

## MATERIAL SAFETY DATA SHEET

### SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MANUFACTUER:** Maxam North America, Inc.  
5505 South 900 East, Suite 300  
Salt Lake City, UT 84117 USA

**EMERGENCY CONTACT:** Day (800) 255-3924 or (801) 233-6000  
Night (800) 255-3924

**TRADE NAME(S):** Non-Electric Detonators, ZipDet<sup>®</sup>, ZipDet<sup>®</sup> MS, ZipDet<sup>®</sup> MS Connector (MSC), ZipDet<sup>®</sup> S (SHORT), ZipDet<sup>®</sup> Trunkline, ZipDet<sup>®</sup> Dual Delay

**CAS NUMBER:** N/A

### SECTION 2 – HAZARDOUS INGREDIENTS

Explosive components are PETN (possibly RDX) and lead compounds sealed in a metal shell.

PETN, Pentaerythritol Tetranitrate,	CAS No. 78-11-5
Lead Azide, Pb (N <sub>3</sub> ) <sub>2</sub> ,	CAS No. 13424-46-9
Lead Styphnate, Lead Trinitroresorcinate, C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>9</sub> Pb	CAS No. 15245-44-0
RDX, Cyclotrimethylene Trinitramine, C <sub>3</sub> H <sub>6</sub> N <sub>6</sub> O <sub>6</sub>	CAS No. 121-82-4

### SECTION 3 – PHYSICAL DATA

**BOILING POINT:** N/A

**VAPOR PRESSURE (mm Hg):** N/A

**SPECIFIC GRAVITY (H<sub>2</sub>O=1):** N/A

**VAPOR DENSITY (Air=1):** N/A

**EVAPORATION RATE:** N/A

**PERCENT VOLATILE BY VOLUME (%):** None

**SOLUBILITY IN WATER:** Insoluable

**APPEARANCE AND ODOR:** Aluminum or copper shells with attached plastic tubing in various colors. No odor.

### SECTION 4 – FIRE AND EXPLOSION DATA

**FLASH POINT:** N/A

**FLAMMABLE LIMITS:** N/A

## MATERIAL SAFETY DATA SHEET

*EXTINGUISHING MEDIA:* See below

*UNUSUAL FIRE & EXPLOSION HAZARDS:* May explode when subjected to flame, heat, impact, or friction. Do not exceed 150 °F(66 °C). Avoid toxic fumes from fire.

*SPECIAL FIRE FIGHTING PROCEDURES:* DO NOT FIGHT AN ESTABLISHED FIRE. Do not fight fire. Withdraw personnel immediately. Allow fire to burn itself out.

### **X SECTION 5 – HEALTH HAZARD DATA**

*THRESHOLD LIMIT VALUE:* ACGIH:0.15 MG/M<sup>3</sup> TWA for lead dusts and fumes, as Pb. OSHA: 50 µG/M<sup>3</sup> PEL as Pb. For additional information, see 29 CFR 1910.1025.

*EFFECTS OF OVEREXPOSURE:* None likely when safe blasting practices are employed.

*EMERGENCY AND FIRST AID PROCEDURES:* Improper handling or misuse may cause detonation resulting in injuries from shrapnel. Lead and lead compounds are listed in the 1987 IARC Monographs as possible human carcinogens (Group 2B). Lead is not listed in the NTP annual report on carcinogens.

### **X SECTION 6 – REACTIVITY DATA *Issued by the Safety and Compliance Department***

*STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:* Gather up spilled cartridges and wash any contaminated area with water

*WASTE DISPOSAL METHOD:* Place down a blast hole prior to detonation; to be utilized as part of the blast. May be burned in a shallow layer on barren ground in accordance with federal, state and local regulations.

*STABILITY:* Stable under normal conditions. May explode when subjected to flame, heat, impact, or friction.

*INCOMPATIBILITY (MATERIALS TO AVOID):* Avoid contact with strong acids or alkalies.

*HAZARDOUS DECOMPOSITION PRODUCTS:* Gaseous Nitrogen Oxides, Carbon Oxides, and lead fumes.

*HAZARDOUS POLYMERIZATION WILL NOT OCCUR.*

### **X SECTION 7 – SPILL OR LEAK PROCEDURES**

*STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:* Pick up containers or units by hand. Avoid conditions affecting stability. DO NOT use damaged units.

*WASTE DISPOSAL METHOD:* Dispose of under direct supervision of a qualified person according to local, state and federal regulations. Call Maxam Initiation Systems for recommendations and assistance. This material may become a hazardous waste under certain conditions and must be collected, labeled and disposed of per state and federal hazardous waste regulations.

*TRANSPORTATION EMERGENCIES INVOLVING SPILLS, LEAKS, FIRES, OR EXPOSURES CALL*

## MATERIAL SAFETY DATA SHEET

CHEMTEL: 1-800-255-3924.

### **X SECTION 8 – SPECIAL PROTECTION INFORMATION**

*RESPIRATORY:* Avoid breathing fumes from detonation.

*VENTILATION:* Not required under normal conditions.

*PROTECTIVE GLOVES:* Not required except to prevent abrasive injuries.

*EYE PROTECTION:* Not required under normal conditions.

### **X SECTION 9 – SPECIAL PRECAUTIONS**

*COMPLY WITH "ALWAYS AND NEVER" AS ADOPTED BY THE INSTITUTE OF MAKERS OF EXPLOSIVES.*

*TRANSPORTATION, STORAGE AND USE MUST COMPLY WITH OSHA SAFETY AND HEALTH STANDARDS 29 CFR1910.109, APPLICABLE MSHA REGULATIONS, THE DOT AND HAZARDOUS MATERIALS REGULATIONS, BATF EQUIREMENTS AND STATE AND LOCAL TRANSPORTATION, STORAGE AND USE REGULATIONS AND ORDINANCES.*

*DOT CLASSIFICATION:* Explosive 1.4B  
*SHIPPING NAME:* Detonators, Non-electric  
*UN NUMBER:* UN0361  
*IMO HAZARD CLASS:* 1.4B

*DOT CLASSIFICATION:* Explosive 1.1B  
*SHIPPING NAME:* Detonators, Non-electric  
*UN NUMBER:* UN0360  
*IMO HAZARD CLASS:* 1.1B