Conforms to ANSI Z400.5-2004 Standard (United States, Canada, Mexico, Brazil).

Royco® aviation lubricants

Material Safety Data Sheet
ROYCO 81MS

1 . Product and company identification

Product name : ROYCO 81MS

Material uses : Lubricant.

Supplier/Manufacturer : Chemtura Canada Co. / Cie
700 Third Line
Oakville, ONT
Canada L6J 5A3
Tel: (905) 827-9087
Fax: (905) 827-2862

MSDS # : AC1077

MILSPEC# : DOD-L-25681

Validation date : 09/01/2007

MSDS authored by: : Atrion Regulatory Services, Inc.

In case of emergency : CHEMTREC: 800-424-9300 (United States)
CANUTEC (613) 996-6666 (Canada)

2 . Hazards identification

Physical state : Semi-solid (grease).

Odor : Odorless.

Hazard status : This material is classified as not hazardous under OSHA regulations in the United States, the WHMIS in Canada, the NOM-018-STPS-2000 in Mexico and Brazil NBR 14725:2001.

Emergency overview : No specific hazard.
USE WITH CARE.
Follow good industrial hygiene practice.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects : 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.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3 . Composition/information on ingredients

United States

Name	CAS number	%
Molybdenum disulfide	1317-33-5	30 - 60

Canada

Name	CAS number	%
Molybdenum disulfide	1317-33-5	30 - 60

Mexico

			Classification					
Name	UN number	IDLH	H	F	R	Special	CAS number	%
Molybdenum disulfide	Not regulated.	5000 mg/m³	0	0	0		1317-33-5	30 - 60

Brazil

Name	CAS number	%
Molybdenum disulfide	1317-33-5	30 - 60

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this 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 20 minutes. Get medical attention if irritation occurs.

Skin contact : Wash with soap and water. Get medical attention if irritation occurs.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : No specific fire or explosion hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

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

Hazardous combustion products : The final products of combustion are carbon oxides and water. Nitrogen, sulfur and metal oxides may also be produced in some cases.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : 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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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).

Methods for cleaning up : 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. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : 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 container tightly closed and sealed until ready for use. 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.

8 . Exposure controls/personal protection

United States

Molybdenum disulfide	**ACGIH TLV (United States, 1/2006).** TWA: 3 mg/m³, (as Mo) 8 hour(s). Form: Insoluble **OSHA PEL (United States, 11/2006).** TWA: 15 mg/m³, (as Mo) 8 hour(s). Form: Total dust

Canada

Molybdenum disulfide	**ACGIH TLV (United States, 1/2004).** TWA: 3 mg/m³ 8 hour(s). Form: Insoluble

Mexico

Molybdenum disulfide	**NOM-010-STPS (Mexico, 9/2000).** LMPE-CT: 20 mg/m³, (AS Mo) 15 minute(s). LMPE-PPT: 10 mg/m³, (AS Mo) 8 hour(s).

Brazil

Molybdenum disulfide	**ACGIH TLV (United States, 1/2004).** TWA: 3 mg/m³ 8 hour(s). Form: Insoluble

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eye protection : Safety glasses with side shields.

Skin protection/Body : Not applicable.

Respiratory protection : Not applicable.

Hand protection : Natural rubber (latex).

HMIS Code/Personal protective equipment : B

Personal protection in case of a large spill : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear MSHA/NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Hygiene measures : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.

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.

9 . Physical and chemical properties

Physical state : Semi-solid (grease).

Odor : Odorless.

Specific gravity : >1.00 (Water = 1)

Flash point : Open cup: >300°C (572°F) (Cleveland.).

10 . Stability and reactivity

Stability and reactivity : The product is stable.

Conditions of instability : None known.

Incompatibility with various substances : 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.

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

Conditions of reactivity : None known.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test / Route	Species	Result
Molybdenum disulfide	LD50 Dermal	Rat	>2 g/kg
	LD50 Oral	Rat	>2 g/kg

Acute Effects

Eyes : No known significant effects or critical hazards.

Skin : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Potential chronic health effects : Carcinogenic effects: Not applicable.
Mutagenic effects: Not applicable.
Teratogenic effects: Not applicable.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

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

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

NAERG : Not applicable.

Regulatory information

UN/ IMDG/ IATA DOT/ TDG : Not regulated.

15 . Regulatory information

United States

HCS Classification : Not regulated.

U.S. Federal regulations : TSCA 8(b) inventory: All components listed.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 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 flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations : **Connecticut Carcinogen Reporting**: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.

Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: Molybdenum disulfide
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: Molybdenum disulfide
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 : No products were found.

Canada

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Canadian lists : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory : **Canada inventory:** All components are listed or exempted.

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

Mexico

Classification :

HAZARD RATINGS
4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal

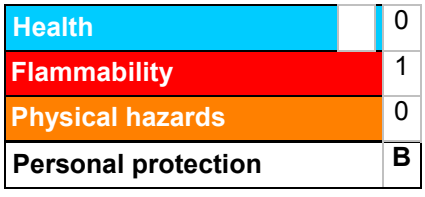
This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

The Restriction of Hazardous Substances in Electrical and Electronic Equipment (ROHS) Directive (2002/95/EC) : In compliance.

16 . Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

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



HAZARD RATINGS
4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal

See section 8 for more detailed information on personal protection.

The customer is responsible for determining the PPE code for this material.

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

References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994. Brazil NBR 14725:2001.

Responsible name : **Mr. Max Naggar**

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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.