



Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name	MOLUB-ALLOY 860/220-1 ES GREASE	Code	73547-AT
Supplier	CASTROL INDUSTRIAL NORTH AMERICA INC. 1001 WEST 31ST STREET DOWNERS GROVE, IL 60515-1280	Validation Date	1/18/2002.
Synonym	Not available.	Print Date	1/18/2002.
Trade name	MOLUB-ALLOY IS REGISTERED IN THE U.S. PATENT AND TRADEMARK OFFICE.	Responsible Name	Product Stewardship
Material Uses	Not available.	In Case of Emergency CHEMTREC (800) 424-9300	
Manufacturer	CASTROL INDUSTRIAL NORTH AMERICA INC 1001 WEST 31ST STREET DOWNERS GROVE, IL 60515-1280		

Section 2. Composition, Information on Ingredients

Name	CAS #	% by Weight	Exposure Limits
1) DISTILLATES, PETROLEUM, SOLVENT-REFINED HEAVY NAPHTHENIC	64741-96-4	10-15	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist
2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	64742-54-7	10-15	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist
3) DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	64742-65-0	15-20	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist
4) RESIDUAL OILS, PETROLEUM, SOLVENTDEASPHALTED	64741-95-3	1-5	ACGIH (United States). TWA: 5 mg/m ³ OSHA (United States). TWA: 5 mg/m ³
5) RESIDUAL OILS, PETROLEUM, SOLVENT-DEWAXED	64742-62-7	15-20	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist
6) RESIDUAL OILS, PETROLEUM, HYDROTREATED	64742-57-0	15-20	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist
7) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	64742-52-5	10-15	ACGIH (United States). TWA: 5 mg/m ³ Form: Mist OSHA (United States). TWA: 5 mg/m ³ Form: Mist ACGIH (United States). STEL: 10 mg/m ³ Form: Mist

Section 3. Hazards Identification

Physical State and Appearance	Liquid. Petroleum Grey.
Emergency Overview	WARNING! Not available.
Routes of Entry	Absorbed through skin. Eye contact. Inhalation.
Potential Acute Health Effects	May cause eye irritation. Product has a low order of acute oral toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. Acute oral LD50 (rat) greater than 5 g/kg of body weight. Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation. Extensive/prolonged or repeated exposure to this product may result in absorption. Product has a low order of acute dermal toxicity. May cause skin irritation. Acute dermal LC50 (rabbit) greater than 3.16 g/kg of body weight.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not known to be carcinogen. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.
Medical Conditions Aggravated by Overexposure:	Repeated or prolonged exposure is not known to aggravate medical condition.
Overexposure /Signs/Symptoms	Not available.
See Toxicological Information (section 11)	

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Notes to Physician	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	May be combustible at high temperature.
Autoignition Temperature	Not available.
Flash Points	OPEN CUP: 233°C (451.4°F) (Cleveland.).
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO ₂). Some metallic oxides.
Fire Hazards in Presence of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

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Fire Fighting Media and Instructions

SMALL FIRE: Use DRY chemical powder.
 LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
 Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards

In case of fire, combustion gases as carbon dioxide, carbon monoxide and carbon residues are generated. Their inhalation is harmful.

Special Remarks on Explosion Hazards

Not available.

Section 6. Accidental Release Measures

Small Spill and Leak

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill and Leak

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Section 7. Handling and Storage

Avoid breathing vapors or spray mists.

Keep container tightly closed. Keep container in a cool, well-ventilated area.

Avoid contact with skin and eyes. Avoid breathing mists. Do not take internally. Keep container closed when not in use. Bring product to room temperature before use. Do not store near heat, sparks, flame or strong oxidizing agents. Minimize breathing vapor, mist or fumes.

Section 8. Exposure Controls, Personal Protection

Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Use local exhaust to capture vapor, mists or fumes, if necessary. Provide ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

Personal Protection

Eyes Safety glasses.

Body Lab coat.

Eyewash facility. Use chemical-resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

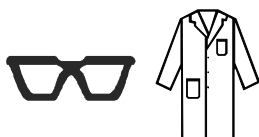
Respiratory Not applicable.

Hands

Chemical resistant gloves should be used when handling this product.

Feet Not applicable.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits

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Product Name

- | | |
|---|---|
| 1) DISTILLATES, PETROLEUM, SOLVENT-REFINED HEAVY NAPHTHENIC | <p>ACGIH (United States).
 TWA: 5 mg/m³ Form: Mist
 OSHA (United States).
 TWA: 5 mg/m³ Form: Mist
 ACGIH (United States).
 STEL: 10 mg/m³ Form: Mist</p> |
| 2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC | <p>ACGIH (United States).
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| 7) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC | <p>ACGIH (United States).
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 OSHA (United States).
 TWA: 5 mg/m³ Form: Mist
 ACGIH (United States).
 STEL: 10 mg/m³ Form: Mist</p> |

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odor	Petroleum
Boiling/Condensation Point	Not available.	Taste	Not available.
Melting/Freezing Point	Not available.	Color	Grey.
pH Concentrate	Not applicable.		
pH Dilution % and Value	Not available.		
Critical Temperature	Not available.		
Specific Gravity	0.8974 to 0.9074 (Water = 1)		
Vapor Pressure	Not available.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Evaporation Rate	Not available.		
VOC	Not available.	VOC Method	Not available.
Viscosity	Not available.		
Solubility	Insoluble in cold water.		

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Physical Chemical Comments Not available.

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Conditions of Instability Prolonged exposure to elevated temperature.

Incompatibility with Various Substances
Strong oxidizers, acids and alkalies.

Hazardous Decomposition Products Not available.

Hazardous Polymerization Will not occur.

Section 11. Toxicological Information

Toxicity to Animals LD50: Not available.
LC50: Not available.

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Not known to be carcinogen.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.

Other Toxic Effects on Humans No specific information is available in our database regarding the other toxic effects of this material for humans.

Special Remarks on Toxicity to Animals Not available.

Special Remarks Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. Do not induce vomiting; get medical attention immediately. Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen, if available. If overexposed to oil mist, remove from exposure until excessive oil mist condition subsides. In case of contact, wash thoroughly with soap and water. Remove contaminated clothing. Launder clothing before reuse. Obtain immediate medical attention if product is injected under the skin. Remove contaminated shoes and clean before re-use; discard if oil-soaked. Product is readily removed from skin by waterless hand cleaners.

Special Remarks on Other Toxic Effects on Humans May cause eye irritation. Product has a low order of acute oral toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. Acute oral LD50 (rat) greater than 5 g/kg of body weight. Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation. Extensive/prolonged or repeated exposure to this product may result in absorption. Product has a low order of acute dermal toxicity. May cause skin irritation. Acute dermal LC50 (rabbit) greater than 3.16 g/kg of body weight.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD and COD Not available.

Biodegradable/OECD Not available.

Mobility Not available.

Products of Degradation These products are carbon oxides (CO, CO₂) and water. Some metallic oxides.

Toxicity of the Products of Biodegradation The product itself and its products of degradation are not toxic.

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Special Remarks on the Products of Biodegradation Not available.

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations. Recover free liquid. Keep product out of streams and waterways by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Add sand, earth, or other suitable absorbent to spill area. Minimize skin contact. Dispose of in accordance with local, state and federal regulations. Disposal of this material to the land may be banned by federal law (40 CFR 268).
RCRA Waste Code(s) USED OIL
Waste Stream Not available.
 Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification Not available.
 Corrosive liquids, n.o.s.(MOLUB-ALLOY 860/220-1 ES GREASE), 8, UN1760, I
Marine Pollutant Not available.
Special Provisions for Transport Petroleum oil, not regulated in containers less than 3500 gallons.
ADR/RID Classification Not available.
IMO/IMDG Classification Not available.
ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: MOLUB-ALLOY 860/220-1 ES GREASE: immediate health hazard.
 SARA 313 toxic chemical notification and release reporting: No products were found.
 Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: No products were found.
 Clean air act (CAA) 112 accidental release prevention: No products were found.
 Clean air act (CAA) 112 regulated toxic substances: No products were found.
 Clean air act (CAA) 112 regulated flammable substances: No products were found.

State Regulations No products were found.
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: SILICA, CRYSTALLINE - QUARTZ
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: SILICA, CRYSTALLINE - QUARTZ

Inventory Lists

TSCA 8(b) inventory: One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

CEPA DSL: One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

Australia (NICNAS): One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

Korea (TCCL): One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

Philippines (RA6969): One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

MITI: One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

EINECS: One or more of the materials contained in this product may not appear on the applicable inventory list. Please consult the manufacturer for additional information.

Section 16. Other Information

Label Requirements

Hazardous Material Information System (U.S.A.)

Health	0
Fire Hazard	1
Reactivity	0
Personal Protection	A

National Fire Protection Association (U.S.A.)



References

Not available.

Other Special Considerations

PETROLEUM OIL: STEL = 10 mg/M3. Using terminology of the International Agency for Research on Cancer (IARC), the petroleum distillates listed in Section II are classified by the supplier as severely processed. Not all those listed in Section II may be present. The supplier has stated that these distillates do not require a carcinogen label as defined by OSHA 29 CFR 1910.1200. No component known to be present in this product at >0.1% is presently listed as a carcinogen by IARC, NTP or OSHA.

This product is a mixture and is NOT listed in the TSCA Inventory. The individual ingredients in the product are listed in the TSCA Inventory.

Validated by Larry J. Barder-CINA on 1/18/2002.

Printed 1/18/2002.

CHEMTREC (800) 424-9300

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.