

Powers Fasteners, Inc. • 2 Powers Lane, Brewster, NY, USA 10509 • Phone (914) 235-6300

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: Powder Loads

Product use: Powder-actuated loads (charges)

Chemical Family: Mixture

Supplier's name and address:

Powers Fasteners, Inc.

2 Powers Lane
Brewster, NY, U.S.A.
10509

Phone: 914-235-6300 (8 AM to 8 PM EST, Monday to Thursday; 8 AM to 7 PM EST, Friday)

Manufacturer's name and address:

Refer to Supplier

Emergency Tel. #: CHEMTREC – 800-424-9300

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
			<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Casing						
Copper	7440-50-8	45 - 60	1.0 mg/m ³ (dust/mist)	N/Av	1.0 mg/m ³ (dust/mist)	N/Av
Zinc Compound	7440-66-6	20 - 30	N/Av	N/Av	N/Av	N/Av
Propellant						
Nitrocellulose	9004-70-7	10 - 15	N/Av	N/Av	N/Av	N/Av
Nitroglycerine	55-63-0	5 - 10	0.05 ppm	N/Av	0.2 ppm	N/Av
Primer Mix						
Lead Styphnate	15245-44-0	0.5 - 1.5	N/Av	N/Av	N/Av	N/Av
Barium Nitrate	10022-31-8	0.1 - 1.0	0.5 mg/m ³ (as Ba)	N/Av	0.5 mg/m ³ (as Ba)	N/Av
Tetracene	109-27-3	0.1 - 1.0	N/Av	N/Av	N/Av	N/Av

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Brass casing with color code on crimped end. Odorless.

Caution! Explosive material. Dusts or fumes may cause irritation to the eyes, skin and respiratory tract.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system.

Routes of exposure: Skin contact, eye contact, ingestion and inhalation.

Signs and symptoms of short-term (acute) exposure:

Inhalation: After cartridges have been fired, dusts, vapors and/or fumes may cause irritation to the nose, throat and upper respiratory system.

Skin: Fragmented projectiles from primers can cause puncture wounds or cuts. Dusts or vapors may cause moderate irritation.

Eyes: Fragmented projectiles from primers can cause puncture wounds or cuts. Dusts or vapors may cause moderate irritation.

Ingestion: Ingestion of complete cartridges or dusts may cause gastrointestinal discomfort, including nausea, cramping, vomiting and diarrhea.

Chronic effects: Repeated or prolonged skin exposure to dusts may result in drying, cracking and defatting of the skin (dermatitis). Prolonged or excessive overexposure to dusts or fumes may cause damage to the respiratory system.

SECTION 3 — HAZARDS IDENTIFICATION Continued

Conditions aggravated by exposure: Pre-existing skin, eye and respiratory disorders.

Carcinogenic status: See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards: See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects: See ECOLOGICAL INFORMATION Section 12.

SECTION 4 — FIRST AID MEASURES

Inhalation: Immediately remove person to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing immediately. Wash thoroughly with soap and water. Seek medical attention if symptoms develop or persist, or if projectile has caused any injury.

Eye contact: Immediately flush eyes with running water for a minimum of 15 minutes. Remove contact lenses if they are worn. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person.

Note to Physicians: Treat symptomatically.

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: This product is essentially non-flammable. Load cartridges may explode if heated to temperatures above 392°F.

Flammability classification (OSHA 29 CFR 1910.1200): Explosive.

Flash point (Method): N/Av

Auto-ignition temperature: N/Av

Lower flammable limit (% by vol.): N/Av

Upper flammable limit (% by vol.): N/Av

Explosion data: *Sensitivity to mechanical impact / static discharge:* Sensitive to mechanical impact.

Oxidizing properties: None known.

Suitable extinguishing media: Use media suitable for surrounding fire such as dry chemical, carbon dioxide or water fog.

Special fire-fighting procedures/equipment: Do not enter fire area without proper protection. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece. Shield personnel to protect from exploding cartridges. Move containers from fire area if it can be done without risk. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products: Carbon oxides, copper oxide, zinc oxide, nitrogen oxides and other toxic or irritating fumes and smoke.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure the product does not enter drains, sewers, waterways or confined spaces.

Spill response/Cleanup: Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk. Notify the appropriate authorities as required.

Prohibited materials: None known.

Special spill response procedures: In case of a transportation accident, contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).

DOT/CERCLA Reportable quantity (RQ): Nitroglycerine (10 lbs); Zinc (1000 lbs); Copper (5000 lbs)

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: Wear protective equipment during handling. Use in a well-ventilated area. Do not inhale dusts or fumes. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep away from acids and incompatibles. Do not puncture or incinerate. Keep away from incompatibles (see Section 10).

Storage requirements: Store in a cool, dry, well-ventilated area away from sources of heat and ignition. Keep in original packaging at temperatures between 60° and 90°F. Keep away from incompatibles (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: Use adequate ventilation to maintain air contaminants below exposure limits. Local and/or general exhaust may be required

Respiratory protection: Respiratory protection is required if the airborne concentration exceeds exposure limits. When concentrations exceed the exposure limits specified, use NIOSH/MSHA-approved air-purifying respirators. In poorly ventilated or confined spaces, use a NIOSH/MSHA-approved self-contained breathing apparatus. Advice should be sought from respiratory protection specialists.

Skin protection and other protective equipment: It is recommended that protective gloves impervious to the material be worn at all times during cleaning. Confirmation of what type of material is most suitable for the intended application should be obtained from glove suppliers. Use hearing protection according to OSHA regulation 29 CFR 1910.95 or 1926.01. Additional impervious protective clothing is recommended to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area.

Eye / face protection: Wear safety glasses with side shields, goggles or face shield meeting ANSI requirements.

General hygiene considerations: Do not inhale dusts or fumes. Avoid contact with eyes and skin. Do not eat, drink or smoke when working. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities.

Permissible exposure levels: For individual ingredient exposure levels, see Section 2.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical state, odor and appearance: Brass casing with color code on crimped end. Odorless.

Odor threshold: N/Ap

Specific gravity: N/Ap

Vapor pressure: N/Ap

Boiling point: N/Ap

Evaporation rate (n-Butyl acetate = 1): N/Ap

Coefficient of water/oil distribution: N/Ap

Solubility in water: N/Ap

Vapor density (Air = 1): N/Ap

Freezing point: N/Ap

pH: N/Ap

Volatiles (% by weight): N/Ap

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: Stable under recommended storage and handling methods.

Hazardous polymerization: Will not occur.

Conditions to avoid: Contact with sparks, flame and other sources of ignition, crushing, and electrical currents.

Materials to avoid (incompatibles): Strong oxidizers (e.g. chlorine, peroxides, etc.) and strong acids.

Hazardous decomposition products: None known. Refer also to 'Hazardous Combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Carcinogenic status: None of the ingredients are classified as carcinogenic by IARC, ACGIH or NTP.

Reproductive effects, Teratogenicity, Mutagenicity: Not expected to cause reproductive effects, teratogenicity or mutagenicity.

Sensitization to material: Not expected to be a skin or respiratory sensitizer.

Other important hazards: Not available.

Synergistic materials: Not available.

Toxicological data: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

SECTION 11 — TOXICOLOGICAL INFORMATION Continued

Ingredients	LC ₅₀ (ppm/4hr) inh, rat	LD ₅₀ (mg/kg)	
		oral, rat	dermal, rabbit
Copper	N/Av	N/Av	N/Av
Zinc Compound	N/Av	N/Av	N/Av
Nitrocellulose	N/Av	>5000	N/Av
Nitroglycerine	N/Av	105	>280
Lead Styphnate	N/Av	N/Av	N/Av
Barium Nitrate	N/Av	355	N/Av
Tetracene	N/Av	N/Av	N/Av

SECTION 12 — ECOLOGICAL INFORMATION

Chemical fate information: The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.

Ecotoxicological information: There is no data available on the product itself.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Empty containers may contain product residue dust or fumes. Handle according to recommendations listed in Section 7.

Methods of disposal: Misfires, damaged and scrap load cartridges should be stored submerged in a container of water. Detergent should be added to the container to serve as a wetting agent. The only proper method for disposal is to incinerate the load cartridges in small quantities in a burner mechanism which has been specifically designed for destroying hazardous ammunition according to industry standards. After load cartridges have been rendered inert by proper incineration, the remaining scrap should be disposed of according to local, state, provincial or federal regulations.

RCRA: If this product, as supplied, becomes a waste, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. Under the RCRA, it is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 — TRANSPORTATION INFORMATION

US 49 CFR information:

Proper Shipping Name: Cartridges, power device

Primary Class: 1.4S

Packing Group: II

Subsidiary Class: None

UN No.: UN0323

Other Shipping Information: This product may be shipped by ground within the United States, as an 'ORM-D Consumer Commodity'. Refer to Section 173.63(b) for Consumer Commodity information if shipping under this exemption.

Canadian Transportation of Dangerous Goods Regulations (TDGR) information:

Proper Shipping Name: Cartridges, power device

Primary Class: 1.4S

Packing Group: II

Subsidiary Class: None

UN No.: UN0323

Other Shipping Information: This product may be partially exempted for ground shipments within Canada. Refer to Section 1.31 for additional information.

International IATA / ICAO information:

Proper Shipping Name: Cartridges, power device

Primary Class: 1.4S

Packing Group: none

Packing Instruction No.: 134

Subsidiary Class: None

UN No.: UN0323

SECTION 15 — REGULATORY INFORMATION

US Federal Information:

TSCA information: All ingredients are listed on the TSCA inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Nitroglycerine (10 lbs); Zinc (1000 lbs); Copper (5000 lbs)

SARA TITLE III:

Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present.

Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute); Delayed (Chronic).

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material may be subject to SARA notification requirements, since it contains Nitroglycerine, Copper and Zinc, Toxic Chemical constituents above the *de minimus* concentration.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product this product does not contain any ingredients which are known to the state of California to cause cancer, reproductive or developmental harm.

New Jersey Labeling Requirements: This product contains the following substances that may be required to be disclosed on product labeling:

Chemical Name	CAS #	% (weight)	New Jersey Hazardous Substance
Copper	7440-50-8	45 – 60	Yes
Zinc Compound	7440-66-6	20 – 30	Yes
Nitrocellulose	9004-70-0	10 – 15	Yes
Nitroglycerine	55-63-0	5 – 10	Yes
Lead Styphnate	15245-44-0	0.5 – 1.5	No
Barium Nitrate	10022-31-8	0.1 – 1	Yes
Tetracene	109-27-3	0.1 – 1	No

International Information:

Canadian WHMIS Classification: Explosives are not subject to the federal WHMIS requirements.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

Canadian CEPA information: All ingredients are present on the DSL.

SECTION 16 — OTHER INFORMATION

NFPA Rating:

0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 – Severe

Health: 2 Flammability: 0 Instability: 0 Special Hazard: None

HMIS Rating:

* - Chronic hazard 0 - Minimal 1 – Slight 2 - Moderate 3 - Serious 4 – Severe

Health: *2 Flammability: 0 Reactivity: 0

Prepared by: Powers Fasteners, Inc.
Telephone No.: 914-235-6300
Preparation date: February 12, 2008

- References:**
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2006.
 2. International Agency for Research on Cancer Monographs - searched 2008.
 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2008 (Chempendium and RTECs).
 4. Material Safety Data Sheet from manufacturer.
 5. US EPA Title III List of Lists – January 27, 2005 version.
 6. California Proposition 65 List – September 28, 2007 version.

SECTION 16 — OTHER INFORMATION Continued

Legend: ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
CAS: Chemical Abstract Services
CERCLA: US Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: US Code of Federal Regulations
DOT: US Department of Transportation
DSL: Canadian Domestic Substances List
EPA: US Environmental Protection Agency
HMIS: Hazardous Materials Identification System
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IARC: International Agency for Research on Cancer
N/Ap: not applicable
N/Av: not available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RCRA: US Resource Conservation and Recovery Act
SARA: US Superfund Amendments & Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
WEEL: Workplace Environmental Exposure Level
WHMIS: Canadian Workplace Hazardous Materials Identification System

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources, which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. This MSDS was prepared, and is to be used, for this product only. If the product is used as a component in another product, this information may not be applicable. This document is generated for the purpose of distributing occupational health, safety and environmental data.

END OF DOCUMENT