SECTION 1: IDENTIFICATION

Product Identifier: Electric & Electronic Detonators
Product Names and Synonyms: Rock*Star series, Coal Mine Delay, Coal*Star, E*Star series, Static Star, Oil*Star Series, Rockbuster Special
Intended Use: As a commercial explosive.
Intended Users: For use only under strictly controlled conditions and only by qualified personnel who are fully trained in the handling and use of this product.

Name, Address, and Telephone of the Responsible Party:
Austin Powder Company
25800 Science Park Dr.
Cleveland, OH  44122
216-464-2400 during normal business hours
877-836-8286 Toll Free 24/7
www.austinpowder.com

In Case of Emergency Call CHEMTREC – TOLL FREE 24/7
800-424-9300 DOMESTIC
1-703-527-3887 INTERNATIONAL AND MARINE

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Item ("Article"):

<table>
<thead>
<tr>
<th>Code</th>
<th>Hazard Class</th>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>H204</td>
<td>Explosives</td>
<td>Division 1.4</td>
</tr>
</tbody>
</table>

Label Elements

Warning

Hazard Statements
Fire or projection hazard

Precautionary Statements
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not subject to grinding, friction, impact or shock.
Do not eat, drink or smoke when using this product.
Wear eye protection.
In case of fire: Extreme risk of explosion. Evacuate area. DO NOT fight fire when fire reaches explosives.
Store locked-up in a ventilated space, in accordance with all applicable regulations.
Dispose of contents/container in accordance with all applicable regulations.

Other Hazards: None expected

Unknown Acute Toxicity: Not available
SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

The hazardous substances are sealed inside the metal detonator capsule. The values in column 3 are shown as a percent of the total detonator shell weight, not including the coated wire to the detonator.

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>% (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>CAS No. 7440-66-6</td>
<td>0-60%</td>
</tr>
<tr>
<td>Copper</td>
<td>CAS No. 7440-50-8</td>
<td>0-60%</td>
</tr>
<tr>
<td>Aluminum</td>
<td>CAS No. 7429-90-5</td>
<td>0-40%</td>
</tr>
<tr>
<td>Cyclonite (RDX)</td>
<td>CAS No. 121-82-4</td>
<td>0-15%</td>
</tr>
<tr>
<td>Hexanitrostilbene (HNS)</td>
<td>CAS No. 20062-22-0</td>
<td>0-15%</td>
</tr>
<tr>
<td>Pentaerythritol tetranitrate (PETN)</td>
<td>CAS No. 78-11-5</td>
<td>0-15%</td>
</tr>
<tr>
<td>Barium chromate</td>
<td>CAS No. 10294-40-3</td>
<td>0-5%</td>
</tr>
<tr>
<td>Boron</td>
<td>CAS No. 7440-42-8</td>
<td>0-5%</td>
</tr>
<tr>
<td>Lead Azide</td>
<td>CAS No. 13424-46-9</td>
<td>0-5%</td>
</tr>
<tr>
<td>Lead tetraoxide</td>
<td>CAS No. 1314-41-6</td>
<td>0-5%</td>
</tr>
<tr>
<td>Tungsten (W)</td>
<td>CAS No. 7440-33-7</td>
<td>0-5%</td>
</tr>
<tr>
<td>Silicon</td>
<td>CAS No. 7440-21-3</td>
<td>0-2%</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

General: Never give anything by mouth to an unconscious person. If you feel unwell, get medical attention, show the label where possible.

Inhalation: Not an expected route of exposure.

Skin Contact: Not an expected route of exposure.

Eye Contact: Not an expected route of exposure.

Ingestion: Not an expected route of exposure.

Most Important Symptoms and Effects both Acute and Delayed:

Inhalation: Not an expected route of exposure.

Skin Contact: Not an expected route of exposure.

Eye Contact: Not an expected route of exposure.

Ingestion: Not an expected route of exposure.
SECTION 5: FIRE FIGHTING MEASURES

DO NOT fight fires involving Explosives. There is an extreme risk that explosives involved in a fire may detonate, especially if confined. Evacuate the area in all directions for one (1) mile or more if any amount of explosives is involved in a fire. Evacuation is recommended if the initial (incipient) fire, not involving explosives, becomes intense. General extinguishers may be used on the initial fire not involving explosives, such as electrical equipment fires, tire fires or a general plant fire. Water may be used to cool explosives not involved in the initial fire. Consult the most current Emergency Response Guidebook (ERG), Guide 112 for additional information.

Extinguishing Media

Suitable Extinguishing Media: None.

Unsuitable Extinguishing Media: For fires near explosives, dry chemical, foams, steam and smothering devices are not effective, can lead to possible explosion and must not be used.

Special Hazards Arising from the Fire Hazard:

Advice for Firefighters

Precautionary Measures: It is recommended that the amount and location of any explosives stored near a fire be determined prior to committing firefighters to fight the fire.

Firefighting Instructions: When fighting the initial fire, not involving explosives, firefighters should follow standard firefighting procedures for the materials involved.

Hazardous Combustion Products: No unusual combustion products are expected. However, toxic fumes will be present.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Contact the manufacturer or CHEMTREC. No smoking, open flames or flame/spark producing items in the area.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Isolate the area from unnecessary personnel.

For Emergency Personnel

Protective Equipment: Provide cleanup crew with proper PPE.

Emergency Precautions: Avoid release to the environment.

Methods and Material for Containment and Cleaning Up Contact manufacturer or CHEMTREC.
SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards when Processed: Avoid heating explosives in a confined space. Any proposed use of this product in elevated temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. A “hot work” program consistent with OSHA requirements at 29 CFR 1910.252 must be used when preforming hot work on explosive process equipment, storage areas or containers related to the intended use.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Smoking, open flames, and unauthorized sparking or flame-producing devices are prohibited.

Storage Conditions: Storage areas should be inspected regularly by an individual trained to identify potential hazards and ensure that all safety and security control measures are being properly implemented. All explosives storage sites must comply with ATF, OSHA or NRCAN regulations.

Incompatible Materials: Strong acids, strong bases and organic solvents.

Special Rules on Packaging: Packaging in accordance with USDOT or NRCAN regulations.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits: Not applicable, sealed item

Exposure Controls:

Appropriate Engineering Controls: Product should be handled and used under strictly controlled conditions.

Personal Protective Equipment:

Hand Protection: Not required.

Eye Protection: Safety glasses.

Respiratory Protection: Not required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Physical and Chemical Properties:

Appearance: Plastic coated wire attached to a sealed metal detonator capsule

Odor: None

Odor threshold: Not relevant

Vapor density: Not relevant

pH: Not relevant

Melting point: Not relevant

Initial boiling point and boiling range: Not relevant

Flash point (oil): Not relevant

Evaporation rate: Not relevant

Flammability: Not relevant
SECTION 10: STABILITY AND REACTIVITY

Reactivity and Chemical Stability: Stable and non-reactive under normal conditions of transportation, storage, handling and use.

Possibility of Hazardous Reactions: Polymerization will not occur.

Conditions to Avoid: Open flame and elevated temperatures.

Incompatible Materials: Strong acids, strong bases and organic solvents.

Hazardous Combustion Products: No unusual combustion products are expected. However, toxic fumes will be present.

SECTION 11: TOXICOLOGY INFORMATION

Acute Toxicity: Not classified

LD50 and LC50 Data: Not classified

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): None

Specific Target Organ Toxicity (Repeated Exposure): None

Aspiration Hazard: Not classified

Symptoms/Injuries after Inhalation: Not expected to be a hazard under normal conditions of use.

Symptoms/Injuries after Skin Contact: Not expected to be a hazard under normal conditions of use

Symptoms/Injuries after Eye Contact: Not expected to be a hazard under normal conditions of use.

Symptoms/Injuries after Ingestion: Not expected to be a hazard under normal conditions of use.

Chronic Symptoms: None
LD50 and LC50 Data (ingredients):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral Rat</th>
<th>LC50 Inhalation Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron, CAS No. 7440-42-8</td>
<td>650 mg/kg of body weight</td>
<td></td>
</tr>
<tr>
<td>Copper, CAS No. 7440-50-8</td>
<td>413 mg/kg of body weight</td>
<td></td>
</tr>
<tr>
<td>Cyclonite (RDX), CAS No. 121-82-4</td>
<td>71 mg/kg of body weight</td>
<td></td>
</tr>
<tr>
<td>Lead azide, CAS No. 13424-46-9</td>
<td>500 mg/kg of body weight</td>
<td>1.5 mg/l/4h</td>
</tr>
<tr>
<td>Lead tetraoxide, CAS No. 1314-41-6</td>
<td>500 mg/kg of body weight</td>
<td>1.5mg/l/4h</td>
</tr>
<tr>
<td>Silicon, CAS No. 7440-21-3</td>
<td>3,160 mg/kg of body weight</td>
<td></td>
</tr>
<tr>
<td>Pentarythritol tetranitrate (PETN), CAS No. 78-11-5</td>
<td>19500 mg/kg of body weight</td>
<td></td>
</tr>
<tr>
<td>Tungsten (W) CAS No. 7440-33-7</td>
<td>2000 mg/kg of body weight</td>
<td>2000 mg/kg of body weight</td>
</tr>
</tbody>
</table>

**SECTION 12: ECOLOGY INFORMATION**

Not available

**SECTION 13: DISPOSAL CONSIDERATIONS**

Call manufacturer or CHEMTREC.
**SECTION 14: TRANSPORTATION INFORMATION**

<table>
<thead>
<tr>
<th>Agency</th>
<th>UN Number</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Label Codes</th>
<th>PG</th>
<th>Marine Pollutant</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>US DOT</td>
<td>UN0255</td>
<td>Detonators, electric, for blasting.</td>
<td>1.4B</td>
<td>1.4B</td>
<td>No</td>
<td>ERG-114</td>
<td></td>
</tr>
<tr>
<td>Canadian TDG</td>
<td>UN0255</td>
<td>Detonators, electric, for blasting.</td>
<td>1.4B</td>
<td>1.4B</td>
<td>No</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>IMDG (Vessel)</td>
<td>UN0255</td>
<td>Detonators, electric, for blasting.</td>
<td>1.4B</td>
<td>1.4B</td>
<td>No</td>
<td>EmS-No, Fire: F-B</td>
<td>Spillage: S-X</td>
</tr>
<tr>
<td>IATA (Air)</td>
<td>UN0255</td>
<td>Detonators, electric, for blasting.</td>
<td>1.4B</td>
<td>1.4B</td>
<td>No</td>
<td>See Note 1</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Aircraft shipment of material is for Cargo Aircraft Only and each package not to exceed 75kg (165 lbs.)

**SECTION 15: REGULATORY INFORMATION**

**US Federal Regulations:**
Emergency Planning and Community Right-To-Know Act (EPCRA), a/k/a Superfund Amendments and Reauthorization Act (SARA) Title III
Toxic Substances Control Act (TSCA)
TSCA Section 8

<table>
<thead>
<tr>
<th>SARA Section 311/312</th>
<th>Fire hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sudden Release of pressure hazard.</td>
</tr>
<tr>
<td></td>
<td>Immediate (acute) health hazard</td>
</tr>
<tr>
<td></td>
<td>Delayed (chronic) health hazard</td>
</tr>
</tbody>
</table>

| TSCA                  | All the ingredients are on the United States TSCA inventory. |

**Canadian Regulations:**
Domestic Substances List (DSL)
Workplace Hazardous Materials Information System (WHMIS)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Note: Explosives are regulated by NRCAN and not classified under WHMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td>All ingredients are listed on the Canadian DSL</td>
</tr>
</tbody>
</table>

**SECTION 16: OTHER INFORMATION, INCLUDING DATE OF LAST REVISION**

This SDS was prepared in accordance with US (29 CFR 1900.1200) and Canadian (WHMIS 2015) requirements.

SDS: P-9       Initial Issue Date: 06/01/2015       Last Revision Date: 01/24/2019       Version: 11

**Party Responsible for the Preparation of This Document:**
Austin Powder Company
Cleveland, OH 44122
216-464-2400

This information is based on Austin Powder Company’s current knowledge and is intended to describe the product for the purposes of health and safety requirements only. It should not be construed as guaranteeing any specific property of the product.