

Safety data sheet
According to 1907/2006 EEC Article 31

Printing date: 12.09.2018

Version: 5

Revision: 12.09.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Muc Off MO94
- **Article number:** 934 / 932
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Lubricant
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Muc-Off Ltd
Unit 1, 1st Floor, Concept Office Park
Innovation Close, Poole, Dorset, BH12 4QT
Tel: +44 (0) 1202 307790
- **Further information obtainable from:** Research & Development: info@muc-off.com
- **1.4 Emergency telephone number:** During normal business hours: Tel: +44 (0) 1202 307790

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02



GHS07

- **Signal word** Danger
- **Hazard-determining components of labelling:**
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics
- **Hazard statements**
H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.
H336 May cause drowsiness or dizziness.
- **Precautionary statements**
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P261 Avoid breathing mist/vapours/spray.

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- P271 Use only outdoors or in a well-ventilated area.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Additional information:**
 EUH066 Repeated exposure may cause skin dryness or cracking.
 Buildup of explosive mixtures possible without sufficient ventilation.
 - **2.3 Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Active substance with propellant

- **Dangerous components:**

EC number: 926-141-6 Reg.nr.: 01-2119456620-43	Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics Asp. Tox. 1, H304	25-<50%
CAS: 106-97-8 EINECS: 203-448-7 Reg.nr.: 01-2119474691-32	butane (containing < 0.1% butadiene (203-450-8)) Flam. Gas 1, H220; Press. Gas (Comp.), H280	10-<25%
CAS: 64742-48-9 EC number: 919-857-5 Reg.nr.: 01-2119463258-33	Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics Flam. Liq. 3, H226; Asp. Tox. 1, H304; STOT SE 3, H336	10-<25%
CAS: 74-98-6 EINECS: 200-827-9 Reg.nr.: 01-2119486944-21	propane Flam. Gas 1, H220; Press. Gas (Comp.), H280	10-<25%
CAS: 68608-26-4 EINECS: 271-781-5 Reg.nr.: 01-2119527859-22	Sulfonic acids, petroleum, sodium salts Eye Irrit. 2, H319	1-<2.5%

- **Additional information:**

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
 No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
 No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 - Water haze
 - Fire-extinguishing powder
 - Carbon dioxide
 - Alcohol resistant foam
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mount respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
 - Do not allow product to reach sewage system or any water course.
 - Inform respective authorities in case of seepage into water course or sewage system.
 - Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
 - Ensure adequate ventilation.
 - Do not flush with water or aqueous cleansing agents
- **6.4 Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:**
 - Do not spray onto a naked flame or any incandescent material.
 - Keep ignition sources away - Do not smoke.
 - Protect against electrostatic charges.
 - Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 - Store in a cool location.
 - Observe official regulations on storing packagings with pressurised containers.
- **Information about storage in one common storage facility:**
 - Observe official regulations on storing packagings with pressurised containers.
- **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed receptacles.
 - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

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· 8.1 Control parameters**· Ingredients with limit values that require monitoring at the workplace:****106-97-8 butane (containing < 0.1% butadiene (203-450-8))**

WEL	Short-term value: 1810 mg/m ³ , 750 ppm Long-term value: 1450 mg/m ³ , 600 ppm Carc (if more than 0.1% of buta-1.3-diene)
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74-98-6 propane

OEL	Short-term value: 3600 mg/m ³ , 2000 ppm Long-term value: 1800 mg/m ³ , 1000 ppm
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· DNELs**64742-48-9 Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics**

Oral	DNEL Long term-systemic	125 mg/kg bw/day (Consumer)
Dermal	DNEL Long term-systemic	125 mg/kg bw/day (Consumer) 208 mg/kg bw/day (Worker)
Inhalative	DNEL Long term-systemic	185 mg/m ³ (Consumer) 871 mg/m ³ (Worker)

· Additional Occupational Exposure Limit Values for possible hazards during processing:**Oil mist**

WEL	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³
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· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls**· Personal protective equipment:****· General protective and hygienic measures:**

Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Filter AX/P2

Use suitable respiratory protective device in case of insufficient ventilation.

Filter A/P2

· Protection of hands:

Wear gloves for the protection against chemicals according to EN 374



Protective gloves

Solvent resistant gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.5 mm

· Penetration time of glove material

For continuous contact we recommend gloves with breakthrough time of at least 240 minutes, with the preference given to a breakthrough time greater than 480 minutes. For short-term or splash guard we recommend the same. We are aware that suitable gloves that offer this level of protection may not be available. In that case, a shorter breakthrough time are acceptable as long as the procedures governing maintenance and timely replacement are followed. The thickness of the gloves is not a good measure of the resistance of the gloves against a chemical substance, because this depends on the exact composition of the material from which

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the gloves are made.

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Safety glasses



Tightly sealed goggles

· **Body protection:** Use protective suit. (EN-13034/6)

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**

· Form:	Aerosol
· Colour:	Yellow
· Odour:	Slightly sweetish
· Odour threshold:	Not determined.

· **pH-value:** Not determined.· **Change in condition**

· Melting point/freezing point:	Undetermined.
· Initial boiling point and boiling range:	-44.5 °C

· **Flash point:** -97 °C· **Flammability (solid, gas):** Not applicable.· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.· **Explosion limits:**

· Lower:	0.5 Vol %
· Upper:	10.9 Vol %

· **Vapour pressure at 20 °C:** 8,300 hPa

· Density at 20 °C:	0.71 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not applicable.

· **Solubility in / Miscibility with water:**

Not miscible or difficult to mix.

· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· **Solvent content:**· **Organic solvents:** 82.7 %· **Solids content:** 0.6 %· **9.2 Other information** No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC50(8h)	>5,000 mg/m ³ (rat)

64742-48-9 Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC50 (4h)	4,951 mg/m ³ (rat)

68608-26-4 Sulfonic acids, petroleum, sodium salts

Oral	LD50	>6,000 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

EL0 (48h)	1,000 mg/l (Daphnia magna)
EL0(72h)	1,000 mg/l (Pseudokirchneriella subcapitata)
LL0(96h)	1,000 mg/l (Oncorhynchus mykiss (96h))

64742-48-9 Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

EL0 (48h)	1,000 mg/l (Daphnia magna)
NOELR (72h)	100 mg/l (Pseudokirchneriella subcapitata)
EL50 (72h)	>1,000 mg/l (Pseudokirchneriella subcapitata)

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LL50 (96h) >1,000 mg/l (Oncorhynchus mykiss (96h))

- **12.2 Persistence and degradability** Biodegradable > 99% (OECD 301-B)
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, ADN, IMDG, IATA** UN1950
- **14.2 UN proper shipping name**
- **ADR, ADN** UN1950 AEROSOLS
- **IMDG** AEROSOLS
- **IATA** AEROSOLS, flammable
- **14.3 Transport hazard class(es)**
- **ADR**
-
- **Class** 2 5F Gases.
- **Label** 2.1
- **ADN**
- **ADN/R Class:** 2 5F
- **IMDG, IATA**
-
- **Class** 2.1
- **Label** 2.1
- **14.4 Packing group**
- **ADR, IMDG, IATA** Void
- **14.5 Environmental hazards:**
- **Marine pollutant:** No

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<ul style="list-style-type: none"> · 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Code · Segregation Code 	<p>Warning: Gases.</p> <p>-</p> <p>F-D,S-U</p> <p>SW1 Protected from sources of heat.</p> <p>SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.</p> <p>SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.</p>
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code 	
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>1L</p> <p>Code: E0</p> <p>Not permitted as Excepted Quantity</p> <p>2</p> <p>D</p> <p>1L</p> <p>Code: E0</p> <p>Not permitted as Excepted Quantity</p> <p>UN 1950 AEROSOLS, 2.1</p>

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category P3a FLAMMABLE AEROSOLS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 150 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations:**

Class	Share in %
NK	75-<100
- **VOC-CH** 82.71 %
- **VOC-EU** 586.5 g/l
- **Danish MAL Code** 5-3
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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- **Relevant phrases**

H220 Extremely flammable gas.
 H226 Flammable liquid and vapour.
 H280 Contains gas under pressure; may explode if heated.
 H304 May be fatal if swallowed and enters airways.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.

- **Department issuing SDS:** Research & Development

- **Contact:** info@muc-off.com

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

MAL-Code: Måleteknisk Arbejdshygiejnisk Luftbehov (Regulation for the labeling concerning inhalation hazards, Denmark)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Gas 1: Flammable gases – Category 1

Aerosol 1: Aerosols – Category 1

Press. Gas (Comp.): Gases under pressure – Compressed gas

Flam. Liq. 3: Flammable liquids – Category 3

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Asp. Tox. 1: Aspiration hazard – Category 1

- *** Data compared to the previous version altered. ***

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