



# MATERIAL SAFETY DATA SHEET

## SHOCK \*STAR NON-ELECTRIC DETONATORS

DATE MAY 2006

MSDS NO. ED-5

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**SECTION I** Issued by the Safety and Compliance Dept.

**AUSTIN STAR DETONATOR COMPANY**  
901 CANTU ROAD  
BROWNSVILLE, TX 78520  
  
24 HOUR PHONE; 956-831-7751

TRADE NAME AND SYNONYMS

Shock\*Star: Twin\* Star Detonators, In-Hole Delays, Detonators, Surface Delay Connectors, Quick-Relay Connectors, Dual-Delays, Shorty, Long Period, STD (Shock Tube with Detonators) and MS Connector.

Non-Electric Blasting Caps

**SECTION II HAZARDOUS INGREDIENTS**

Explosive components are PETN and lead compounds sealed in a metal shell.

PETN, Pentaerythritol tetranitrate, C<sub>5</sub>H<sub>8</sub>N<sub>4</sub>O<sub>12</sub>

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

**SECTION III 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

PERCENT VOLATILE BY VOL. (%)

N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: Insoluble

APPEARANCE AND ODOR: Aluminum or copper shells with Shock Tube attached. See the Shock Tube MSDS. No odor.

**SECTION IV FIRE AND EXPLOSION DATA**

FLASH POINT:

N/A

FLAMMABLE LIMITS:

N/A

EXTINGUISHING MEDIA:

See below

SPECIAL FIREFIGHTING PROCEDURES:

Do not fight fire. Withdraw personnel immediately. Allow fire to burn itself out.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

May explode when subjected to flame, heat, impact or friction. Safe from extraneous electric currents except for high energy discharges such as lightning. Do not exceed 150°F (66°C). Avoid toxic fumes from fire.

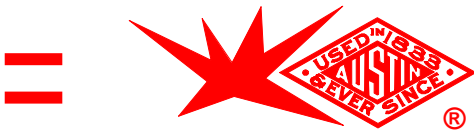
**SECTION V HEALTH HAZARD DATA**

THRESHOLD LIMIT VALUE: ACGIH: 0.05 mg/M<sup>3</sup> TWA, lead, elemental, and inorganic compounds, 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.



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Austin Star Detonator Company  
901 Cantu Road  
Brownsville, TX 78520

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### SECTION VI REACTIVITY DATA

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**STABILITY:** May explode when subjected to flame, heat, impact or friction. Shock\*Star and non-electric detonators are safe from extraneous electric currents except for high energy discharges such as lightning.

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide and lead fumes.

**HAZARDOUS POLYMERIZATION WILL NOT OCCUR.**

### SECTION VII 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 detonators.

**WASTE DISPOSAL METHOD:** Dispose of under direct supervision of a qualified person according to local, state and federal regulations. Call Austin Powder 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 in the United States:

**CALL CHEMTREC** for emergencies only: 1-800-424-9300. For calls originating outside the U. S. dial the U. S. access number followed by: 1-703-527-3887. All calls are recorded.

### SECTION VIII SPECIAL PROTECTION INFORMATION:

**RESPIRATORY PROTECTION:** Avoid breathing fumes from detonation.

**VENTILATION:** Not required.

**PROTECTIVE GLOVES:** Not required.

**EYE PROTECTION:** Not required.

### SECTION IX SPECIAL PRECAUTIONS

COMPLY WITH THE SAFETY LIBRARY PUBLICATION NO. 4 "WARNINGS AND INSTRUCTIONS" AS ADOPTED BY THE INSTITUTE OF MAKERS OF EXPLOSIVES.

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

THESE DETONATORS MAY BE SHIPPED UNDER ONE OF THE FOLLOWING DOT CLASSIFICATIONS:

DOT or IMDG proper shipping description:

Detonator Assemblies, Non-Electric, 1.1B, UN0360, PGII Detonator Assemblies, Non-Electric, 1.4B, UN0361, PGII

Consult IME Safety Library Publication No. 22, RECOMMENDATIONS FOR THE SAFE TRANSPORTATION OF DETONATORS IN A VEHICLE WITH CERTAIN OTHER EXPLOSIVE MATERIALS AND THE GUIDE FOR THE USE OF THE IME 22 CONTAINER.