



MATERIAL  
SAFETY DATA SHEET  
POWER LOADS

UCAN

EMERGENCY PHONE: 1-888-2891-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

## I - PRODUCT IDENTIFICATION

Product Name:	<b>CARTRIDGES FOR POWER DEVICES</b>
Synonyms:	Centerfire Powertool Loaded Round, Rimfire Cartridge For Power Device, 22,25,27 Caliber Powertool Round, Power Load, Blank Power Load and/or Booster, Powder Load
Chemical Family:	Not Applicable
Formula:	Not Applicable
Description:	Centerfire Powertool Loaded Round contains a Paper Wad which is non-hazardous
Hazard Classification:	Explosive
Revision No.:	2
Revision Date:	1-1-2001
Olin MSDS No.:	00055.0001

## II - COMPONENT DATA

### Product Composition

Consists of the following four components:

COMPONENT	PERCENT	PRODUCT	PRODUCT CODE NUMBER
A) Shellcase	75-85%	Brass 2xxx Series	BPE.020000
B) Propellant	7-13%	Smokeless powder	DPE.090000
C) Priming Mix/Primer	4-7%		
D) Paper Wad	.5-2%		

Additional information may be obtained from Olin for any component of interest. Quote the relevant product code number if applicable.

All percent compositions specified below are based on the entire product.

### A) Shellcase

CAS or Chemical Name:	Copper			
CAS Number:	7440-50-8			
Percentage Range:	50-60%			
Hazardous Per 29 CFR 1910.1200:	Yes (as dust or fume)			
Exposure Standards:	OSHA (PEL)		ACGIH (TLV)	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>



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	TWA:	N/A	1 (dust, mist)  0.1 (fume)	N/A	1 (dust, mist)  0.2 (fume)
	CEILING:	None	None	None	None
	STEL:	None	None	None	None

CAS or Chemical Name:	Zinc				
CAS Number:	7440-66-6				
Percentage Range:	15-30%				
Hazardous Per 29 CFR 1910.1200:	Yes (as dust or fume)				
Exposure Standards:  As zinc oxide	OSHA (PEL)		ACGIH (TLV)		
		ppm	mg/m <sup>3</sup>	ppm	Mg/m <sup>3</sup>
	TWA:	N/A	15 (total dust) 5 (respirable dust/fume)	N/A	10 (dust)  5 (fume)
	CEILING:	None	None	None	None
	STEL:	None	None	None	10-fume

B) Propellant

CAS or Chemical Name:	Nitrocellulose				
CAS Number:	9004-70-0				
Percentage Range:	7-13%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	None Established				

CAS or Chemical Name:	Nitroglycerin				
CAS Number:	55-63-0				
Percentage Range:	0.5-2%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	OSHA (PEL)		ACGIH (TLV)		
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	TWA:	N/A	None	0.05	0.46 (skin)
	CEILING:	0.2	1.0 (skin)	None	None
	STEL:	None	None	None	None

CAS or Chemical Name:	Dibutyl phthalate				
CAS Number:	84-74-2				
Percentage Range:	0.5-2%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	OSHA (PEL)		ACGIH (TLV)		
		ppm	Mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	TWA:	N/A	5	N/A	5



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	CEILING:	None	None	None	None
	STEL:	None	None	None	None

**C) Priming Mix/Primer**

CAS or Chemical Name:	Copper
CAS Number:	7440-50-8
Percentage Range:	0-5%
Exposure Standards:	See Copper above

CAS or Chemical Name:	Zinc
CAS Number:	7440-66-6
Percentage Range:	0-2%
Exposure Standards:	See Zinc above

CAS or Chemical Name:	Lead styphnate				
CAS Number:	15245-44-0				
Percentage Range:	0-1%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards: As inorganic lead (See 29 CFR 1910.1025)		OSHA (PEL)		ACGIH (TLV)	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	TWA:	N/A	0.05	N/A	0.05
	CEILING:	None	None	None	None
	STEL:	None	None	None	None
	ACTION LEVEL	None	0.03	None	None

CAS or Chemical Name:	Barium nitrate				
CAS Number:	10022-31-8				
Percentage Range:	0-1%				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards: Soluble barium compounds As Ba		OSHA (PEL)		ACGIH (TLV)	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	TWA:	N/A	0.5	N/A	0.5
	CEILING:	None	None	None	None
	STEL:	None	None	None	None

**D) Paper Wad**

Non-hazardous product
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**III - PRECAUTIONS FOR SAFE HANDLING AND STORAGE**

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.



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**STORAGE CONDITIONS:**

STORE IN A COOL, DRY, WELL VENTILATED PLACE, AWAY FROM ALL SOURCES OF IGNITION  
DO NOT STORE AT TEMPERATURES ABOVE: Not Applicable  
DO NOT SUBJECT TO MECHANICAL SHOCK.

**PRODUCT STABILITY AND COMPATIBILITY:**

SHELF LIFE LIMITATIONS:	25-30 Years
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	Acids, Class A & B explosives and oxidizers.

**IV – PHYSICAL DATA**

Appearance:	Cylindrical, brass cartridge
Freezing Point:	Not Applicable
Boiling Point:	Not Applicable
Decomposition Temperature:	Not Applicable
Specific Gravity:	Not Applicable
Bulk Density:	Not Applicable
pH @ 25° C:	Not Applicable
Vapor Pressure @ 25° C:	Not Applicable
Solubility in Water:	Not Applicable
Volatiles, Percent by Volume:	Not Applicable
Evaporation Rate:	Not Applicable
Vapor Density:	Not Applicable
Molecular Weight:	Not Applicable
Odor:	None
Coefficient of Oil/Water Distribution:	Not Applicable

**V – PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

**Personal Protection for Routine Use of Product:**

Respiratory Protection:	None required for normal handling.
Ventilation:	None beyond normal ventilation.
Skin and Eye Protection:	Use safety glasses.

**Equipment Specifications (When Applicable):**

Respirator Type:	Not normally needed.
Protective Clothing Type: (This includes: gloves, boots, apron, protective suit.)	Not normally needed.



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## VI - FIRE AND EXPLOSION HAZARD INFORMATION

### Flammability Data:

Explosive:	Yes
Flammable:	Not Applicable
Combustible:	Not Applicable
Pyrophoric:	No
Flash Point:	Not Applicable
Autoignition Temperature:	No Data
Flammable Limits at Normal Atmospheric Temperature and Pressure (Percent Volume in Air):	LEL - Not Applicable UEL - Not Applicable

### NFPA Ratings:

Not Established

### HMIS Ratings:

Health:	0
Flammability:	2
Reactivity:	4

### Extinguishing Media:

Water spray. Note: Do not fight fire, if fire reaches cargo, use water from unmanned stations.

### Fire Fighting Techniques and Comments:

See Section XI for protective equipment for fire fighting.

OTHER: Evacuate all persons including emergency response personnel from the area for 1500 feet (1/2 mile) in all directions if fire reaches cargo.

## VII - REACTIVITY INFORMATION

### Conditions Under Which This Product May Be Unstable:

Temperatures Above:	No Data
Mechanical Shock or Impact:	Yes (based on primer)
Electrical (Static) Discharge:	Yes (based on primer)
Other:	CARTRIDGE MAY DETONATE IF CASE IS PUNCTURED OR SEVERELY DAMAGED
Hazardous Polymerization:	Will not occur
Incompatible Materials:	Acids and caustics
Hazardous Decomposition:	Nitrogen oxides, carbon monoxide, carbon dioxide, lead oxides, lead dust/fume
Other conditions to avoid:	Cartridges placed in a high radio frequency energy



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	field (radar stations)
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**Summary of Reactivity:**

Explosive:	Yes
Oxidizer:	No
Pyrophoric:	No
Organic Peroxide:	No
Water Reactive:	No

**VIII - FIRST AID**

**Eyes**

Not a likely route of exposure as a cartridge.
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**Skin**

Not a likely route of exposure as a cartridge.
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**Ingestion**

Not a likely route of exposure as a cartridge.
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**Inhalation**

Not a likely route of exposure as a cartridge.
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**IX - TOXICOLOGY AND HEALTH INFORMATION**

**Routes of Absorption**

The physical nature of this product makes absorption from any route unlikely. A small amount of inhalable particles may be created when cartridge is fired.
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**Warning Statements and Warning Properties**

PARTICLES FROM FIRING MAY BE HARMFUL IF INHALED.
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**Human Threshold Response Data**

Odor Threshold:	No data
Irritation Threshold:	No data
Immediately Dangerous to Life or Health:	The IDLH concentration has not been established for this product.

**Signs, Symptoms and Effects of Exposure**

**Inhalation**

Acute:	Inhalation of the propellant is irritating to the nose, mouth, throat and lungs. Dilation of blood vessels with drop in blood pressure and headache, cyanosis and mental confusion may result from the nitroglycerin. The headache may be severe and can remain for a few hours to several days.
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	It typically starts at the forehead preceded by a sensation of warmth and fullness in the head and may extend to the back of the neck. Nausea, vomiting and abdominal pain may also occur.
Chronic:	<p>No additional effects are known or have been reported except for those described for acute inhalation exposure.</p> <p>This product is composed of a finished cartridge, and the propellant is completely sealed. It is judged that the physical nature of the product, the low percentage of propellant in the product and its use would preclude inhalation of a sufficient amount of propellant and the development of these acute and/or chronic symptoms.</p>

Skin

Acute:	Dermal exposure to the propellant may cause irritation which would subside rapidly upon removal of material without permanent damage. Additional effects would be similar to those described for acute inhalation exposure.
Chronic:	<p>No additional effects are known or have been reported except for those described for acute inhalation exposure.</p> <p>This product is composed of a finished cartridge, and the propellant is completely sealed. It is judged that the physical nature of the product, the low percentage of propellant in the product and its use would preclude inhalation of a sufficient amount of propellant and the development of these acute and/or chronic symptoms.</p>

Eye

Irritation may occur with inflammation of the conjunctiva. Any effect would not result in permanent impairment of vision.

It is judged that this effect would not occur because of the physical nature of the product, and low percentage of propellant in the product and its use.

Ingestion

Acute:	Irritation to the gastrointestinal tract. Additional effects would be similar to those described for acute inhalation exposure
Chronic:	<p>No additional effects are known or have been reported except for those described for acute inhalation exposure.</p> <p>It is judged that the physical nature of the product, the low percentage of propellant in the product, and its use would preclude ingestion and the development of these acute and/or chronic symptoms.</p>

**Medical Conditions Aggravated by Exposure**

None known or reported

**Interactions With Other Chemicals Which Enhance Toxicity**

None known or reported



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**Animal Toxicology**

Acute Toxicity

Inhalation LC 50:	No data
Dermal LD 50:	No data
Oral LD 50:	No data
Irritation:	Not an irritant to skin or eyes as a cartridge.

Acute Target Organ Toxicity

Nitroglycerin will produce dilation of blood vessels and drop in blood pressure which may affect the heart. It has also been shown to cause methemoglobinemia (cyanosis). It is judged that the low concentration of nitrocellulose and nitroglycerin and the physical nature of the product would preclude the occurrence of these symptoms from exposure to this product.

Chronic Target Organ Toxicity

There are no known or reported effects from repeated exposure to this product.

Reproductive and Developmental Toxicity

There are no known or reported effects on reproductive function or fetal development.

Carcinogenicity

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. Lead is classified as a carcinogen by IARC and EPA. Based on the physical nature of the product and its use, it is judged that the risk of cancer is not significant from exposure to the product.

Mutagenicity

This product is not known or reported to be mutagenic.

Aquatic Toxicity

No data for product. Individual components are as follows: Nitrocellulose: Fish are unaffected by nitrocellulose at concentrations of 1000 mg/l.

**X - TRANSPORTATION INFORMATION**

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

**DOT Description from the Hazardous Materials Table 49 CFR 172.101:**

Land (U.S. DOT):	Cartridges, power device, 1.4S UN0323, PG II
Water (IMO):	Same as land
Air (IATA/ICAO):	Same as land
Hazard Label/Placard:	Explosive 1.4S





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Reportable Quantity:	None Established
Emergency Guide:	114
Special Comments:	LAND - See 49 CFR 173.63 for ORM-D Reclassification  AIR - 25 KG. per package passenger aircraft 100 KG. Per package cargo aircraft.

## XI - SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Reportable Quantity:	(Per 40 CFR 302.4) - As nitroglycerin 10#, dibutyl phthalate 10#
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### **Spill Mitigation Procedures:**

This product represents an explosion hazard when involved in a fire or exposed to heat, friction, shock, etc. Remove all sources of ignition.

Air Release:	Not Applicable
Water Release:	Not Applicable
Land Spill:	Shut off all ignition sources, no flares, smoking in hazard area. Place in proper DOT containers for later disposition.

### **Spill Residues:**

Dispose of per guidelines under Section XII, WASTE DISPOSAL.

### **Personal Protection for Emergency Spill and Firefighting Situations:**

No extra protection required beyond that listed in Section V (In case of fire, use normal fire fighting equipment including self-contained breathing apparatus (SCBA) A hazardous physical characteristic of this product is: Explosive.

## XII - WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D003.

If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

OTHER: Deactivation

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.



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**XIII - ADDITIONAL REGULATORY STATUS INFORMATION**

***Toxic Substances Control Act:***

Components of this product are listed on the Toxic Substance Control Act inventory.

***California Safe Drinking Water and Toxic Enforcement Act of 1986 Proposition 65:***

"WARNING: This product contains detectable amounts of a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm."

***Superfund Amendments and Reauthorization Act Title III:***

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH: None

PHYSICAL: Sudden release of pressure

***Supplier Notification Requirements, Per 40 CFR 372.45:***

None established

***Emergency Planning and Community Right to Know, Per 40 CFR 355, APP. A:***

Extremely Hazardous Substance - Threshold Planning Quantity: None Established

**XIV - ADDITIONAL INFORMATION**

MSDS REVISION STATUS: New format and grouping. Address and phone number revised.

**XV - MAJOR REFERENCES**

1. Lee, Cheng-Chun, et al., Mammalian Toxicity of Munition Compounds: Phase I. Acute Oral Toxicity, Primary Skin and Eye Irritation, Dermal Sensitization, and Disposition and Metabolism. NTIS Report (ADB011150), National Technical Information Services, Springfield, VA. Report No. 1, July 22, 1975.

THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

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