



# MATERIAL SAFETY DATA SHEET

Olin MSDS No.: 00060.0001  
Revision No.: 21

Revision Date: 5/21/13  
Supercedes: 1/1/13

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** CENTERFIRE PRIMERS  
**Chemical Name:** Mixture  
**Synonyms:** 1 ½, 8 ½, 34 Primer, 41 Primer, 50 Cal (Q5604M & Q 5606M), M42C1 Primer, 116M-282A  
**Chemical Family:** Mixture  
**Formula:** Not applicable - mixture  
**Product Use/ Description:** Small Arms Ammunition Primer

**COMPANY ADDRESS** MSDS Control Group  
Olin Corporation – Winchester  
Division, Inc.  
600 Powder Mill Road  
East Alton, IL 62024  
[www.winchester.com](http://www.winchester.com)

**TECHNICAL INFORMATION:**  
618-258-3507

**EMERGENCY TELEPHONE NUMBER:**  
US/Canada: 1-800-424-9300  
Outside US/Canada: 703-527-3887  
Customer #: ccn24728

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

| CAS Number | Components       | % By Weight | EINECS/ ELINCS # | EU Classification     |                         |
|------------|------------------|-------------|------------------|-----------------------|-------------------------|
|            |                  |             |                  | Symbol                | R-Phrase                |
| 7440-50-8  | Copper           | 55 - 96     | 231-159-6        | None                  | None                    |
| 7440-66-6  | Zinc             | 10 - 55     | 231-175-3        | F (as dust or powder) | R 15-17                 |
| 15245-44-0 | Lead styphnate   | 4 - 5       | 239-290-0        | E, T, N               | R61-3-20/22-33-50/53-62 |
| 10022-31-8 | Barium nitrate   | 3 – 3.5     | 233-020-5        | O*                    | R8                      |
| 1345-04-6  | Antimony sulfide | 1 - 5       | 215-713-4        | None                  | None                    |
| 592-87-0   | Lead thiocyanate | 0.1 – 0.6   | 209-774-6        | None                  | None                    |

\*This material is not listed in Annex 1 of Directive 88/379/EEC. Olin has classified the material according to the conventional method based upon information from similar materials.

OSHA REGULATORY STATUS: Explosive

## 3. HAZARDS IDENTIFICATION

### CAUTION!

EXPLOSIVE. KEEP AWAY FROM HEAT. DO NOT SUBJECT TO MECHANICAL SHOCK. PARTICLES FROM FIRING MAY BE HARMFUL IF INHALED. DO NOT TAKE INTERNALLY.

**HAZARD RATINGS (for dust or fume)**  
Hazardous Materials Identification System (HMIS)

Degree of hazard (0 = low, 4 = extreme)  
Health: 0                      Flammability: 0

Physical Hazard:  
Explosive: 2

National Fire Protection Association (NFPA)

Mixture. Not rated.

### HUMAN THRESHOLD RESPONSE DATA

Odor Threshold:

Unknown

Irritation Threshold:

Unknown

Immediately Dangerous to Life or Health (IDLH) Value(s):

The IDLH for this product is not known. The IDLH for copper and lead is 100 mg/m<sup>3</sup>. The IDLH for barium nitrate is 50 mg/m<sup>3</sup>.

**POTENTIAL HEALTH EFFECTS**

This product is composed of a metal capsule which contains the various components completely sealed within. Therefore, under normal handling of this product, no exposure to any harmful materials will occur.

When the product is fired, a small amount of particles may be generated which may be slightly irritating to the eyes and the respiratory tract. The particles may contain trace amounts of these harmful substances:

**Lead:** Ingestion of large amounts of lead can cause abdominal pain, constipation, cramps, nausea and/or vomiting. Chronic exposure to lead can cause kidney damage, anemia, reproductive effects, developmental effects and permanent nervous system damage in humans including changes in cognitive function.

**Copper:** Inhalation of high concentrations of metallic copper dusts or fumes may cause nasal irritation and/or nausea, vomiting and stomach pain.

**Antimony sulfide:** Inhalation of high concentrations may cause dizziness, headache and nausea. Workers chronically exposed to high concentrations of antimony sulfide have developed heart and blood effects.

**Barium nitrate:** Ingestion of large doses of soluble barium compounds can cause cyanosis, skeletal muscle paralysis, respiratory arrest, irregular heartbeat and hypertension.

It is unlikely that the amount of particles that someone would be exposed to from firing would be sufficient to cause any of these effects.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** There are no medical conditions known to be aggravated by exposure to this product in its solid form. Exposure to lead can aggravate anemia, cardiovascular and respiratory disease.

**POTENTIAL ENVIRONMENTAL EFFECTS:** Product has not been tested for environmental properties.

**4. FIRST AID MEASURES**

- EYE CONTACT:** Immediately flush out fume or particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.
- SKIN CONTACT:** Wash skin with plenty of soap and water.
- INHALATION:** If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.
- INGESTION:** If ingested, immediately call a physician.

**5. FIRE FIGHTING MEASURES**

| PROPERTY               | VALUE          | PROPERTY   | VALUE          |
|------------------------|----------------|--|----------------|
| Explosive              | Yes            | Flammable  | Not applicable |
| Combustible            | Not applicable | Pyrophoric   | No             |
| Flash Point (°C):      | Not applicable | Burning Rate of Material:                                  | Not applicable |
| Lower Explosive Limit: | Not applicable | Autoignition Temp.:  | No data        |
| Upper Explosive Limit: | Not applicable | Flammability Classification: (defined by 29 CFR 1910.1200) | Explosive      |

- UNUSUAL FIRE AND EXPLOSION HAZARDS:** None.
- EXTINGUISHING MEDIA:** Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used.
- SPECIAL FIREFIGHTING PROCEDURES:** In case of fire, or if the fire reaches the cargo, use normal fire fighting equipment. Turnout gear supplies sufficient fire fighter protection from the explosive characteristics of this product.

**6. ACCIDENTAL RELEASE MEASURES**

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

Spills of this material may represent an explosion hazard and should be handled carefully. This product may explode if subjected to heat, shock, friction, static discharge, or impact. Remove all sources of ignition. Use non-sparking equipment to clean up spill. A spill of this material will normally not require emergency response team capabilities. If, however, a large spill occurs, call 1-888-289-1911 for technical assistance.

**7. HANDLING AND STORAGE**

**HANDLING:** No special requirements  
**STORAGE:** Do not store at temperatures above: 65.5°C (150°F)  
*Shelf Life Limitations:* Indefinite at 50-90°F and 35% relative humidity.  
*Incompatible Materials for Packaging:* Package only in DOT approved containers.  
*Incompatible Materials for Storage or Transport:* Acids, Class A & B explosives, strong oxidizers, and caustics  
**CONDITIONS TO AVOID:** Mechanical impact or shock and electrical discharge. Any contact with ammonia compounds.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

| CAS #      | CHEMICAL NAME    | ACGIH TLV   | OSHA PEL  | INTERNATIONAL OELS   |
|------------|------------------|---|---|--|
| 7440-50-8  | Copper           | 0.2 mg/m <sup>3</sup> (fume), 1 mg/m <sup>3</sup> (dusts and mists) | 0.1 mg/m <sup>3</sup> (fume)<br>1 mg/m <sup>3</sup> (dusts and mists) | Austria, Belgium, Canada: 0.2 mg/m <sup>3</sup> (fumes), 1 mg/m <sup>3</sup> (dusts)<br>Denmark: 1.0 mg/m <sup>3</sup> (dust and powder)<br>Germany (MAK): 0.1 mg/m <sup>3</sup> (fume), 1 mg/m <sup>3</sup> (dusts and mists) |
| 7440-66-6  | Zinc             | None established  | None established  | None established   |
| 15245-44-0 | Lead styphnate   | None established  | None established  | None established   |
| 10022-31-8 | Barium nitrate   | 0.5 mg/m <sup>3</sup>   | 0.5 mg/m <sup>3</sup>   | Germany (MAK): 0.5 mg/m <sup>3</sup> (I), Peak = II (2)<br>Austria, Belgium, Denmark, Finland, Hungary, Netherlands, Poland, Switzerland, U.K.: 0.5 mg/m <sup>3</sup>  |
| 1345-04-6  | Antimony sulfide | 0.5 mg/m <sup>3</sup>   | 0.5 mg/m <sup>3</sup>   | Austria, Belgium, Denmark, France, Finland, Germany, Hungary, Netherlands, Norway, Poland, Sweden, UK: 0.5 mg/m <sup>3</sup>   |
| 592-87-0   | Lead thiocyanate | None established  | None established  | None established   |

**ENGINEERING CONTROLS:** Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation. Use hearing protection.  
**EYE / FACE PROTECTION:** Use safety glasses.  
**SKIN PROTECTION:** Not normally needed  
**RESPIRATORY PROTECTION:** Respiratory protection not normally needed.  
**GENERAL HYGIENE:** Do not eat, drink, or smoke while using this product. Wash hands thoroughly after use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

| PROPERTY                             | VALUE                    | PROPERTY                                    | VALUE          |
|--------------------------------------|--------------------------|---|----------------|
| <i>Appearance:</i>                   | Brass cup assembly       | <i>Vapor Density (air = 1):</i>             | Not applicable |
| <i>Odor:</i>                         | None                     | <i>Boiling Point (°F):</i>                  | Not applicable |
| <i>Molecular Weight:</i>             | Not applicable - Mixture | <i>Melting point:</i>                       | Not applicable |
| <i>Physical State:</i>               | Solid                    | <i>Specific gravity (g/cc):</i>             | Not applicable |
| <i>pH:</i>                           | Not applicable           | <i>Bulk Density</i>                         | Not applicable |
| <i>Vapor Pressure (mm Hg):</i>       | Not applicable           | <i>Viscosity (cps):</i>                     | Not applicable |
| <i>Vapor Density</i>                 | Not applicable           | <i>Decomposition Temperature:</i>           | 82°C (180°F)   |
| <i>Solubility in Water (20 °C):</i>  | Insoluble                | <i>Evaporation Rate:</i>                    | Not applicable |
| <i>Volatiles, Percent by volume:</i> | Not applicable           | <i>Octanol/water partition coefficient:</i> | Not applicable |

**10. STABILITY AND REACTIVITY**

**STABILITY:** Will explode with mechanical impact or shock  
**MATERIALS TO AVOID:** Acids, Class A & B explosives, strong oxidizers, caustics, and ammonia.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** Nitrogen oxides, carbon monoxide, lead oxides, carbon dioxide, lead dust/fume  
**HAZARDOUS POLYMERIZATION:** Will not occur.  
**OTHER:** None

## 11. TOXICOLOGICAL INFORMATION

**POTENTIAL EXPOSURE ROUTES:** The physical nature of this product makes absorption from any route unlikely. A small amount of inhalable particles may be created when projectile is fired.

**ACUTE ANIMAL TOXICITY DATA:**

| For Product:                |  | For Components                     |                                    |                  |              |                |                       |
|-----------------------------|--|------------------------------------|------------------------------------|------------------|--------------|----------------|-----------------------|
|                             |  | Copper                             | Antimony sulfide                   | Lead thiocyanate | Zinc         | Lead styphnate | Barium nitrate        |
| Oral LD <sub>50</sub>       | Not applicable for product   | 3.5 mg/kg (mouse, intraperitoneal) | 209 mg/kg (mouse, i.p.)            | No data          | No data      | No data        | 355 mg/kg (rat)       |
| Dermal LD <sub>50</sub>     | Not applicable for product   | 375 mg/kg (rabbit, subcutaneous)   | >139 mg/kg (subcutaneous)          | No data          | No data      | No data        | No data               |
| Inhalation LC <sub>50</sub> | Not applicable for product. Particles generated from firing may be slightly toxic. | No data                            | No data                            | No data          | No data      | No data        | No data               |
| Irritation                  | Not a skin or eye irritant as a solid.   | Respiratory irritant               | Eye, skin and respiratory irritant | No data          | Eye irritant | No data        | Eye and skin irritant |

**SUBCHRONIC/ CHRONIC TOXICITY:**  
**CARCINOGENICITY:**

Lead has caused blood, kidney and nervous system damage in laboratory animals. The International Agency for Research on Cancer (IARC) lists lead as possibly carcinogenic to humans, group 2B.

**MUTAGENICITY:**

This product is not known or reported to be mutagenic. Lead has been shown to be mutagenic in several *in vitro* assays.

**REPRODUCTIVE, TERATOGENICITY, OR DEVELOPMENTAL EFFECTS:**

This product is not known or reported to cause reproductive or developmental effects. Lead has been shown to affect fetal development including birth defects and reduce male reproductive function in laboratory animals.

**NEUROLOGICAL EFFECTS:**

This product is not known or reported to cause neurological effects. Lead has caused peripheral and central nervous system damage and behavioral effects in laboratory animals.

**INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:**

None known or reported.

## 12. ECOLOGICAL INFORMATION

**ECOTOXICITY:** No data is available on this product. Individual constituents are as follows:

**Copper:** The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity and carbon dioxide content. Copper concentration varying from 0.1 to 1.0 mg/l have been found by various investigators to be not toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water to many kinds of fish, crustacea, mollusks, insects, and plankton.

**Lead:** LC 50 (48 hrs.) to bluegill (*Lepomis macrochirus*) is reported to be 2-5 mg/l. Lead is toxic to waterfowl.

**Zinc:** The following concentrations of zinc have been reported as lethal to fish:

- Rainbow trout fingerlings: 0.13 mg/l, 12 – 24 hours
- Bluegill sunfish: 6 hr TLM = 1.9 – 3.6 mg/l (soft water, 30°C)
- Rainbow trout: 4 mg/l (hard water) 3 days
- Sticklebacks: 1 mg/l (soft water) 24 hrs

The presence of copper appears to have a synergistic effect on the toxicity of zinc towards fish.

**MOBILITY:** Dissolved lead may migrate through soil.

**PERSISTANCE/DEGRADABILITY:** Not biodegradable. May decompose in soil leading to accumulation of lead.

**BIOACCUMULATION:** No data

### 13. DISPOSAL CONSIDERATIONS

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.

### 14. TRANSPORT INFORMATION

|                       | U.S. DOT   | RID/ADR | IMDG | IATA | IMO | Canada TDG |
|-----------------------|--|---------|------|------|-----|------------|
| PROPER SHIPPING NAME: | (a) PRIMERS, CAP TYPE<br>(b) PRIMERS, CAP TYPE   |         |      |      |     |            |
| HAZARD CLASS:         | (a) 1.4 S<br>(b) 1.4B  |         |      |      |     |            |
| UN NO.:               | (a) UN 0044<br>(b) UN0378  |         |      |      |     |            |
| PACKING GROUP:        | II   |         |      |      |     |            |
| HAZARD LABEL/PLACARD: | <b><u>U.S.HIGHWAY</u></b>  |         |      |      |     |            |
|                       | (a) No label / No placard required for U.S. Highway per 49CFR172.504(exception)<br>* (b) 1.4B / 1.4B Placard on shipments over 1001 lbs. (454 kgs.)  |         |      |      |     |            |
|                       | <b><u>OCEAN</u></b>  |         |      |      |     |            |
|                       | (a) No label / No placard required for Ocean per IMDG CODE Chapter 5.2 and 5.3. Package must be marked 1.4S to apply<br>* (b) 1.4B / 1.4B Placard on shipments over 1001 lbs. (454 kgs.)             |         |      |      |     |            |
|                       | <b><u>RAIL</u></b>   |         |      |      |     |            |
|                       | * (a) No label / 1.4S placard required by some Rail<br>* (b) 1.4B / 1.4B placard required by Rail  |         |      |      |     |            |
|                       | <b><u>AIR</u></b>  |         |      |      |     |            |
|                       | * (a) 1.4S / 1.4S placard on shipments over 1001 lbs. (454 kgs.)<br>* (b) 1.4B / 1.4B placard on shipments over 1001 lbs (454 kgs). CARGO AIRCRAFT ONLY  |         |      |      |     |            |
|                       | <b>NOTE: PERMISSIVE PLACARDING can apply per 49CFR172.502</b>  |         |      |      |     |            |
| REPORTABLE QUANTITY:  | 10 lbs. (4.5 Kg.) Reportable Quantity applies only as a hazardous waste which contains lead thiocyanate.   |         |      |      |     |            |
| SPECIAL COMMENTS:     | * Use appropriate symbol or EX number on shipping paper or mark on package. (See 49CFR172.320)<br><br>(a) 1 ½ , 8 ½ , 34 Primer, 41 Primer, M42C1 Primer<br>(b) 50 Cal (Q5604M & Q 5606M), 116M-282A |         |      |      |     |            |

### 15. REGULATORY INFORMATION

#### US FEDERAL

|                        |  |                            |                 |                         |                                 |  |
|------------------------|--|----------------------------|-----------------|-------------------------|---------------------------------|--|
| TSCA                   | The components of this product are listed on the Toxic Substance Control Act inventory.  |                            |                 |                         |                                 |  |
| CERCLA:                | Copper, R.Q.= 5000 lbs.; Zinc, R.Q. = 1000 lbs.; Antimony compounds, R.Q = 5000 lbs. (No reporting is required if diameter of the pieces of metal is equal to or exceeds 100 micrometers (0.004 inches). |                            |                 |                         |                                 |  |
| SARA 313:              | Copper, Lead and Lead compounds, Zinc (fume or dust) Barium compounds, Antimony compounds  |                            |                 |                         |                                 |  |
| SARA 313 Hazard Class: | <u>Health:</u>   | Acute – No<br>Chronic - No | <u>Fire:</u> No | <u>Reactivity:</u> None | <u>Release of Pressure:</u> Yes |  |
| SARA 302 EHS List:     | None of the components of this product are listed.   |                            |                 |                         |                                 |  |

RQ = Reportable Quantity

STATE RIGHT-TO-KNOW STATUS

| Component        | *CA Prop. 65 | New Jersey | Pennsylvania | Massachusetts | Michigan   |
|------------------|--------------|------------|--------------|---------------|------------|
| Copper           | Not listed   | X          | X            | X             | X          |
| Zinc             | Not listed   | X          | Not listed   | X             | X          |
| Lead styphnate   | X            | Not listed | Not listed   | X             | Not listed |
| Barium nitrate   | Not listed   | Not listed | X            | X             | Not listed |
| Antimony sulfide | Not listed   | Not listed | Not listed   | Not listed    | Not listed |
| Lead thiocyanate | X            | Not listed | Not listed   | X             | Not listed |

\* "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."

EUROPEAN REGULATIONS

Hazard Classification

Danger Symbol: E Explosive  
 Risk Phrases: R2 Risk of explosion by shock, friction, fire or other sources of ignition  
 Safety Phrases: S2 Keep out of reach of children.

German WGK Classification: Not known

CANADIAN REGULATIONS

DSL LIST: The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.  
 IDL: Copper, Barium nitrate, Antimony compounds  
 WHMIS: This product is not subject to WHMIS. It is regulated as a Class 6 Explosive in Canada.

16. OTHER INFORMATION

REVISIONS: New International format, toxicology review – 1/1/03; 7/1/09 – changed emergency contact number and mailing address; 1/1/11 - review; 1/1/12 review; 3/20/12 – Updated Emergency Contact Information; 1/1/13 – review ; 05/21/13-changed wording in section 2. Components from normal lead styphnate to lead styphnate.

PREPARED BY: Olin Corporation

OTHER: Additional information available from: [www.winchester.com](http://www.winchester.com)

**NOTICE:** 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 CURRENT AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.