

## Section 1. Identification

**Product name** Molub-Alloy Paste MF  
**SDS #** 468641  
**Code** 468641-DE03

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** Grease for industrial applications.  
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

**Supplier** BP Lubricants USA Inc.  
1500 Valley Road  
Wayne, NJ 07470  
Telephone: +1-888-CASTROL

**EMERGENCY HEALTH INFORMATION:** +1-800-447-8735

**EMERGENCY SPILL INFORMATION:** +1-800-424-9300 (CHEMTREC USA)  
+1-703-527-3887 (CHEMTREC outside the US)

## Section 2. Hazards identification

**OSHA/HCS status** This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** Not classified.

### GHS label elements

**Signal word** No signal word.

**Hazard statements** No known significant effects or critical hazards.

### Precautionary statements

**Prevention** Not applicable.

**Response** Not applicable.

**Storage** Not applicable.

**Disposal** Not applicable.

**Hazards not otherwise classified** Defatting to the skin.  
Note: High Pressure Applications  
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.  
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

## Section 3. Composition/information on ingredients

**Substance/mixture** Mixture  
Synthetic lubricant and additives. Thickening agent.

## Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
<input checked="" type="checkbox"/> Zinc oxide	≥10 - ≤25	1314-13-2
Graphite	≤10	7782-42-5
copper flakes	≤5	7440-50-8
Paraffin waxes and Hydrocarbon waxes	≤3	8002-74-2
aluminum	≤3	7429-90-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
<b>Skin contact</b>	<input checked="" type="checkbox"/> Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur. If skin irritation or rash occurs: Get medical advice/attention.
<b>Inhalation</b>	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
<b>Ingestion</b>	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training.

### Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	Treatment should in general be symptomatic and directed to relieving any effects.  Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.
<b>Specific treatments</b>	No specific treatment.

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet.

### Specific hazards arising from the chemical

Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

## Section 5. Fire-fighting measures

### Hazardous combustion products

Combustion products may include the following:  
metal oxide/oxides  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

### Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

### Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

#### For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

#### Small spill

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. If emergency personnel are unavailable, contain spilled material. Suction or scoop the spill into appropriate disposal or recycling vessels, then cover spill area with oil absorbent. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid contact of spilled material and runoff with soil and surface waterways.

#### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. See also Section 8 for additional information on hygiene measures.

### Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.


### Not suitable

Prolonged exposure to elevated temperature

## Section 8. Exposure controls/personal protection

### [Control parameters](#)

#### [Occupational exposure limits](#)

 Zinc oxide

#### **OSHA PEL (United States).**

TWA: 5 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
6/1993 Form: Fume

TWA: 5 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
6/1993 Form: Respirable fraction

TWA: 15 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
6/1993 Form: Total dust

#### **ACGIH TLV (United States).**

STEL: 10 mg/m<sup>3</sup> 15 minutes. Issued/Revised:  
3/2012 Form: Respirable fraction

TWA: 2 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
3/2012 Form: Respirable fraction

Graphite

#### **OSHA PEL Z3 (United States).**

TWA: 15 mppcf 8 hours. Issued/Revised:  
9/1997

#### **ACGIH TLV (United States).**

TWA: 2 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
9/1994 Form: Respirable fraction

#### **OSHA PEL (United States).**

TWA: 5 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
6/1993 Form: Respirable fraction

TWA: 15 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
6/1993 Form: Total dust

copper flakes

None.

Paraffin waxes and Hydrocarbon waxes

#### **ACGIH TLV (United States). [Paraffin wax fume]**

TWA: 2 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
9/1994 Form: Fume

aluminum

#### **OSHA PEL (United States).**

TWA: 5 mg/m<sup>3</sup>, (as Al) 8 hours. Issued/  
Revised: 6/1993 Form: Respirable fraction

TWA: 15 mg/m<sup>3</sup>, (as Al) 8 hours. Issued/  
Revised: 6/1993 Form: Total dust

#### **ACGIH TLV (United States). [Aluminum, metal and insoluble compounds]**

TWA: 1 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
1/2008 Form: Respirable fraction

### [Biological exposure indices](#)

No exposure indices known.

### [Appropriate engineering controls](#)

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### [Environmental exposure controls](#)

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## Section 8. Exposure controls/personal protection

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Safety glasses with side shields.

#### Skin protection

##### Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

##### Body protection

Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

##### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

#### Physical state

Paste

#### Color

Silvery. [Light]

#### Odor

Not available.

#### Odor threshold

Not available.

#### pH

Not applicable.

#### Melting point/freezing point

Not available.

#### Boiling point, initial boiling point, and boiling range

Not available.

#### Flash point

Open cup: 173°C (343.4°F) [Estimated. Based on Lubricants - Base Oils]

#### Evaporation rate

Not available.

#### Flammability

Not available.

#### Lower and upper explosion limit/flammability limit

Not applicable.

#### Vapor pressure

Not available.

## Section 9. Physical and chemical properties

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method

Relative vapor density

Not applicable.

Density

>1000 kg/m<sup>3</sup> (>1 g/cm<sup>3</sup>) at 20°C

Solubility(ies)

Media	Result
Water	Not soluble

Partition coefficient: n-octanol/water

Not applicable.

Auto-ignition temperature

Not applicable.

Decomposition temperature

Not available.

Viscosity

Not available.

Particle characteristics

Median particle size

Not available.

## Section 10. Stability and reactivity

Reactivity

No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability

The product is stable.

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

Incompatible materials

Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

Information on toxicological effects

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact

No known significant effects or critical hazards.

Skin contact

No known significant effects or critical hazards.

Inhalation

No known significant effects or critical hazards.

Ingestion

No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

No specific data.

Skin contact

Adverse symptoms may include the following:  
irritation  
dryness  
cracking

## Section 11. Toxicological information

**Inhalation** No specific data.

**Ingestion** No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** Not available.

**Potential delayed effects** Not available.

#### Long term exposure

**Potential immediate effects** Not available.

**Potential delayed effects** Not available.

#### Potential chronic health effects

**General** No known significant effects or critical hazards.

**Carcinogenicity** No known significant effects or critical hazards.

**Mutagenicity** No known significant effects or critical hazards.

**Teratogenicity** No known significant effects or critical hazards.

**Developmental effects** No known significant effects or critical hazards.

**Fertility effects** No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	14717.65 mg/kg
Inhalation (vapors)	88.31 mg/l

## Section 12. Ecological information

### Toxicity

No testing has been performed by the manufacturer.

### Persistence and degradability

Not expected to be rapidly degradable.

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Mobility** Grease. insoluble in water.




**Other adverse effects** No known significant effects or critical hazards.

## Section 13. Disposal considerations

### Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	UN3077	UN3077	UN3077
UN proper shipping name	-	Not available.	Environmentally hazardous substance, solid, n.o.s.. Marine pollutant (Zinc oxide)	Environmentally hazardous substance, solid, n.o.s. (Zinc oxide)
Transport hazard class(es)	-	9 	9 	9 
Packing group	-	III	III	III
Environmental hazards	No.	Yes.	Yes.	Yes.
Additional information	-	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Emergency schedules</b> F-A, S-F	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user Not available.

Transport in bulk according to IMO instruments Not available.

## Section 15. Regulatory information

### U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

### SARA 302/304

### Composition/information on ingredients

No products were found.

Product name Molub-Alloy Paste MF

Product code 468641-DE03

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Version 1.02 Date of issue 06/20/2024.

Format US

Language ENGLISH



## Section 15. Regulatory information

### [SARA 311/312](#)

**Classification** Not applicable.

### [SARA 313](#)

	Product name	CAS number	Concentration
<b>Form R - Reporting requirements</b>	Zinc oxide	1314-13-2	10
	aluminum	7429-90-5	1.26 - 1.34
<b>Supplier notification</b>	Zinc oxide	1314-13-2	10
	aluminum	7429-90-5	1.26 - 1.34

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### [State regulations](#)

#### **Massachusetts**

The following components are listed: ZINC OXIDE FUME; GRAPHITE (NATURAL)DUST; PARAFFIN WAX FUME; ALUMINUM

#### **New Jersey**

The following components are listed: ZINC OXIDE; GRAPHITE (NATURAL); PARAFFIN WAX; ALUMINUM

#### **Pennsylvania**

The following components are listed: ZINC OXIDE FUME; GRAPHITE; PARAFFIN WAXES AND HYDROCARBON WAXES; ALUMINUM PYRO POWDERS

#### **California Prop. 65**

This product does not require a Safe Harbor warning under California Prop. 65.

### [Other regulations](#)

#### **Australia inventory (AIC)**

All components are listed or exempted.

#### **Canada inventory**

All components are listed or exempted.

#### **China inventory (IECSC)**

All components are listed or exempted.

#### **Japan inventory (CSCL)**

At least one component is not listed.

#### **Korea inventory (KECI)**

All components are listed or exempted.

#### **Philippines inventory (PICCS)**

All components are listed or exempted.

#### **Taiwan Chemical Substances Inventory (TCSI)**

At least one component is not listed.

#### **REACH Status**

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

## Section 16. Other information

### [National Fire Protection Association \(U.S.A.\)](#)



### [History](#)

**Date of issue/Date of revision** 06/20/2024.

**Date of previous issue** 12/19/2023.

**Prepared by** Product Stewardship

### **Key to abbreviations**

ACGIH = American Conference of Industrial Hygienists  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS Number = Chemical Abstracts Service Registry Number  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as

## Section 16. Other information

modified by the Protocol of 1978. ("Marpol" = marine pollution)

OEL = Occupational Exposure Limit

SDS = Safety Data Sheet

STEL = Short term exposure limit

TWA = Time weighted average

UN = United Nations

UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

✔ Indicates information that has changed from previously issued version.

### Notice to reader

*All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.*

*The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.*

*It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.*