



MATERIAL SAFETY DATA SHEET

Product name: Safety Boosters; Lead-Free
Description: Also called shots, loads, powerloads, safety cartridges, and blanks (27 caliber short)
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Nitroglycerin	00055-63-0	0.46 mg/m ³ (S)	NE	0.1 mg/m ³ (S)
Nitrocellulose	09004-70-0	NE	NE	NE
Glass	NE	NE	NE	NE
Diazodinitrophenol	00087-31-0	NE	NE	NE
Strontium Nitrate	10042-76-9	NE	NE	NE
Tetracene	00109-27-3	NE	NE	NE
Brass	NE	NE	NE	NE

Abbreviations: PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. STEL = Short Term Exposure Limit. NE = None Established. NA = Not Applicable. (S) indicates exposure should be controlled for the cutaneous routes including the mucous membranes, eyes, and skin. Airborne exposures as well as direct contact must be considered.

PHYSICAL DATA

Appearance:	Blank brass cartridges.	Odor:	None.
Vapor Density: (air = 1)	Not applicable.	Vapor Pressure:	Not applicable.
Boiling Point:	Not applicable.	VOC Content:	Not applicable.
Evaporation Rate:	Not applicable.	Solubility in Water:	Not applicable.
Specific Gravity:	Not applicable.	pH:	Not applicable.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable.	Flammable Limits:	Not applicable.
Extinguishing Media:	Water.		
Special Fire Fighting Procedures:	Flood area with water or keep cartridges cool with water spray.		
Unusual Fire and Explosion Hazards:	Cartridges can blast if exposed to temperatures > 160°C. Mass detonation is not a potential hazard.		

REACTIVITY DATA

Hazardous Polymerization:	Will not occur.	Stability:	Stable.
Incompatibility:	Strong acids and oxidizing materials.		
Decomposition Products:	Oxides of nitrogen and acrid fumes.		
Conditions to Avoid:	Acids, excess heat, crushing, and electrical currents.		

HEALTH HAZARD DATA

Known Hazards:	None expected. Possible irritation from gases and dusts under certain conditions such as excessive firing with little air movement.
Signs and Symptoms of Exposure:	Adverse health effects are not expected from inhalation of dusts or gasses or from contact with the skin; however, adequate ventilation and good personal hygiene practices are recommended to keep exposure to a minimum.
Routes of Exposure:	None anticipated.
Carcinogenicity:	No ingredients are classified as a carcinogen by IARC, NTP or OSHA.

**Medical Conditions
Aggravated by Exposure:**

None anticipated.

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	If irritation occurs, flush with plenty of water. Call a physician if symptoms occur.
Skin:	Practice good hygiene by washing with soap and water after using and before meals.
Inhalation:	Move victim to fresh air. Get medical attention if breathing is difficult.
Ingestion:	Get immediate medical attention.
Other:	Seek prompt medical attention if physical injury occurs from pins, rivets, debris, etc. For bleeding wounds, place a clean cloth or similar absorbent material on the wound and apply firm pressure. Elevate the wound and transport immediately to a medical facility.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (natural or mechanically induced fresh air movements).
Eye Protection:	As a minimum, safety glasses with side-shields; safety goggles recommended.
Skin Protection:	None normally required; gloves (cotton) are recommended.
Hearing Protection:	Muffs or aural inserts. Refer to the applicable OSHA regulation 29 CFR 1910.95 or 1926.101.
Respiratory Protection:	None normally required.

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool dry place. Do not crush or drop. Keep away from excessive heat (such as extremely hot surfaces and flames), electrical current, strong acids and oxidizers. NFPA 495 requires 15 feet separation (or 1-hour firewall) from flammable liquids, flammable solids, and oxidizers. For industrial use only. Keep out of reach of children. Use with adequate ventilation. Practice good hygiene; i.e. wash after using and before eating or smoking.
Other Precautions:	Use only in powder actuated tools designed to handle these boosters. Construction industry employees must be properly trained as prescribed by OSHA regulations 29 CFR 1926.302 (e). All employees should be familiar with the safe operating procedures requirements for powder operated tools as described in ANSI A10.3 and OSHA 29 CFR 1910.243 (d).

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 1, Reactivity 3, PPE C Goggles.
DOT Shipping Name:	Consumer commodity, ORM-D.
ICAO / IATA Shipping Name:	Cartridges. Power device, Class 1.4S, UN 0323
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains 5-11% nitroglycerin (CAS No. 55-63-0) which is subject to reporting under section 313 of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
Waste Disposal Methods:	Misfires should be stored in a closed container until disposal or as otherwise required by local, state, and federal safety, health and environmental regulations. The recommended disposal method is in a burner specifically designed to destroy ammunition.
EPA Waste Code(s):	D003

CONTACTS

Customer Service:	1 800 879 8000	Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000	Jerry Metcalf	(x6704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (Other countries)		

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