



Material Safety Data Sheet (MSDS-RDX)

PRODUCT IDENTIFICATION	
Product Name	RDX
Trade Names and Synonyms	Cyclotrimethylenetrinitramine, Cyclonite, Hexogen, Composition A-6
Manufacturer/Distributor	Various
Transportation Emergency	800-255-3924 (24 hrs -- CHEM • TEL)

PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES

The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING

All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, **DO NOT USE IT** before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

HAZARDOUS COMPONENTS			
Material or Component	CAS No.	TLV	PEL
RDX (Cyclotrimethylenetrinitramine)	00121-82-4	1.5 mg/m ³	1.5 mg/m ³
Desensitizing Wax	N/A	NE	NE
Graphite	07782-42-5	15 mppct (TWA)	2.5 mg/m ³
Water	N/A	NE	NE
Methanol	00067-56-1	325 mg/m ³ (STEL)	260 mg/m ³
N/A = Not assigned NE = Not established			

PHYSICAL DATA	
Boiling Point	N/A
Vapor Pressure	4.08 x 10 ⁻⁵ @ 100°C
Vapor Density	N/A
Solubility in Water	0.15 % @ 100°C
Specific Gravity	1.820
Melting Point	>203°C + 1°C
Evaporation Rate	N/A
Appearance and Odor	White or gray (if graphite present) powder. Powder may be wet (desensitized) with water (odorless) or a water-alcohol mixture (methanol odor). Powder may be dry and desensitized with wax (paraffin odor)

HAZARDOUS REACTIVITY	
Instability	Detonates with friction, impact, heat, electrostatic energy.
Incompatibility	Acids and alkalis, some organics such as amines and chlorides.
Hazardous decomposition	Detonation produces hazardous overpressures and fragments (if confined). Gases produced may contain carbon monoxide and nitrogen oxide.
Polymerization	Polymerization will not occur.

FIRE AND EXPLOSION DATA	
Flashpoint	Not applicable
Extinguishing media	None
Special fire fighting procedures	ALL EXPLOSIVES: DO NOT FIGHT EXPLOSIVES FIRES. Try to keep fire from reaching explosives. Isolate area. Guard against intruders. Division 1.1 Explosives: Evacuate the area for 5000 feet (1 mile). Consult <i>the 2000 Emergency Response Guidebook, Guide 112</i> for further details..
Unusual fire and explosion hazards	May detonate with impact or on heating.

HEALTH HAZARDS	
General	<p>RDX is a Division 1.1 explosive, and detonation may cause severe physical injury, including death. All explosives are dangerous and must be handled carefully and used following approved safety procedures under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, and ordinances.</p> <p>RDX is toxic by ingestion. In chronic animal studies by ingestion, RDX caused lung and GI tract congestion, anxiety psychoses, central nervous system diseases, abnormal reflexes, and death. It was not mutagenic in bacterial cell cultures.</p> <p>Reported human health effects include convulsions, insomnia, restlessness, and irritability. Seizures were followed by temporary amnesia, nausea, and weakness. Immediately after convulsions, there was evidence of rapid pulse rate and hypertension. Recovery was eventually complete. RDX was not a human skin irritant and an epidemiology study did not identify any abnormalities attributed to RDX exposure.</p> <p>Inhalation of explosive powders may cause nervous system irregularities including headaches and dizziness.</p> <p>Nitrogen oxides generated during use are skin, eye, and respiratory tract irritants.</p>
Toxicity	Oral LD50: 100 g/kg in rats.
Carcinogenicity	None of the components of RDX are listed as a carcinogen by NTP, IARC, or OSHA.

FIRST AID	
Inhalation	Not a likely route of exposure. If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably by mouth-to-mouth. If breathing is difficult, give oxygen. Seek prompt medical attention.
Eye and skin contact	Not a likely route of exposure. Flush eyes with water. Wash skin with soap and water.
Ingestion	Not a likely route of exposure. Induce vomiting immediately by giving two glasses of water and sticking finger down throat.
Injury from detonation	Seek prompt medical attention.

SPILL OR LEAK PROCEDURES	
Spill/leak response	Use appropriate personal protective equipment. Isolate area and remove sources of friction, impact, heat, low level electrical current, electrostatic or RF energy. Only competent, experienced persons should be involved in cleanup procedures. Sweep up with non-sparking tools and remove.
Waste disposal	Dispose of in compliance with federal regulations under the authority of the <i>Resource Conservation and Recovery Act</i> (40 CFR Parts 260-271).

SPECIAL PROTECTION INFORMATION	
Ventilation	Use only with adequate ventilation.
Respiratory	NIOSH approved particle masks for dust and mist.
Eye	Safety glasses or goggles.
Gloves	Impervious rubber gloves.
Other	Cotton overalls, undergarments and socks. Conductive soled shoes

SPECIAL PRECAUTIONS	
Keep away from friction, impact, and heat. Do not consume food, drink, or tobacco in areas where they may become contaminated with these materials.	

STORAGE CONDITIONS

Store in accordance with the requirements of *Subpart K, ATF: Explosives Law and Regulations (27 CFR 55.201-55.219)*.

SHIPPING INFORMATION

Proper shipping name	RDX, Wetted	
Hazard class	1.1D	
UN Number	UN0072	
DOT Label & Placard	DOT Label	EXPLOSIVE 1.1D
	DOT Placard	EXPLOSIVES 1.1

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For further information contact:

David W. Boston, President
OWEN COMPLIANCE SERVICES, INC.
12001 County Road 1000
P.O. Box 765
Godley, TX 76044
Telephone number: 817-551-0660
FAX number: 817-396-4584

MSDS prepared by:

David W. Boston
Original publication date: 03/15/93
Review date: 2/22/06
12/03/03