

SAFETY DATA SHEET



ROYCO 22MS MIL-G-81827A

Version: 1.6

Revision Date: 07/11/2018

Print Date: 07/20/2018

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: ROYCO 22MS MIL-G-81827A
HIGH LOAD AIRCRAFT GREASE

Product Use Description: Lubricant

Synonyms: Synthetic Lubricant Formulation

Company: Manufacturer
Anderol Specialty Lubricants, a division of Lanxess Solutions US Inc.
215 Merry Lane
East Hanover, NJ
07936
United States of America (USA)

Telephone: +1 203-573-4596, Toll Free: +1 888-263-3765

Emergency telephone number: CHEMTREC: (24 hours) 800-424-9300
:
For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by Product Safety Department
(US) +1 866-430-2775
MSDSRequest@lanxess.com

Recommended use of the chemical and restrictions on use

Recommended use : Lubricant

Restrictions on use : Reserved for industrial and professional use.

SECTION 2. HAZARDS IDENTIFICATION

Form	viscous liquid
Colour	black
Odour	mild hydrocarbon-like

GHS Classification

Skin sensitisation : Category 1
Carcinogenicity : Category 1B
Specific target organ toxicity - repeated exposure : Category 2
Acute aquatic toxicity : Category 2
Chronic aquatic toxicity : Category 3

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GHS label elements

Signal word : **Danger**

Hazard pictograms :

Hazard statements : H317 May cause an allergic skin reaction.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Other hazards : None

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Self-ignitable : No data available

Carcinogenicity:

IARC

Group 2A: Probably carcinogenic to humans
sodium nitrite 7632-00-0

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OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	CAS-No.	Concentration (%)
molybdenum disulphide	1317-33-5	>= 1 - < 5 %
Graphite	7782-42-5	>= 1 - < 5 %
sodium nitrite	7632-00-0	>= 2.5 - < 5 %
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1	>= 1 - < 2.5 %
pentaerythritol	115-77-5	>= 1 - < 5 %
NJTS#: 46728100000-0002 - Proprietary amine		>= 1 - < 2.5 %
(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine	110-25-8	>= 0.1 - < 0.25 %

SECTION 4. FIRST AID MEASURES

- If inhaled : Remove to fresh air.
Aspiration may cause pulmonary oedema and pneumonitis.
If breathing is difficult, give oxygen.
If symptoms persist, call a physician.
- In case of skin contact : Wash off with warm water and soap.
If skin irritation persists, call a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,
for at least 15 minutes.
Obtain medical attention.
- If swallowed : Obtain medical attention.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : (on small fires)

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Carbon dioxide (CO2)
Dry chemical
Dry sand
Extinguishing media - large fires
Foam
Water mist

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not use a solid water stream as it may scatter and spread fire.
Burning produces irritant fumes.
Exposure to decomposition products may be a hazard to health.

Specific extinguishing methods : Cool containers/tanks with water spray.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear suitable protective equipment.

Environmental precautions : Should not be released into the environment.
Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up : Scrape up. Pick up and transfer to properly labelled containers.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with skin, eyes and clothing.
Wear suitable protective equipment.
Keep tightly closed.
Protect from contamination.

Conditions for safe storage : Keep tightly closed in a dry, cool and well-ventilated place.

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		PEL (respirable dust fraction)	5 mg/m3	CAL PEL
		PEL (Respirable dust)	2.5 mg/m3	CAL PEL
pentaerythritol	115-77-5	TWA	10 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		PEL (Total dust)	10 mg/m3	CAL PEL
		PEL (respirable dust fraction)	5 mg/m3	CAL PEL
NJTS#: 46728100000-0002 - Proprietary amine		TWA	10 ml/m3	ACGIH

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
Respirator with combination filter for vapour/particulate (EN 141)

Hand protection
Remarks : Impervious gloves

Eye protection : Safety glasses with side-shields
or
Tightly fitting safety goggles

Skin and body protection : Impervious clothing

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: viscous liquid
Color	: black
Odor	: mild hydrocarbon-like
Odour Threshold	: No data available
pH	: No data available
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Evaporation rate	: No data available
Flash point	: > 230 °C Method: open cup
Auto-flammability	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: Not applicable
Relative vapour density	: No data available
Relative density	: 0.8
<u>Solubility(ies)</u>	
Water solubility	: negligible
Solubility in other solvents	: partly soluble
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: not determined
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Molecular weight	: No data available

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Contamination
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: Carbon oxides Oxides of calcium Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg Remarks: Information given is based on data obtained from similar substances.
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg

pentaerythritol:

Acute oral toxicity	: LD50 (Rat): 10,000 mg/kg
Acute inhalation toxicity	: LC0 (Rat): > 11 mg/l Exposure time: 6 h Test atmosphere: dust/mist Test substance: see user defined free text Remarks: Information given is based on data obtained from similar substances.
Acute dermal toxicity	: LD50 (Rabbit): 10,000 mg/kg

NJTS#: 46728100000-0002 - Proprietary amine:

Acute oral toxicity	: LD50 (Rat): 1,625 mg/kg
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Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

pentaerythritol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

GLP: no

Remarks: Information given is based on data obtained from similar substances.

NJTS#: 46728100000-0002 - Proprietary amine:

Species: Rabbit

Method: Draize Test

Result: No skin irritation

Serious eye damage/eye irritation

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

pentaerythritol:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

GLP: no

Remarks: Information given is based on data obtained from similar substances.

NJTS#: 46728100000-0002 - Proprietary amine:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 406

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NJTS#: 46728100000-0002 - Proprietary amine:

Test Type: Maximisation Test

Species: Guinea pig

Result: Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type: Patch Test

Species: Human

Result: Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type: Maximisation Test

Species: Guinea pig

Result: Probability or evidence of low to moderate skin sensitisation rate in humans

Germ cell mutagenicity

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Germ cell mutagenicity - Assessment : Not mutagenic in Ames Test

pentaerythritol:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
GLP: no
Remarks: Information given is based on data obtained from similar substances.

: Test Type: In Vitro mammalian Cell Gene Mutation Test
Metabolic activation: with and without metabolic activation
Result: negative
GLP: no
Remarks: Information given is based on data obtained from similar substances.

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

NJTS#: 46728100000-0002 - Proprietary amine:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

: Test Type: Chinese Hamster Ovary (CHO)
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: in vivo assay
Species: Mouse (male)
Result: negative

Germ cell mutagenicity - : Animal testing did not show any mutagenic effects., Tests on

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Assessment bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

Components:

NJTS#: 46728100000-0002 - Proprietary amine:

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

IARC

Group 2A: Probably carcinogenic to humans

sodium nitrite

7632-00-0

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

pentaerythritol:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - repeated exposure

Components:

molybdenum disulphide:

Exposure routes: Oral

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

pentaerythritol:

Exposure routes: Oral

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

NJTS#: 46728100000-0002 - Proprietary amine:

Exposure routes: Oral

Target Organs: Liver, Kidney

Assessment: May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Product:

No aspiration toxicity classification

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Further information

Product:

Remarks: No data is available on the product itself.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: No data available

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 71 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 51 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EbC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

pentaerythritol:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 600 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Algae): > 1,000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 1,000 mg/l
End point: Survival
Exposure time: 21 d

NJTS#: 46728100000-0002 - Proprietary amine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.44 mg/l

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Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.68 mg/l
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.02 mg/l
Exposure time: 21 d
Analytical monitoring: yes

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Protozoa): 2 mg/l
Exposure time: 48 h
EC50 (Bacteria): > 10,000 mg/l
Exposure time: 3 h

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Biodegradability : Result: According to the results of tests of biodegradability this product is not readily biodegradable.
Method: CO2 Evolution Test

pentaerythritol:

Biodegradability : aerobic
Inoculum: activated sludge
Result: According to the results of tests of biodegradability this product is not readily biodegradable.
Biodegradation: 0 %
Exposure time: 14 d

NJTS#: 46728100000-0002 - Proprietary amine:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: According to the results of tests of biodegradability this

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product is not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301
GLP: yes

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Partition coefficient: n-
octanol/water : log Pow: > 7

pentaerythritol:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0.3 - 0.6
Exposure time: 42 d
Temperature: 68 °F / 20 °C
Concentration: 10 mg/l

Partition coefficient: n-
octanol/water : log Pow: -1.69

NJTS#: 46728100000-0002 - Proprietary amine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 427 - 2,730
Exposure time: 56 d
Temperature: 77 °F / 25 °C
Concentration: 0.1 mg/l

Partition coefficient: n-
octanol/water : log Pow: 4.28

Mobility in soil

Product:

Mobility : Remarks: No data available

Other adverse effects

Product:

Results of PBT and vPvB
assessment : This mixture contains no substance considered to be
persistent, bioaccumulating and toxic (PBT).

Additional ecological : There is no data available for this product.

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information

Harmful to aquatic life with long lasting effects.

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Additional ecological information

: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do not allow material to contaminate ground water system.
Do not flush into surface water or sanitary sewer system.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues

: In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

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Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium nitrite	7632-00-0	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Respiratory or skin sensitisation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:
sodium nitrite 7632-00-0

US State Regulations

California Prop. 65

WARNING: This product can expose you to chemicals including aniline, 1-naphthylamine, 2-naphthylamine, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Please note that Section 3 of this document lists only the hazardous components required by the specific country or region hazard communication regulations. The chemical identifiers listed in Section 3 are used globally for hazard communication purposes and may not reflect those used for chemical inventory coverage in a particular country or region. The chemical inventory information given in Section 15 of this document applies to the product as a whole and should be used when evaluating inventory compliance.

The components of this product are reported in the following inventories:

DSL	This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
AICS	On the inventory, or in compliance with the inventory
NZIoC	Not in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
TCSI	Not in compliance with the inventory
US.TSCA	On TSCA Inventory

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SECTION 16. OTHER INFORMATION

Further information

Other Emergency Phone Number

<u>Latin America:</u>	Brazil	+55 113 711 9144
	All other countries	+44 (0) 1235 239 670
<u>Mexico:</u>		+52 555 004 8763

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.