

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

1 Identification

- **Product identifier**
- **Trade name:** Muc-Off MO94
- **Article number:** 930,932US,930CA
- **Application of the substance / the mixture** Lubricant
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Muc-Off Ltd
UK - Muc-Off Ltd, Unit 23 Branksome Business Park, Bourne Valley Road, Poole, Dorset, BH12 1DW
- EU- Muc-Off Ltd, Unit 3D North Point House, North Point Business Park, New Mallow Road, Cork, Ireland, T23 AT2P Tel: +44(0)1202 307790 Email: info@muc-off.com
- **Information department:** Research & Development/E-mail: info@muc-off.com
- **Emergency telephone number:** Health Canada toll-free number, 1-844 POISON-X, or 1-844-764-7669

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Aerosols 1

H222 Extremely flammable aerosol.



GHS04 Gas cylinder

Gases under Pressure - Liquefied gas H280 Contains gas under pressure; may explode if heated.



GHS08 Health hazard

Aspiration Hazard 1

H304 May be fatal if swallowed and enters airways.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS04



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Hydrocarbons, C14-C18, n-alkane, iso-alkane, cyclic, <2% aromates

Hydrocarbons, C9-C11, n-alkanes, iso-alkanes, cyclic, < 2% aromatics

Solvent naphtha (petroleum), light arom. Benzene<0.1%

- **Hazard statements**

H222 Extremely flammable aerosol.

H280 Contains gas under pressure; may explode if heated.

H304 May be fatal if swallowed and enters airways.

- **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 1)

- P211 Do not spray on an open flame or other ignition source.
 P251 Pressurized container: Do not pierce or burn, even after use.
 P260 Do not breathe mist/vapours/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves / eye protection.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P312 Call a poison center/doctor if you feel unwell.
 P331 Do NOT induce vomiting.
 P403 Store in a well-ventilated place.
 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.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **WHMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	4	Fire = 4
REACTIVITY	3	Reactivity = 3

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Active substance with propellant

- **Dangerous components:**

1174522-18-9	Hydrocarbons, C14-C18, n-alkane, iso-alkane,cyclic,<2% aromates	50-<75%
	Hydrocarbons, C9-C11, n-alkanes, iso-alkanes, cyclic, < 2% aromatics	10-<25%
74-98-6	propane	2.5-<10%
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	1-<2.5%
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	0.1-<1%

4 First-aid measures

- **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; immediately call for medical help.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 2)

5 Fire-fighting measures

- **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
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mount respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
- **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.
- **Methods and material for containment and cleaning up:**
 - Ensure adequate ventilation.
 - Do not flush with water or aqueous cleansing agents
- **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.
- **Protective Action Criteria for Chemicals**

· PAC-1:

74-98-6	propane	5500* ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	5500* ppm
577-11-7	Docusate sodium	5.7 mg/m ³
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	5500* ppm
95-63-6	1,2,4-trimethylbenzene	140 ppm
	Reaction mass or ethylbenzene and xylene	130 ppm
108-67-8	mesitylene	140 ppm
104-76-7	2-Ethyl-1-hexanol	0.1 ppm
526-73-8	1,2,3-trimethylbenzene	140 ppm
91-64-5	Coumarin	0.88 mg/m ³
98-82-8	isopropylbenzene	50 ppm
103-65-1	propylbenzene	3.7 ppm
65-85-0	Benzoic acid	13 mg/m ³
64-17-5	ethanol	1,800 ppm

· PAC-2:

74-98-6	propane	17000** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	17000** ppm
577-11-7	Docusate sodium	63 mg/m ³
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	17000** ppm
95-63-6	1,2,4-trimethylbenzene	360 ppm
	Reaction mass or ethylbenzene and xylene	920* ppm

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 3)

108-67-8	mesitylene	360 ppm
104-76-7	2-Ethyl-1-hexanol	100 ppm
526-73-8	1,2,3-trimethylbenzene	360 ppm
91-64-5	Coumarin	9.7 mg/m ³
98-82-8	isopropylbenzene	300 ppm
103-65-1	propylbenzene	41 ppm
65-85-0	Benzoic acid	140 mg/m ³
64-17-5	ethanol	3300* ppm

· PAC-3:

74-98-6	propane	33000*** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	53000*** ppm
577-11-7	Docusate sodium	380 mg/m ³
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	53000*** ppm
95-63-6	1,2,4-trimethylbenzene	480 ppm
	Reaction mass of ethylbenzene and xylene	2500* ppm
108-67-8	mesitylene	480 ppm
104-76-7	2-Ethyl-1-hexanol	200 ppm
526-73-8	1,2,3-trimethylbenzene	480 ppm
91-64-5	Coumarin	58 mg/m ³
98-82-8	isopropylbenzene	730 ppm
103-65-1	propylbenzene	240 ppm
65-85-0	Benzoic acid	830 mg/m ³
64-17-5	ethanol	15000* ppm

7 Handling and storage

· Handling:

· **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.

· **Information about protection against explosions and fires:**

Do not spray on a naked flame or any incandescent material.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Pressurized 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.

· **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 pressurized containers.

· **Information about storage in one common storage facility:**

Observe official regulations on storing packagings with pressurized containers.

· **Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 4)

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

74-98-6 propane	
PEL	Long-term value: 1800 mg/m ³ , 1000 ppm
REL	Long-term value: 1800 mg/m ³ , 1000 ppm
TLV	see Appendix F Minimal oxygen content (D, EX)

106-97-8 butane (containing < 0.1% butadiene (203-450-8), Note K)	
REL	Long-term value: 1900 mg/m ³ , 800 ppm
TLV	Short-term value: 1000 ppm (EX)

75-28-5 isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	
TLV	Short-term value: 1000 ppm (EX)

- **Additional information:** The lists that were valid during the creation were used as basis.

- **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.

General ventilation

- **Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation.

Filter A2/P2

- **Protection of hands:**

Draag handschoenen voor bescherming tegen chemicaliën volgens 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**

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.

Full skin covering antistatic, chemical and oil resistant clothing and safety shoes are recommended. (EN1149; EN340&EN ISO 13688; EN13034-6).

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 5)

- **Limitation and supervision of exposure into the environment**
Use a suitable container to prevent environmental contamination.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

· Form:	Aerosol
· Color:	Light yellow
· Odor:	Slightly sweetish
· Odor threshold:	Not determined.

- **pH-value:** Mixture is non-polar/aprotic.

- **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	-44.5 °C (-48.1 °F)

- **Flash point:** -97 °C (-142.6 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Auto igniting:** >200 °C (>392 °F)

- **Decomposition temperature:** Not determined.

- **Ignition temperature:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

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

- **Vapor pressure at 20 °C (68 °F):** 3000 hPa (2250.2 mm Hg)

- **Density at 20 °C (68 °F):** 0.782 g/cm³ (6.526 lbs/gal)

- **Relative density** Not determined.

- **Vapor 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:	25.0 %
· Water:	0.1 %

- **Solids content:** 0.9 %

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 6)

- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:

1174522-18-9 Hydrocarbons, C14-C18, n-alkane, iso-alkane, cyclic, <2% aromates

Oral	LD50	>5000 mg/kg (Rat)
Dermal	LD50	>3160 mg/kg (Rabbit)
Inhalative	LC50 (4h)	>5000 mg/l (Rat)
	LC50 (4h)	>5000 mg/m3 (Rat)

Hydrocarbons, C9-C11, n-alkanes, iso-alkanes, cyclic, < 2% aromatics

Oral	LD50	>5000 mg/kg (Rat) (Acute Oral Toxicity)
Dermal	LD50	3160 mg/kg (Rabbit) (Acute Dermal Toxicity)
Inhalative	LC50 (4h)	>4951 mg/l (Rat)
	LC50 (4h)	4951 mg/m3 (Rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

Carcinogenic categories

IARC (International Agency for Research on Cancer)

	Reaction mass or ethylbenzene and xylene	3
91-64-5	Coumarin	3
98-82-8	isopropylbenzene	2B
64-17-5	ethanol	1

NTP (National Toxicology Program)

98-82-8	isopropylbenzene	R
---------	------------------	---

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity:

1174522-18-9 Hydrocarbons, C14-C18, n-alkane, iso-alkane, cyclic, <2% aromates

NOELR (72h)	3198 mg/l (Skeletonema costatum)
EL50 (48h)	mg/l (Human)
	>3193 mg/l (Invertebrate)
EL50 (72h)	>3198 mg/l (Skeletonema costatum)

Hydrocarbons, C9-C11, n-alkanes, iso-alkanes, cyclic, < 2% aromatics

EL0 (48h)	1000 mg/l (Daphnia magna)
NOELR (72h)	100 mg/l (Pseudokirchneriella subcapitata)
EL50 (72h)	>1000 mg/l (Pseudokirchneriella subcapitata)

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 7)



LL50 (96h) >1000 mg/l (Onc)

- **Persistence and degradability** Not easily biodegradable
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

- **UN-Number**
- **DOT, ADR, ADN, IMDG, IATA** UN1950
- **UN proper shipping name**
- **DOT** Aerosols, flammable
- **ADR, ADN** UN1950 AEROSOLS
- **IMDG** AEROSOLS
- **IATA** AEROSOLS, flammable
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 2.1 Gases
- **Label** 2.1
- **ADR**
- 
- **Class** 2.5F Gases
- **Label** 2.1

(Contd. on page 9)

-US-

Safety Data Sheet

acc. to OSHA HCS


Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 8)

· ADN	
· ADN/R Class:	2.5F

· IMDG, IATA	
	
· Class	2.1 Gases
· Label	2.1
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Gases
· Hazard identification number (Kemler code): -	
· EMS Number:	F-D,S-U
· Stowage Code	SW1 Protected from sources of heat. 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.
· Segregation Code	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.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity

· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· UN "Model Regulation":	UN 1950 AEROSOLS, 2.1

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· Section 355 (extremely hazardous substances):

None of the ingredient is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

1174522-18-9 Hydrocarbons, C14-C18, n-alkane, iso-alkane,cyclic,<2% aromates

*

(Contd. on page 10)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 9)

	Hydrocarbons, C9-C11, n-alkanes, iso-alkanes, cyclic, < 2% aromatics	*
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic <0.1% Benzene (IP 346 < 3%)	ACTIVE
74-98-6	propane	ACTIVE
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	ACTIVE
68608-26-4	Sulfonic acids, petroleum, sodium salts	ACTIVE
577-11-7	Docosate sodium	ACTIVE
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	ACTIVE
64742-95-6	Solvent naphtha (petroleum), light arom. Benzene<0.1%	*

· **Hazardous Air Pollutants**

98-82-8 isopropylbenzene

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenicity categories**· **EPA (Environmental Protection Agency)**

95-63-6	1,2,4-trimethylbenzene	II
	Reaction mass or ethylbenzene and xylene	I
108-67-8	mesitylene	II
526-73-8	1,2,3-trimethylbenzene	II
98-82-8	isopropylbenzene	D, CBD
65-85-0	Benzoic acid	D

· **TLV (Threshold Limit Value)**

	Reaction mass or ethylbenzene and xylene	A4
76-22-2	1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one	A4
80-56-8	alpha-Pinene	A4
64-17-5	ethanol	A3
127-91-3	beta-Pinene	A4

· **MAK (German Maximum Workplace Concentration)**

64-17-5	ethanol	5
---------	---------	---

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**· **Disturbance regulations:**

Class	Share in %
NK	25-<50

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

US

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/30/2023

Reviewed on 06/30/2023

Trade name: Muc-Off MO94

(Contd. of page 10)

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.

· **Classification according to Regulation (EC) No 1272/2008**

Fysiske og kjemiske egenskaper: Klassifiseringen er basert på resultatene av blandingene som er testet. Helsefarer, Miljøfarer: Metoden for klassifisering av blandinger basert på blandingens bestanddeler (sumformel).

· **Contact:** ing.info@muc-off.com

· **Date of preparation / last revision** 06/30/2023

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Aerosols 1: Aerosols – Category 1

Gases under Pressure - Liquefied gas: Gases under pressure – Liquefied gas

Aspiration Hazard 1: Aspiration hazard – Category 1

US