

Trade name: **RDX**Review: 01.11.2016
Printing date: 1/15/2019**1. Product identification****1.1. Product name**

Hexógeno/RDX

1.2. Recommended uses of the product

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

1.3. Safety sheet supplier's data

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

1.4. Emergency phone numbers**+54 3492 424775****2. Hazard identification****2.1. Classification of the substance****Classification according to SGA - 5th Edition**

Physical hazards

Explosives - Division 1.1 - Danger

Health hazards

Oral acute toxicity - Category 3 - Toxicity

Danger Systemic specific repeated exposure - Category 1 - Danger

Hazards for the environment

Acute aquatic - Category 2

Human and environmental-specific hazards:

Substances and goods that present a risk of mass explosion.

2.2. Label elements:**Labelling according to EU standards:****Warning:**

Danger

Indications of danger:

H201

Explosive; mass explosion hazard.

H301

Toxic if swallowed.

H372

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

H401

Toxic for aquatic organisms.

Caution advice:

P210

Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. 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

Avoid abrasion/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

Use gloves/protective clothing/eye and face protection.

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Not applicable.**3. Composition/information on ingredients****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: $C_3H_6N_6O_6$
Molecular weight: 222.12 g/mol
CAS number: 121-82-4
Concentration: > 95 %

3.2. Mixtures

Not applicable.

4. First aid**4.1. Description of necessary first aid**

- 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.
- Skin contact:**
Wash with plenty of water and soap for at least 15 minutes. Remove contaminated clothing and footwear. Seek medical advice.
- Eye contact:**
Wash with plenty of water for 15 minutes keeping eyelids open. Seek medical advice.
- 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 immediate medical care and special treatment needed:

Treat symptomatically.

5. Fire fighting measures**5.1. Suitable extinguishing media**

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

5.2. Substance or mixture specific hazards

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. Special procedures to be taken by firefighting teams

- Protective equipment**

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Do not fight 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 CO₂, dry chemical powder or mud. If the fire is on the charge, do not fight it. Evacuate immediately.

6. Procedures in case of spills

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 materials for containment and cleaning of dumping

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.

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

- **Requirements regarding warehouses and containers:**

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 a single warehouse:**

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.

- **Recommended storage temperature**

No data available.

8. Exposure controls/personal protection

8.1. Control parameters

Exposure limit values for pure products, according to the local legislation:

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

8.2. Appropriate technical controls

- **Protective and hygiene measures:**
Reduce the number of individuals at the work area to the minimum. Authorized personnel only.

8.3. Individual protection measures

- **Protective and hygiene measures**
Reduce the number of individuals at the risk area to the minimum.
- **Breathing protection**
Use breathing protection.
- **Protection for 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.

9. Physical and chemical properties

• Appearance	
Shape:	Solid
Color:	Crystal white or brown
• Odor:	Odorless
• Change of state	
Melting point/melting range	200°C
• Flash point:	229°C
• Ignition temperature:	Not available
• Decomposition temperature:	234°C
• Deflagration point:	Not available
• Autoflammability:	Not available
• Danger of explosion:	Not available
• Density:	0.85 – 1.00 g/cm ³
Solubility in water at 20°C:	38.4 - 38.9 mg/L; 60 mg/L

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

Avoid contact with strong oxidizers and acids.

Trade name: **RDX**Review: 01.11.2016
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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

Strong alkali or acids.

10.6. Hazardous decomposition products

Gaseous nitrogen oxides and carbon oxides in case of fire.

11. Toxicological information• **Acute toxicity:**

Oral DL ₅₀ rats:	119 mg/kg
Dermal DL ₅₀ rabbits:	No data available
Inhalation CL ₅₀ rats:	No data available

• **Primary irritant effects:**On the skin: Non-irritant.
On the eyes: Non-irritant.• **Sensitization:**

Non-sensitizing.

• **Additional toxicological information:**Causes damage to organs after prolonged or repeated exposures.
It does not present significant alterations in reproduction.• **Information about possible routes of exposure**

The substance can be absorbed in dangerous quantities by inhalation and by ingestion.

• **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.

12. Ecotoxicological information**12.1. Toxicity**• **Aquatic toxicity:**

Toxicity for fish:	CL ₅₀ (Lepomis macrochirus) 96 hs: 3.6 mg/L CL ₅₀ (Salmo gairdneri) 96 hs: 3.6 – 13 mg/L
Toxicity for algae:	CE ₅₀ (Selenastrum capricornutum) 96 hs: > 3.2-10 mg/L

12.2. Persistence and degradability:

No data available.

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No data available.

12.4. Mobility in soil:

No data available.

12.5. Results of PBT and vPvB assessment:

No data available.

12.6. Other adverse effects:

Toxic for aquatic organisms.

13. Disposal considerations**13.1. Methods of waste treatment.**• **Recommendations:**

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.

14. Information relating to transport**14.1. UN number**

• ADR, IMDG, IATA:

0072

14.2. UN shipping name

• ADR:

HUMIDIFIED RDX

• MERCOSUR

RDX MOISTENED

• IMDG:

HUMIDIFIED RDX

• IATA:

HUMIDIFIED RDX

14.3. Transport hazard class• **ADR:**

Class:

1.1 D

Tunnel restriction code:

1 (B1000C)

• **IMDG:**

Class:

1.1 D

• **IATA:**

Class:


1.1 D

Observations:

Forbidden

14.4. Hazard label

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Label:	
14.5. Packaging group	
• ADR, IMDG:	Not applicable
14.6. Environmental risk	
• Sea contaminant:	Yes
14.7. Special precautions for use	
• Warnings:	Do not transport with incompatible materials. Do not use flammable materials for stowage of packages. Do not transport with live animals.
• Danger (Kemler) code:	Not applicable
• EMS number:	F-B, S-Y
14.8. Code of bulk transport according to ANNEX II of MARPOL73/78 and IBC	Not listed.

15. Regulatory information**15.1. Regulations/safety, hygiene and environment legislation for the substance or mixture.**

- **National regulation:**
Act 19587 Regulatory decree 351/79 and Decree 295/2003
Act 20429 and decree 302/83

15.2. Chemical safety assessment:
No chemical safety assessment has been carried out.**16. Other information****References and acronyms**

IMDG Code: International Maritime Code for dangerous goods transportation.
IATA-DGR: Association of International Air Transport - Regulations on Dangerous Goods.
MERCOSUR: Southern Common Market - Agreement on Transport of Dangerous Goods.
ADR: European Agreement concerning the international transport of dangerous goods by road.

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