

According to Resolution 801/15 of the Superintendency of Occupational Risks (SRT) and Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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Version: 6.0

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name: **RDX**

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

No further relevant information available.

#### Application of the substance / the mixture:

Raw material for the manufacture of other explosives or pyrotechnic devices.

### 1.3 Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

E-Mail: [apa.comercial@austinpowder.com](mailto:apa.comercial@austinpowder.com)

Information Department:

Austin Powder Argentina S.A.- Luis Maggi 770 - Rafaela (Santa Fe) - Phone: + 54 3492 434851 - Fax: + 54 3492 433905 88

#### 1.4 Emergency telephone number:

+54 3492 424775 – 0800 666 2282 (CIPET)

## SECTION 2: Hazards identification

### 2.1 Classification of the mixture

#### Classification according to GHS (Rev.5):

Hazard class	Code	Hazard Category
Expl. 1.1	H201	Division 1.1
Oral acute toxicity	H301	3
Acute aquatic	H402	2
Danger Systemic specific repeated exposure	H372	1

#### Human and environmental-specific hazards:

Substances and goods that present a risk of mass explosion.

### 2.2 Label elements

The product must be labelled according to the established regulations listed in the "Globally Harmonized System of Classification and Labelling of Chemical Products", according to resolution 801/15 of the Labour Risks Superintendency (SRT).

#### Hazard pictograms:



GHS01



GHS06



GHS08

**Signal word:** Danger.

#### Hazard statements:

H201 Explosive; mass explosion hazard.

H301 Toxic if swallowed.

H372 Causes damage to organs (liver) after prolonged or repeated exposures

H402 Harmful for aquatic organisms.

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Version: 6.0**Precautionary statements:**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P230 Keep humidified with greater than 15% humidity
- P234 Keep only in the original packaging.
- P240 Container and receiving equipment earthing and equipotential link.
- P250 Do not subject to grinding/shock/friction.
- P260 Do not breathe dust/fumes/gas/mist/vapor/spray
- P264 Wash hands carefully after handling
- P270 Do not eat, drink or smoke while handling this product
- P273 Do not spread in the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

**2.3 Other hazards**

Non- applicable

**SECTION 3: Hazards identification****3.1 Substances**

Chemical name:	Cyclotrimethylenetrinitramine.
Synonyms:	RDX, cyclonite, T4, hexahydro-1,3,5-trinitro-1,3,5-triazine, cyclotrimethylenetrinitramine, 1,3,5-triaza-1,3,5-trinitrocyclohexane.
Chemical formula:	C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>
Molecular weight:	222.12 g/mol
CAS number:	121-82-4
Concentration:	> 95 %
Minimum % water:	15%

**3.2 Chemical characterization: Mixtures**

Non- applicable

**SECTION 4: First aid measures****4.1 Description of first aid measures****General information:****After inhalation:**

Remove the person to open air and keep them at rest in a comfortable position for breathing. If impaired breathing, use artificial breathing. Seek medical advice immediately.

**After skin contact:**

Wash with plenty of water and soap for at least 15 minutes. Remove contaminated clothing and footwear. Seek medical advice.

**After eye contact:**

Wash with plenty of water for 15 minutes keeping eyelids open. Seek medical advice.

**After swallowing/ingestion:**

Wash mouth with water. Never offer anything to eat to an unconscious person or if the person has seizures. If the person is conscious, do not induce vomiting. Seek medical care immediately.

**4.2 Most important symptoms and effects, both acute and delayed**

The substance can affect the central nervous system, leading to irritability, drowsiness, seizures and loss of consciousness.

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

Treat symptomatically

**SECTION 5: Firefighting measures**

DO NOT fight fires involving Explosives. There is an extreme risk that explosives involved in a fire may detonate, especially if confined.

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Evacuate the area in all directions for one (1) kilometer or more away for cover if any amount of explosives is involved in a fire. Evacuation is recommended if the initial (incipient) fire, not involving explosives, becomes intense.

**5.1 Extinguishing media****Suitable extinguishing agents:**

Suitable extinguishing media: do not fight fire. Evacuate personnel immediately. Let the fire extinguish by itself

**5.2 Special hazards arising from the substance or mixture**

In case of fire, it can produce fumes or toxic and irritating gases.

It can explode and release fragments or bigger pieces if fire reaches the charge

**5.3 Advice for firefighters****Protective equipment:**

Do not extinguish fires. Use positive pressure self-contained breathing equipment. Firefighter equipment will provide only limited protection.

**Additional information:**

Tire or vehicle fire: use plenty of water and flood the fire. If there is no water available, use CO<sub>2</sub>, dry chemical powder or mud. If the fire is on the charge, do not fight it. Evacuate immediately.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate the area and isolate at least 500 meters. Use breathing apparatus in the event of exposure to dusts/fumes/aerosols. Ventilate closed spaces before entering. Avoid all sources of heat, flames, electrostatic discharge. No smoking. Avoid all kinds of shocks and frictions.

**6.2 Environmental precautions**

Do not spill in culverts, gutters or drainages.

**6.3 Methods and material for containment and cleaning up**

Pick up and place spilled material in suitable cardboard or plastic containers for immediate disposal. Do not smoke or initiate fire near the spill area. All the equipment used during the handling of the product must be electrically grounded. Use appropriate personal protective equipment.

**6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Technical measures: Use proper protective equipment.

Precautions: Protect containers from physical damage.

Recommendations on safe handling: Avoid contact with incompatible materials.

Avoid contact with eyes and skin. Avoid inhalation of vapor or mist. Take steps to prevent a build-up of electrostatic discharge. Keep away from all flames, hot surfaces and sources of ignition. It is forbidden to eat, drink or smoke in work areas

**7.2 Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:**

Store in closed original containers until use, at room temperature and in a dry and well-ventilated place. Keep away from heat, sources of ignition and open flames.

**Information about storage in one common storage facility:**

Technical measures: the substance should be kept wet. Fire-proof. Store away from incompatible materials and substances.

Storage conditions: Do not expose to sunlight. Store in an area without access to drains or sewers.

Incompatible products: Strong alkali or acids.

Packaging materials: Cardboard boxes and polyethylene bags

**Further information about storage conditions:**

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No data available

**7.3 Specific end use(s)**

No further relevant information available.

**SECTION 8: Exposure controls/personal protection**
**Additional information about design of technical systems:**
**8.1 Control parameters**
**Components with limit values that require monitoring at the workplace:**
Exposure limit values for pure products, according to the local legislation:

Chemical name	N° CAS	CMP	CMP-CPT CMP-C	Critical effects	Notation
Cyclonite	121-82-4	0.5 mg/m <sup>3</sup>	-	Irritation, CNS, liver, blood	A4, d.r.

CMP: Maximum permissible time-weighted concentration

CMP - CPT: Maximum concentration allowable for short periods of time

CMP-C: Maximum permissible concentration - Maximum value

A4: Not classifiable as carcinogenic in humans: agents of concern may be carcinogenic in humans but cannot be assessed conclusively due to lack of data.

d.r.: Dermal route. Risk of skin absorption.

According to Resolution 295/2003, of the Ministry of Labor, Employment and Social Security.

**Additional information:** no further information

**8.2 Exposure controls**
**Personal protective equipment:**
**General protective and hygienic measures:**

Reduce the number of individuals at the work area to the minimum. Authorized personnel only

**Breathing equipment:**

Use breathing protection.

**Protection of hands:**

Use gloves of appropriate material

**Material of gloves:**

Neoprene, natural rubber

**Eye protection:**

Use safety glasses.

**Body protection:**

Wear waterproof clothing, antistatic protective clothing.

**SECTION 9: Physical and chemical properties**
**9.1 Information on basic physical and chemical properties**
**General Information**
**Appearance:**

<b>Form:</b>	Solid
<b>Color:</b>	Crystal white or brown
<b>Odor:</b>	Odourless

**pH-value:** Not available.

**Change in condition**
**Boiling point/Boiling range:** 200°C

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· <b>Flash point:</b>	229°C
· <b>Flammability (solid, gaseous):</b>	Not available
· <b>Ignition temperature:</b>	Not available
· <b>Decomposition temperature:</b>	234°C
· <b>Deflagration point:</b>	287°C
· <b>Self igniting:</b>	Not available.
· <b>Danger of explosion:</b>	Danger of explosion due to impact, friction, fire and other sources of ignition. The heat can cause an explosion.
· <b>Vapor pressure:</b>	Not applicable.
· <b>Density at 20 °C:</b>	0.85 – 1.00 g/cm <sup>3</sup>
· <b>Solubility in / Miscibility with Water:</b>	38.4 - 38.9 mg/L; 60 mg/L
· <b>Solvent content:</b> <b>Organic solvents:</b>	
· <b>Solids content:</b>	
· <b>9.2 Other information</b>	No further relevant information available.

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Avoid contact with strong oxidizers and acids

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Explosive when mixed with oxidizing substances.

**10.4. Conditions to be avoided**

Sandy impurities (highly increase sensitivity to detonation). Avoid fire, shock, friction or electrical discharge

**10.5 Incompatible materials**

Alkalis, strong acids.

**10.6 Hazardous decomposition products**

Gaseous nitrogen oxides and carbon oxides in case of fire

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity:**

Oral DL50 rats: 119 mg/kg

Dermal DL50 rabbits: No data available

Inhalation CL50 rats: No data available

**Primary irritant effect:****on the skin:** Non-irritating**on the eye:** Non-irritating**Sensitization:** No sensitizing effects known.**Additional toxicological information:**

Causes damage to organs after prolonged or repeated exposures.

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It does not present significant alterations in reproduction.

**Symptoms related to the physical, chemical and toxicological characteristics:**

The substance can affect the central nervous system, leading to irritability, drowsiness, seizures and loss of consciousness. Prolonged or repeated skin contact may cause dermatitis.

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:**

Toxicity for fish: CL50 (Lepomis macrochirus) 96 hs: 3.6 mg/L  
CL50 (Salmo gairdneri) 96 hs: 3.6 – 13 mg/L

Toxicity for algae: CE50 (Selenastrum capricornutum) 96 hs: > 3.2-10 mg/L

**12.2. Persistence and degradability:**

No data available.

**12.3 Bio-accumulative potential**

Not available.

**12.4 Mobility in soil**

Not available.

**Ecotoxic effects:**

**Type of test Effective concentration Method Assessment:**

**Additional ecological information:**

Not available

**General notes:****12.5 Other adverse effects**

Toxic for aquatic organisms.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation:**

Dispose material according to local or state regulations, under the direct supervision of qualified personnel. Call Austin Powder for recommendations and assistance. This product can be hazardous under certain conditions and it must be picked, tagged and disposed immediately

**Uncleaned packaging:**

Recommendations: Incineration.

**SECTION 14: Transport information**

· 14.1 UN-Number	
· ADR, IMDG , IATA	UN 0072
· 14.2 UN proper shipping name	
· ADR	RDX WETTED
· MERCOSUR	RDX WETTED
· IMDG:	RDX WETTED
· IATA	Prohibited

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· 14.3 Transport hazard class(es)	
· ADR, IMDG	
	
· Class	1.1 D
· Label	1
· IATA	
· Class	1.1 D (Forbidden)
· 14.4 Packing group	
· ADR, IMDG	Non-applicable
· 14.5 Environmental hazards	
· Marine pollutant:	Yes
· 14.6 Special precautions for user	
	Warning: Do not transport with incompatible materials. Do not use flammable materials for stowage of packages. Do not transport with live animals.
· EMS Number:	F-B, S-X
· Danger code (Kemler)	Non-applicable
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
	Not listed.
· Transport/Additional information:	
· ADR	
· Tunnel restriction code	B1000C
· IATA	
· Remarks:	Air transport ICAO-IATA/DGR (Forbidden).

## SECTION 15: Regulatory information

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

#### National regulations

Law 19587 Regulatory decree 351/79 and Decree 295/2003

Law 20429 and decree 302/83

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#### Water hazard class:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

Liability about information is not warranted although information is given to our best knowledge

#### Relevant phrases:

H201 Explosive; mass explosion hazard.

H301 Toxic if swallowed.

H372 Causes damage to organs (liver) after prolonged or repeated exposures

H402 Harmful for aquatic organisms.



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### Recommended restriction of use

Handling of explosives is permitted only to persons with the appropriate permission.

### Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

Expl. 1.1: Explosives, Division 1.1

Ox. Sol. 1: Oxidizing Solids, Hazard Category 1

Ox. Sol. 2: Oxidizing Solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Asp. Tox. 1: Aspiration hazard, Hazard Category 1