

MATERIAL SAFETY DATA SHEET

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Sosmetal No. 211306
Part No. 9005A Aerosol
Revision 4 ~ February 17, 2005

EMERGENCY OVERVIEW

CONTENTS **EXTREMELY FLAMMABLE** AND **UNDER PRESSURE**. STORE BELOW 120°F, OUT OF SUNLIGHT, AND AWAY FROM HEAT SOURCES. DO NOT PUNCTURE OR INCINERATE. AVOID CONTACT WITH SKIN AND EYES. VAPOR HARMFUL. HARMFUL OR FATAL IF SWALLOWED. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

DISTRIBUTOR: Sosmetal Products, Inc.
2945 East Tioga Street
Phila., PA 19134 USA

SUPPLIER PHONE: 215-739-6200
EMERGENCY: 800-255-3924 (24 hr) Chem-Tel
SUPPLIER 24hr:

PRODUCT NUMBER: 9005A
PRODUCT DESCRIPTION: Micro Moly
SUPPLIER NUMBER:

PRODUCT TYPE: Aerosol
CAS NUMBER: Mixture
EMAIL: msds@sosmetal.com

REVISION NUMBER: 4
REVISION DATE: February 17, 2005
PRINT DATE: February 17, 2005

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

| INGREDIENT | CAS NUMBER | OSHA PEL | NIOSH REL | ACGIH PEL | IDLH | % WT |
|--------------------------|-------------|----------|-----------|-----------|----------|-------|
| Hexane | 000110-54-3 | 500 ppm | 50 ppm | 50 ppm | 1100 ppm | 40-50 |
| Liquefied Petroleum Gas | 068476-85-7 | 1000 ppm | 1000 ppm | 1000 ppm | 2000 ppm | 40-50 |
| Molybdenum Disulfide | 001317-33-5 | N/E | N/E | N/E | N/E | < 10 |
| 1-Butanol, Titanium Salt | 005593-20-4 | N/E | N/E | N/E | N/E | < 10 |
| sec-Butyl Alcohol | 000078-92-2 | 150 ppm | 100 ppm | 100 ppm | 2000 ppm | < 10 |

See Section 11 for LD50 and LC50 Species/Route Information.

See Sections 15 and 16 for Symbol Letters and R Phases.

SECTION 3 HAZARD IDENTIFICATION

ROUTES OF ENTRY:

| | | | | | | | | | |
|--------------|-------------------------------------|-----------------|-------------------------------------|-------------|-------------------------------------|------------|-------------------------------------|-----------|--------------------------|
| Skin Contact | <input checked="" type="checkbox"/> | Skin Absorption | <input checked="" type="checkbox"/> | Eye Contact | <input checked="" type="checkbox"/> | Inhalation | <input checked="" type="checkbox"/> | Ingestion | <input type="checkbox"/> |
|--------------|-------------------------------------|-----------------|-------------------------------------|-------------|-------------------------------------|------------|-------------------------------------|-----------|--------------------------|

EFFECTS OF ACUTE EXPOSURE

EYE: Liquid contact may cause pain along with moderate eye irritation.

SKIN: Prolonged or repeated exposure may cause skin irritation. Repeated contact may cause drying or flaking of skin. May cause more severe response if confined to skin.

INGESTION: Due to being an aerosol, the product does not lend itself to ingestion. Should ingestion occur, it may cause irritation to membranes of the mouth, throat, and gastrointestinal tract resulting in vomiting and/or cramps. Aspiration of vomit into the lungs may cause inflammation, and possible chemical pneumonitis, bronchopneumonia, or pulmonary edema.

INHALATION: Prolonged or repeated overexposure is anesthetic. May cause irritation of the respiratory tract, or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion or death. Irritation of the mucous membranes, coughing, and dyspnoea are also possible.

OTHER HEALTH HAZARD DATA

EFFECTS OF CHRONIC EXPOSURE: Reports have associated repeated and prolonged occupational overexposure to solvents with irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.

n-Hexane is toxic to the peripheral nerves, characterized by numbness, tingling, or pain in the extremities, progressively worsening of neuromuscular motor coordination (polyneuritis or polyneuropathy), and even partial paralysis.

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MEDICAL CONDITIONS AGGRAVATED: *May aggravate personnel with pre-existing disorders associated with any of the Target Organs.*
PRIMARY HAZARDS: *Neuropathy (hexane), Sensory Irritation (xylene), Narcosis (sec-butyl alcohol)*
CARCINOGEN DATA: *None of the ingredients are considered carcinogenic by OSHA, IARC, NTP, NIOSH or ACGIH.*
TARGET ORGANS: *Eyes, skin, respiratory system, central nervous system*

OSHA HAZARD CLASSIFICATIONS

| HEALTH HAZARD CLASSIFICATION | | PHYSICAL HAZARD CLASSIFICATION | | | | | | | |
|------------------------------|-------------------------------------|--------------------------------|-------------------------------------|----------------|-------------------------------------|------------------|--------------------------|----------------|--------------------------|
| Irritant | <input checked="" type="checkbox"/> | Sensitizer | <input checked="" type="checkbox"/> | Combustible | <input type="checkbox"/> | Explosive | <input type="checkbox"/> | Pyrophoric | <input type="checkbox"/> |
| Toxic | <input checked="" type="checkbox"/> | Highly Toxic | <input type="checkbox"/> | Flammable | <input checked="" type="checkbox"/> | Oxidizer | <input type="checkbox"/> | Water Reactive | <input type="checkbox"/> |
| Corrosive | <input type="checkbox"/> | Carcinogenic | <input type="checkbox"/> | Compressed Gas | <input checked="" type="checkbox"/> | Organic Peroxide | <input type="checkbox"/> | Unstable | <input type="checkbox"/> |

SECTION 4 FIRST AID MEASURES

INGESTION: *Do not induce vomiting! Immediately have the victim drink plenty of water. Do not give milk or digestible oils. Keep airways free. Contact a physician. Never give anything by mouth if victim is rapidly losing consciousness, unconscious, or convulsing.*
SKIN: *Remove with soap and water. Consult a physician if irritation continues. If large skin area is affected, remove contaminated clothing.*
EYE: *Immediately flush with plenty of clear water for at least 15 minutes. Make sure to flush under the eyelids. Consult a physician.*
INHALATION: *Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist or if unconscious.*
NOTES TO PHYSICIAN: *Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias (irregular beating) in persons exposed to high concentrations of n-Hexane. If used, monitor heart activity closely.*

SECTION 5 FIRE FIGHTING MEASURES

CONDITIONS OF FLAMMABILITY: *Heat, sparks, flame, red hot metal*
SUITABLE MEANS OF EXTINCTION: *Water, CO₂, dry chemical, or universal aqueous film forming foam.*
UNSUITABLE EXTINGUISHING MEDIA: *N/Av*
FLASH POINT AND METHOD OF DETERMINATION: *Propellant < 0 F, Tagged Closed Cup*
FLAMMABLE LIMITS: *Lower (LEL): 1.8% @ 25 C Upper (UEL): 9.5% @ 25 C*
AUTOIGNITION TEMPERATURE: *N/Av*
HAZARDOUS COMBUSTION PRODUCTS: *Oxides of Carbon (CO, CO₂), smoke, and vapors as products of incomplete combustion.*
EXPLOSION DATA - SENSITIVITY TO MECHANICAL IMPACT: *N/Av*
EXPLOSION DATA - SENSITIVITY TO STATIC DISCHARGE: *N/Av*
SPECIAL FIRE FIGHTING PROCEDURES: *Use water spray to cool fire exposed aerosol containers, as contents can rupture violently from heat developed pressure. Firemen should wear self-contained breathing apparatus.*
SPECIAL FIRE AND EXPLOSION HAZARDS: *Contents extremely flammable and under pressure.*

SECTION 6 ACCIDENTAL RELEASE MEASURES

CONTAINMENT PROCEDURES: *Product is an aerosol, therefore spills and leaks are unlikely. In case of rupture, released content should be contained as any other solvent spill.*
SPILL CLEANUP: *Spills from aerosol cans are unlikely and are generally of small volume. Large spills are therefore not normally considered a problem. In case of actual rupture, avoid breathing vapors and ventilate area well. Remove sources of ignition and use non-sparking equipment. Soak up material with inert absorbent and place in safety containers for proper disposal.*
SPECIAL INSTRUCTIONS: *Aerosol products represent a limited hazard and will not spill or leak unless ruptured. In case of rupture contents are generally evacuated from the can rapidly. Area should be ventilated immediately and continuous ventilate provided until all fumes and vapors have been removed. Aerosol cans should never be incinerated or burned. See Section 13 for disposal.*
REPORTING REQUIREMENTS: *Spills due to the rupture of a single aerosol can are generally below any regulatory reporting requirements. However, if larger spills somehow result, the reporting requirements of all governing agencies should be observed.*

SECTION 7 HANDLING AND STORAGE

HANDLING: *Avoid prolonged or repeated skin contact. Avoid breathing of vapors. Do not incinerate (burn) containers. Always replace overcap when not in use.*

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STORAGE: Storage of individual cans should be done in an area below 120F, and away from heat sources. Ensure can is in a secure place to prevent knocking over and accidental rupture. For storage of pallet quantities, compliance with NFPA 30B (Manufacture and Storage of Aerosol Products) is recommended. This product is classified as a Level 1 Aerosol.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES: Since this product is a mixture, an exposure value is not available. In determination of any exposure procedures, protection, or testing, use the lowest rated ingredient from Section 2.

ENGINEERING AND EXPOSURE CONTROLS: General ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Local exhaust ventilation or an enclosed handling system may be necessary to control air contamination below that of the lowest PEL rated ingredient from Section 2.

RESPIRATORY PROTECTION: A NIOSH approved respirator with an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. If respirators are needed, compliance with OSHA standard 29 CFR 1910.134 is necessary within the United States.

SKIN AND HAND PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or repeated contact could occur, use protective clothing impervious to the ingredients listed in Section 2.

EYE PROTECTION: Safety glasses with side shields are recommended as a minimum for any type of industrial chemical handling. Where eye contact with this material could occur, chemical splash proof goggles are recommended.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|---|
| BOILING POINT: N/D | MELTING/FREEZING POINT: . . . N/D |
| SPECIFIC GRAVITY (H₂O=1): . . . 0.651 g/cc | COEFF. OF WATER/OIL DIST.: . . . N/D |
| VAPOR PRESSURE: Approx 70 psig | pH: Neutral |
| VAPOR DENSITY: N/D | EVAPORATION RATE: Rapid |
| PHYSICAL STATE: Liquid Under Pressure | WATER SOLUBILITY: N/D |
| PERCENT VOLATILE: 91% Wt (98% Vol) Max | VOLATILITY: 4.670 lbs/gal (0.561 g/cc) |
| PERCENT VOC: 91% Wt (98% Vol) Max | MIR VALUE: 1.129 |
| VISCOSITY: N/D | ODOR THRESHOLD: N/D |
| APPEARANCE: Black Coating | ODOR: Paint-Like |

SECTION 10 STABILITY AND REACTIVITY

CONDITIONS OF INSTABILITY: . N/Av
STABILITY: Stable
HAZARD POLYMERIZATION: . . Not expected to occur
MATERIAL INCOMPATIBILITY: . Strong oxidizers, nitrates, alkalis, acids, chlorine, fluorine
CONDITIONS OF REACTIVITY: . Heat, sparks, flame, red hot metal
DECOMPOSITION PRODUCTS: Oxides of carbon and silicon. At temperatures of 300 F and above Formaldehyde can be formed.

SECTION 11 TOXICOLOGICAL INFORMATION

LD50 AND LC50 SPECIES/ROUTE INFORMATION:

| INGREDIENT | ORAL LD50 | DERMAL LD50 | INHALATION LC50 |
|--------------------------|------------------|---------------------|---------------------|
| Hexane | 28710 mg/kg, rat | >2000 mg/kg, rabbit | 48000 ppm /4hr, rat |
| Liquefied Petroleum Gas | N/Av | N/Av | 57.43% v/v, mice |
| Molybdenum Disulfide | >2000 mg/kg, rat | >2000 mg/kg, rat | N/Av |
| 1-Butanol, Titanium Salt | N/Av | N/Av | N/Av |
| sec-Butyl Alcohol | 6480 mg/kg, rat | >2000 mg/kg, rat | 16000 ppm /4hr, rat |

IRRITANCY OF PRODUCT: Hexane is classified as being irritating to the skin.
SENSITIZATION TO PRODUCT: Hexane is listed as a sensitizer
REPRODUCTIVE TOXICITY: . . . The European Union lists Hexane as a Cat.3 reproductive toxicant with possible risk of impaired fertility.
TERATOGENICITY: N/Av
MUTAGENICITY: N/Av
SYNERGISTIC PRODUCTS: . . . N/Av

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SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY:

| INGREDIENT | FISH LC50 | DAPHNIA EC50 | ALGAL IC50 | BACTERIAL EC50 |
|--------------------------|------------------|------------------|------------------|----------------|
| Hexane | 4 mg/l /24 hr | 2.1 mg/l /48 hr | 1079 mg/l /96 hr | N/Av |
| Liquefied Petroleum Gas | N/Av | N/Av | N/Av | N/Av |
| Molybdenum Disulfide | N/Av | N/Av | N/Av | N/Av |
| 1-Butanol, Titanium Salt | N/Av | N/Av | N/Av | N/Av |
| sec-Butyl Alcohol | 3670 mg/l /96 hr | 3750 mg/l /24 hr | N/Av | N/Av |

MOBILITY: N/Av

PERSISTANCE: N/Av

DEGRADIBILITY: N/Av

BIOACCUMULATION: N/Av

OTHER ECOLOGIC DATA: Do not allow to enter waters, waste water, or soil. This product contains Hexane which is toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

EFFECT ON OZONE LAYER: .. This product does not contain any ozone depleting ingredients.

SECTION 13 DISPOSAL CONSIDERATIONS

Hazard characteristics and regulatory waste stream classification can change with product use and location. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment, and/or disposal methodologies for spent materials and residues at the time of disposition. All waste material must be disposed of in compliance with the respective national, federal, state, and/or local regulations.

In the United States, an aerosol container that does not contain a significant amount of liquid would meet the definition of scrap metal (40 CFR 261.1(c)(6)), and would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv) if it is to be recycled. If containers are to be disposed of (not recycled) it must be managed under all applicable RCRA and state regulations.

SECTION 14 TRANSPORTATION INFORMATION

DOT SHIPPING INFORMATION (United States)

PROPER SHIPPING NAME: . Consumer Commodity

HAZARD CLASS: ORM-D

PACKAGING GROUP: None

UN or ID NUMBER: None

TDG SHIPPING INFORMATION (Canada)

PROPER SHIPPING NAME: . Aerosols, Flammable Ltd Qty

HAZARD CLASS: 2

PACKAGING GROUP: -

UN or ID NUMBER: UN1950

IMDG SHIPPING INFORMATION (International Ocean)

PROPER SHIPPING NAME: . Aerosols, Limited Quantity

CLASS: 2

PACKAGING GROUP: -

SUBSIDIARY RISK(S): -

UN or ID NUMBER: UN1950

PACKING INSTRUCTIONS: . P003

EmS NO.: F-D, S-U

STOWAGE: Category A

MFGA NO.: 620

ICAO/IATA SHIPPING INFORMATION (International Air)

PROPER SHIPPING NAME: Consumer Commodity

HAZARD CLASS: 9

PACKAGING GROUP: None

UN or ID NUMBER: ID8000

ADR SHIPPING INFORMATION (European Union)

PROPER SHIPPING NAME: Aerosols, Limited Quantity

ADR CLASS: 2

PACKAGING GROUP: -

UN or ID NUMBER: UN1950

CLASSIFICATION CODE: . LQ1

HAZARD ID NO.: -

NMFC DESCRIPTION (United States)

ITEM DESCRIPTION: Compounds, Lubricating

ITEM NO.: 50303

CLASS: 55

NORTH AMERICAN EMERGENCY RESPONSE GUIDE

ID NUMBER: 8000

GUIDE NUMBER: 171

SECTION 15 REGULATORY INFORMATION

UNITED STATES - FEDERAL:

| INGREDIENT | CAS NO | TSCA | RCRA | CERCLA | SARA 313 | CAA | CWA |
|-------------------------|------------|----------|------|--------|----------|-----|-----|
| Hexane | 110-54-3 | T | - | 5000 # | 49.9 % | XOV | - |
| Liquefied Petroleum Gas | 68476-85-7 | T | - | - | - | - | - |

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| INGREDIENT | CAS NO | TSCA | RCRA | CERCLA | SARA 313 | CAA | CWA |
|--------------------------|-----------|----------|------|--------|----------|-----|-----|
| Molybdenum Disulfide | 1317-33-5 | T | — | — | — | — | — |
| 1-Butanol, Titanium Salt | 5593-20-4 | T | — | — | — | — | — |
| sec-Butyl Alcohol | 78-92-2 | T | — | — | 1.0 % | — | — |

UNITED STATES - STATES:

| INGREDIENT | CA | DE | FL | MA | PA | MN | NJ | NY | WA |
|--------------------------|----|----------|----------|------------|----|-----|----------|----------|----------|
| Hexane | — | T | T | 2,4,5,6 | — | ANO | T | T | T |
| Liquefied Petroleum Gas | — | — | — | — | — | — | — | — | — |
| Molybdenum Disulfide | — | — | — | 2 | — | — | — | — | — |
| 1-Butanol, Titanium Salt | — | — | — | — | — | — | — | — | — |
| sec-Butyl Alcohol | — | T | T | 2,4,5,6 F9 | E | AO | — | T | T |

CANADA:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

All of the components in this product are listed on the Domestic Substances List (DSL).

WHMIS Classification: A, B5, D2A, D2B

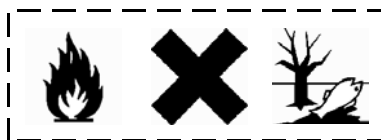
EUROPEAN UNION:

| INGREDIENT | EINECS | SYMBOL | RISK PHRASES | SAFETY PHRASES |
|--------------------------|-----------|----------|-------------------------|--------------------------|
| Hexane | 203-777-6 | F, N, Xi | 11-38-48/20-51/53-62-67 | 2-9-16-29-33-36/37-61-62 |
| Liquefied Petroleum Gas | 270-704-2 | F+ | 12 | 2-9-16 |
| Molybdenum Disulfide | 215-263-9 | — | — | — |
| 1-Butanol, Titanium Salt | 227-005-2 | — | — | — |
| sec-Butyl Alcohol | 201-158-5 | — | 10-67 | 2-7/9-13-24/25-26-46 |

SECTION 16 OTHER INFORMATION



Canadian Hazard Symbols



European Hazard Symbols

HMIS and NFPA RATINGS:

| | HEALTH | FLAMMABILITY | REACTIVITY | SPECIAL |
|-------------|--------|--------------|------------|---------|
| HMIS RATING | 1 | 4 | 0 | B |
| NFPA RATING | 1 | 4 | 0 | - |

R and S PHASES (European Union):

| CODE | RISK or SAFETY PHRASE |
|--------|--|
| R12 | Extremely Flammable |
| R38 | Irritating to skin |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment |
| R62 | Possible risk of impaired fertility |
| R67 | Vapours may cause drowsiness and dizziness |
| S2 | Keep out of the reach of children |
| S7/9 | Keep container tightly closed and in well ventilated place |
| S16 | Keep away from sources of ignition - No smoking |
| S24/25 | Avoid contact with skin and eyes |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice |
| S29 | Do not empty into drains |
| S33 | Take precautionary measures against static discharges |
| S36/37 | Wear suitable protective clothing and gloves |
| S46 | If swallowed, seek medical advice immediately |
| S61 | Avoid release to the environment. |
| S62 | If swallowed, do not induce vomiting: see medical advice immediately and show container or label |

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REVISIONS:

Revision 2 - 09/10/2001 – General update

Revision 3 - 10/12/2004 – New International MSDS format

Revision 4 - 02/17/2005 – Updated shipping information, corrected formula