <p>Clean up all spills immediately.<br/>Avoid contact with skin and eyes.<br/>Wear impervious gloves and safety glasses.<br/>Use spark-free tools when handling<br/>Remove all ignition sources.</p>                           |
| <b>Major Spills</b> | <p>Clear area of personnel.<br/>Restrict access to area.<br/>Alert Fire Brigade and tell them location and nature of hazard.</p> <ul style="list-style-type: none"> <li>▶ May be violently or explosively reactive.</li> </ul> |
|                     | <p>Personal Protective Equipment advice is contained in Section 8 of the MSDS.</p>   |

**SECTION 7 HANDLING AND STORAGE**

**Precautions for safe handling**

|                          |  |
|--------------------------|--|
| <b>Safe handling</b>     | <p>Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this MSDS.<br/>Avoid all personal contact, including inhalation<br/>Wear protective clothing when risk of exposure occurs.</p> <ul style="list-style-type: none"> <li>▶ Avoid smoking, naked lights, heat or ignition sources</li> </ul> <p>Must not be struck by metal implements.</p> |
| <b>Other information</b> | <p>Store in original containers.</p> <ul style="list-style-type: none"> <li>▶ No smoking, naked lights, heat or ignition sources.</li> </ul> <p>Keep dry.</p> <ul style="list-style-type: none"> <li>▶ Keep storage area free of debris, waste and combustibles.</li> </ul>  |

**Conditions for safe storage, including any incompatibilities**

|                                |   |
|--------------------------------|---|
| <b>Suitable container</b>      | <p>Check containers are clearly labelled.</p> <ul style="list-style-type: none"> <li>▶ Packaging as recommended by manufacturer.</li> </ul> <p>Explosives Code Packing Instruction P114(b) or 114(b)<br/>General packaging provisions of 4.1.1, 4.1.3 and special provision 4.1.5 are to be met.<br/>For UN 0160, 0161 - If outer packaging is drum then inner packaging is not required.</p>       |
| <b>Storage incompatibility</b> | <p>Segregate from<br/>strong acids<br/>strong alkalis<br/>and<br/>strong oxidisers</p> <ul style="list-style-type: none"> <li>▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.</li> <li>▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.</li> </ul> |



- X** — Must not be stored together
- 0** — May be stored together with specific preventions
- +** — May be stored together

**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 | nitrocellulose | Fume (thermally generated) (respirable dust)(g) | 2 mg/m3 | Not Available | Not Available | Not Available |

**EMERGENCY LIMITS**

| Ingredient         | Material name                       | TEEL-1    | TEEL-2    | TEEL-3    |
|--------------------|-------------------------------------|-----------|-----------|-----------|
| nitrocellulose     | Pyroxylin; (Cellulose tetranitrate) | 15 mg/m3  | 170 mg/m3 | 990 mg/m3 |
| 2,4-dinitrotoluene | Dinitrotoluene, 2,4-                | 0.6 mg/m3 | 4.9 mg/m3 | 200 mg/m3 |

| Ingredient             | Original IDLH | Revised IDLH  |
|------------------------|---------------|---------------|
| nitrocellulose         | Not Available | Not Available |
| 2,4-dinitrotoluene     | 200 mg/m3     | 50 mg/m3      |
| additives nonhazardous | Not Available | Not Available |

**Exposure controls**

|   |  |
|---|--|
| <b>Appropriate engineering controls</b> | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> |
| <b>Personal protection</b>              |   |
| <b>Eye and face protection</b>          | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>  |
| <b>Skin protection</b>                  | See Hand protection below  |
| <b>Hands/feet protection</b>            | <p>Wear protective gloves, e.g. PVC.</p> <ul style="list-style-type: none"> <li>▶ Protective footwear</li> </ul>   |
| <b>Body protection</b>                  | See Other protection below   |
| <b>Other protection</b>                 | <p>Overalls</p> <ul style="list-style-type: none"> <li>▶ Eyewash unit.</li> </ul> <p>Ensure ready access to a burns first aid kit</p> <ul style="list-style-type: none"> <li>▶ Impervious apron</li> </ul> <p>Ensure there is ready access to a safety shower</p> <ul style="list-style-type: none"> <li>▶ Barrier cream</li> </ul>  |
| <b>Thermal hazards</b>                  | 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:

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| Material   | CPI |
|------------|-----|
| SARANEX-23 | A   |

\* 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**

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | P1<br>Air-line*      | -                    | PAPR-P1                |
| up to 50 x ES                      | Air-line**           | P2                   | PAPR-P2                |
| up to 100 x ES                     | -                    | P3                   | -                      |
|                                    |                      | Air-line*            | -                      |
| 100+ x ES                          | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Continued...

## Information on basic physical and chemical properties

|   |                    |  |                |
|---|--------------------|--|----------------|
| <b>Appearance</b>                                   | Dark grey tubules. |  |                |
| <b>Physical state</b>                               | Divided Solid      | <b>Relative density (Water = 1)</b>            | > 1 approx     |
| <b>Odour</b>  | Not Available      | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available      | <b>Auto-ignition temperature (°C)</b>          | 170            |
| <b>pH (as supplied)</b>                             | Not Applicable     | <b>Decomposition temperature</b>               | Explosive.     |
| <b>Melting point / freezing point (°C)</b>          | Not Available      | <b>Viscosity (cSt)</b>                         | Not Applicable |
| <b>Initial boiling point and boiling range (°C)</b> | Not Available      | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | Not Available      | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Applicable     | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Available      | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Applicable     | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Applicable |
| <b>Lower Explosive Limit (%)</b>                    | Not Applicable     | <b>Volatile Component (%vol)</b>               | Negligible     |
| <b>Vapour pressure (kPa)</b>                        | Negligible         | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water (g/L)</b>                    | Immiscible         | <b>pH as a solution</b>                        | Not Applicable |
| <b>Vapour density (Air = 1)</b>                     | Not Applicable     | <b>VOC g/L</b>                                 | Not Available  |

## SECTION 10 STABILITY AND REACTIVITY

|   |   |
|---|---|
| <b>Reactivity</b>                         | See section 7   |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Product is considered stable under normal handling conditions.</li> <li>▶ Stable under normal storage conditions.</li> <li>▶ Hazardous polymerization will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7   |
| <b>Conditions to avoid</b>                | See section 7   |
| <b>Incompatible materials</b>             | See section 7   |
| <b>Hazardous decomposition products</b>   | See section 5   |

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

|                     |  |
|---------------------|--|
| <b>Inhaled</b>      | Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. The decomposition vapours are harmful if inhaled in large volume.   |
| <b>Ingestion</b>    | Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. |
| <b>Skin Contact</b> | Skin contact with the material may be harmful; systemic effects may result following absorption. The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.                 |
| <b>Eye</b>          | Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.   |
| <b>Chronic</b>      | The principal hazard is related to the potential of fire/explosion and associated physical injury and toxic fume inhalation. Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.  |

|                           |  |                                  |
|---------------------------|--|----------------------------------|
| <b>Propellant AR2209</b>  | <b>TOXICITY</b>                                      | <b>IRRITATION</b>                |
|                           | Not Available  | Not Available                    |
| <b>nitrocellulose</b>     | <b>TOXICITY</b>                                      | <b>IRRITATION</b>                |
|                           | Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>          | Not Available                    |
| <b>2,4-dinitrotoluene</b> | <b>TOXICITY</b>                                      | <b>IRRITATION</b>                |
|                           | dermal (guinea pig) LD50: >1000 mg/kg <sup>[2]</sup> | Skin (rabbit): 500 mg/24h - mild |

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|                |   |
|----------------|---|
|                | Oral (rat) LD50: 268 mg/kgd <sup>[2]</sup>  |
| <b>Legend:</b> | 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 |

|                           |  |
|---------------------------|--|
| <b>NITROCELLULOSE</b>     | No significant acute toxicological data identified in literature search.   |
| <b>2,4-DINITROTOLUENE</b> | for dinitrotoluene (syn: dinitromethylbenzene; DNT)<br>In humans, heavy DNT exposure causes signs of methaemoglobinaemia, which are reversible 2-3 days after removal from exposure. Signs of disturbances in liver function and exposure-dependent nephrotoxic effects directed to the tubular system were additionally found in exposed workers. Single findings in studies without reliable exposure data and/or only small numbers of significantly exposed workers indicating increased incidences of hepatobiliary or urothelial cancer in occupationally DNT exposed workers do not permit a conclusion on the carcinogenicity of DNT in humans. Preliminary observations pointing to an increased risk of ischemic heart disease or to an adverse effect on the human male reproductive system could not be confirmed by further studies<br>In humans dinitrotoluene (DNT, technical grade) is absorbed following dermal and inhalative exposure and is rapidly metabolized and excreted in urine. |

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

**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                 |
|--------------------|-----------------------------|----------------------------------|
| 2,4-dinitrotoluene | HIGH (Half-life = 360 days) | MEDIUM (Half-life = 118.33 days) |

**Bioaccumulative potential**

| Ingredient         | Bioaccumulation   |
|--------------------|-------------------|
| 2,4-dinitrotoluene | HIGH (BCF = 2507) |

**Mobility in soil**

| Ingredient         | Mobility          |
|--------------------|-------------------|
| 2,4-dinitrotoluene | LOW (KOC = 363.8) |


**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>Explosives must not be thrown away, buried, discarded or placed with garbage.</li> <li>Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be notified.</li> <li>This material may be disposed of by burning or detonation but the operation may only be performed under the control of a person trained in the safe destruction of explosives.</li> </ul> |
|-------------------------------------|--|

**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

|                         |   |
|-------------------------|---|
|                         |  |
| <b>Marine Pollutant</b> | NO  |
| <b>HAZCHEM</b>          | Not Applicable  |

**Land transport (ADG)**

|                  |      |
|------------------|------|
| <b>UN number</b> | 0161 |
|------------------|------|

|                                     |   |
|-------------------------------------|---|
| <b>Packing group</b>                | Not Applicable  |
| <b>UN proper shipping name</b>      | POWDER, SMOKELESS†  |
| <b>Environmental hazard</b>         | No relevant data  |
| <b>Transport hazard class(es)</b>   | Class : 1.3C<br>Subrisk : Not Applicable                    |
| <b>Special precautions for user</b> | Special provisions : Not Applicable<br>Limited quantity : 0 |

**Air transport (ICAO-IATA / DGR)**

|                                     |  |
|-------------------------------------|--|
| <b>UN number</b>                    | 0161   |
| <b>Packing group</b>                | Not Applicable   |
| <b>UN proper shipping name</b>      | Powder, smokeless †  |
| <b>Environmental hazard</b>         | No relevant data   |
| <b>Transport hazard class(es)</b>   | ICAO/IATA Class : 1.3C<br>ICAO / IATA Subrisk : Not Applicable<br>ERG Code : 1L  |
| <b>Special precautions for user</b> | Special provisions : Not Applicable<br>Cargo Only Packing Instructions : Forbidden<br>Cargo Only Maximum Qty / Pack : Forbidden<br>Passenger and Cargo Packing Instructions : Forbidden<br>Passenger and Cargo Maximum Qty / Pack : Forbidden<br>Passenger and Cargo Limited Quantity Packing Instructions : Forbidden<br>Passenger and Cargo Limited Maximum Qty / Pack : Forbidden |

**Sea transport (IMDG-Code / GGVSee)**

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | 0161  |
| <b>Packing group</b>                | Not Applicable  |
| <b>UN proper shipping name</b>      | POWDER, SMOKELESS   |
| <b>Environmental hazard</b>         | Not Applicable  |
| <b>Transport hazard class(es)</b>   | IMDG Class : 1.3C<br>IMDG Subrisk : Not Applicable                                      |
| <b>Special precautions for user</b> | EMS Number : F-B , S-Y<br>Special provisions : Not Applicable<br>Limited Quantities : 0 |

**SECTION 15 REGULATORY INFORMATION****Safety, health and environmental regulations / legislation specific for the substance or mixture**

|  |   |
|--|---|
| <b>nitrocellulose(9004-70-0) is found on the following regulatory lists</b>    | "Australia Exposure Standards","Australia Inventory of Chemical Substances (AICS)","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft","Australia Hazardous Substances Information System - Consolidated Lists" |
| <b>2,4-dinitrotoluene(121-14-2) is found on the following regulatory lists</b> | "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**

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](http://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.

**Notes**

When the propellant is packed as in packgaing UN4GY12.5/S/\*\*/AUS/ABBE 30818 it is suitable for air transport as follows:

Air Transport IATA:

ICAO/IATA Class 1.4C ICAO/IATA Subrisk: None



UN/ID Number: 0509 Packing Group:-

Special Provisions: None

Cargo Only

Packing Instructions: 114 Maximum Qty/Pack: 10kg

Passenger and Cargo

Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden

Passenger and Cargo

Limited Quantity

Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden

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