



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 Motorcycle All Weather Chain Lube
- **Article number:** 637US
- **UFI:** AGW1-N00V-M00G-T1XS
- **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:** CHEMTREC: 1-800-424-9300 24HR

* **2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Aerosols 1

H222 Extremely flammable aerosol.



GHS08 Health hazard

Aspiration Hazard 1

H304 May be fatal if swallowed and enters airways.



GHS07

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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

Pentane

Naphthenic acids, zinc salts, basic

- **Hazard statements**

H222 Extremely flammable aerosol.

H317 May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

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Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 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.
- P273 Avoid release to the environment.
- P280 Wear protective gloves / eye protection.
- P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- P312 Call a poison center/doctor if you feel unwell.
- 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)



Health = 0
Fire = 4
Reactivity = 0

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:

109-66-0	Pentane	25-<50%
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	10-<25%
74-98-6	propane	10-<25%
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	1-<2.5%
84418-50-8	Naphthenic acids, zinc salts, basic	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.

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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:

109-66-0	Pentane	3000* ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	5500* ppm
74-98-6	propane	5500* ppm
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	5500* ppm

· PAC-2:

109-66-0	Pentane	33000*** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	17000** ppm
74-98-6	propane	17000** ppm
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	17000** ppm

· PAC-3:

109-66-0	Pentane	200000*** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	53000*** ppm
74-98-6	propane	33000*** ppm
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	53000*** 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.

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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.
- **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 remaining constituent has no known exposure limits.

109-66-0 Pentane

PEL	Long-term value: 2950 mg/m ³ , 1000 ppm
REL	Long-term value: 350 mg/m ³ , 120 ppm Ceiling limit value: 1800* mg/m ³ , 610* ppm *15-min
TLV	Long-term value: 1000 ppm

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)

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)

75-28-5 isobutane (containing < 0,1 % butadiene (203-450-8), Note K)

TLV	Short-term value: 1000 ppm (EX)
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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
General ventilation
- **Breathing equipment:**
Use suitable respiratory protective device in case of insufficient ventilation.
Filter A2/P2

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· **Protection of hands:**



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).

· **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 brown
· Odor:	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:** 285 °C (545 °F)

· **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:** 1.4 Vol %

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Upper:	10.9 Vol %
· Vapor pressure at 20 °C (68 °F):	8300 hPa (6225.5 mm Hg)
· Density at 20 °C (68 °F):	0.649 g/cm ³ (5.416 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:	73.8 %
· Solids content:	0.4 %

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.
- **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:**

109-66-0 Pentane

Oral LD50 >5000 mg/kg (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)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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* 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

- 109-66-0 Pentane

NOEC (72h)	7.51 mg/l (Pseudokirchneriella subcapitata)
EC50 (72h)	10.7 mg/l (Pseudokirchneriella subcapitata)
LC50 (96h)	4.26 mg/l (Oncorhynchus mykiss)
EC50 (48h)	2.7 mg/l (Daphnia magna)

- **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.

- **Ecotoxicological effects:**

- **Remark:** Toxic for fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

- **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**

- **ADR, ADN**

Aerosols, flammable

UN1950 AEROSOLS, ENVIRONMENTALLY

HAZARDOUS

- **IMDG**

- **IATA**

AEROSOLS, MARINE POLLUTANT

AEROSOLS, flammable

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· Transport hazard class(es)

· DOT



· Class 2.1 Gases
· Label 2.1

· ADR



· Class 2.5F Gases
· Label 2.1

· ADN

· ADN/R Class: 2.5F

· IMDG



· Class 2.1 Gases
· Label 2.1

· IATA



· Class 2.1 Gases
· Label 2.1

· Packing group

· DOT, ADR, IMDG, IATA Void

· Environmental hazards:

Product contains environmentally hazardous substances:
Pentane

· Marine pollutant:

Symbol (fish and tree)

· Special marking (ADR):

Symbol (fish and tree)

· 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.

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· 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, ENVIRONMENTALLY HAZARDOUS

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):

109-66-0	Pentane	ACTIVE
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic <0.1% Benzene (IP 346 < 3%)	ACTIVE
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	ACTIVE
74-98-6	propane	ACTIVE
8042-47-5	White mineral oil, petroleum	ACTIVE
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	ACTIVE
9003-29-6	Polybutene (Isobutylene/butene copolymer)	ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

· 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.

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- **Cancerogenity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

- **National regulations:**

- **Disturbance regulations:**

Class	Share in %
NK	50-<75

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

* 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: Klassifisering er basert på resultatene av blandingene som er testet. Helsefarer, Miljøfarer: Metoden for klassifisering av blandinger basert på blandingens bestanddeler (sumformel).

- **Contact:** ing. J. Sleumer

- **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

Sensitization - Skin 1: Skin sensitisation – Category 1

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

Aspiration Hazard 1: Aspiration hazard – Category 1

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**SAFETY DATA SHEET
MOTORCYCLE CLEANER**

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

1.1. Product identifier

Product name MOTORCYCLE CLEANER

Product number 664, 667, 251, 996

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Detergent.

1.3. Details of the supplier of the safety data sheet

Supplier Muc-Off Ltd 23 Branksome
Business Park Branksome Poole
Dorset BH12 1DW
UK +44 (0) 1202 307790
info@muc-off.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 1202 307790 (Office Hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Eye Irrit. 2 - H319

Environmental hazards Not Classified

2.2. Label elements

Pictogram



Signal word Warning

Hazard statements H319 Causes serious eye irritation.

Precautionary statements P264 Wash contaminated skin thoroughly after handling.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

MOTORCYCLE CLEANER

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE	1-5%
CAS number: 64-02-8	EC number: 200-573-9
	REACH registration number: 01-2119486762-27-XXXX
Classification	
Acute Tox. 4 - H302	
Acute Tox. 4 - H332	
Eye Dam. 1 - H318	
STOT RE 2 - H373	
ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS	< 3
CAS number: 68891-38-3	EC number: 500-234-8
	REACH registration number: 01-2119488639-16-XXXX
Classification	
Skin Irrit. 2 - H315	
Eye Dam. 1 - H318	
Aquatic Chronic 3 - H412	

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort continues.
Inhalation	Remove affected person from source of contamination. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if any discomfort continues.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

4.2. Most important symptoms and effects, both acute and delayed

Ingestion	May cause stomach pain or vomiting.
Eye contact	Causes serious eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

MOTORCYCLE CLEANER

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Nitrous gases (NOx).

5.3. Advice for firefighters

Protective actions during firefighting Containers close to fire should be removed or cooled with water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. In case of spills, beware of slippery floors and surfaces.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep container tightly closed. Keep only in the original container.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

GLYCERINE

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ mist

WEL = Workplace Exposure Limit

Ingredient comments WEL = Workplace Exposure Limits

MOTORCYCLE CLEANER

TETRASODIUM ETHYLENE DIAMINE TETRAACETATE (CAS: 64-02-8)

DNEL	Workers - Inhalation; Short term local effects: 2.5 mg/m ³
	Workers - Inhalation; Long term local effects: 2.5 mg/m ³
	Consumer - Inhalation; Short term local effects: 1.5 mg/m ³
	Consumer - Inhalation; Long term local effects: 1.5 mg/m ³
	Consumer - Oral; Long term systemic effects: 25 mg/kg/day
PNEC	- Fresh water; 2.2 mg/l
	- Marine water; 0.22 mg/l
	- Intermittent release; 1.2 mg/l
	- Soil; 0.72 mg/kg
	- STP; 43 mg/l

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS (CAS: 68891-38-3)

DNEL	Industry - Dermal; Long term systemic effects: 2750 mg/kg/day
	Industry - Inhalation; Long term systemic effects: 175 mg/m ³
	Consumer - Dermal; Long term systemic effects: 1650 mg/kg/day
	Consumer - Oral; Long term systemic effects: 15 mg/kg/day
	Consumer - Inhalation; Long term systemic effects: 52 mg/m ³
PNEC	- Fresh water; 0.24 mg/l
	- Soil; 0.946 mg/kg
	- STP; 10000 mg/l
	- Marine water; 0.024 mg/l
	- Intermittent release; 0.071 mg/l
	- Sediment (Freshwater); 5.45 mg/kg
- Sediment (Marinewater); 0.545 mg/kg	

GLYCERINE (CAS: 56-81-5)

Ingredient comments	WEL = Workplace Exposure Limits
DNEL	Industry - Inhalation; Long term local effects: 56 mg/m ³
PNEC	- Fresh water; 0.885 mg/l
	- Marine water; 0.0885 mg/l
	- Intermittent release; 8.85 mg/l
	- STP; 1000 mg/l
	- Soil; 0.141 mg/kg
	- Sediment (Freshwater); 3.3 mg/kg
- Sediment (Marinewater); 0.33 mg/kg	

8.2. Exposure controls

Protective equipment



Eye/face protection

The following protection should be worn: Chemical splash goggles.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Neoprene. EN 374

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Other skin and body protection Wear suitable protective clothing as protection against splashing or contamination.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Coloured liquid.
Colour	Pink.
Odour	Characteristic.
Odour threshold	No information available.
pH	pH (concentrated solution): 10.8 - 11.4
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	1.02 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Other information	Not determined.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.

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Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
-----------	---

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined.
------------------------------------	-----------------

10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.
---------------------	---

10.5. Incompatible materials

Materials to avoid	Strong oxidising agents.
--------------------	--------------------------

10.6. Hazardous decomposition products

Hazardous decomposition products	Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Nitrous gases (NOx).
----------------------------------	---

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	No information available.
-----------------------	---------------------------

Acute toxicity - oral

ATE oral (mg/kg)	69,531.25
------------------	-----------

Acute toxicity - dermal

Notes (dermal LD ₅₀)	No information available.
----------------------------------	---------------------------

Acute toxicity - Inhalation

ATE inhalation (gases ppm)	175,781.25
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ATE inhalation (vapours mg/l)	429.69
-------------------------------	--------

ATE inhalation (dusts/mists mg/l)	58.59
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Skin corrosion/irritation

Animal data	No information available.
-------------	---------------------------

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye irritation.
-------------------------------	--------------------------------

Respiratory sensitisation

Respiratory sensitisation	No information available.
---------------------------	---------------------------

Skin sensitisation

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Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact Prolonged and frequent contact may cause redness and irritation.

Eye contact Causes serious eye irritation.

SECTION 12: Ecological Information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Toxicity No data available.

12.2. Persistence and degradability

Persistence and degradability The surfactant(s) contained in this product complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request, or at the request of a detergent manufacturer.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	This material and its container must be disposed of as hazardous waste. Do not puncture or incinerate, even when empty.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
----------------	--

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
Guidance	CHIP for everyone HSG228. Approved Classification and Labelling Guide (Sixth edition) L131. Safety Data Sheets for Substances and Preparations.

15.2. Chemical safety assessment

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No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	<p>ATE: Acute Toxicity Estimate.</p> <p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>CAS: Chemical Abstracts Service.</p> <p>DNEL: Derived No Effect Level.</p> <p>IATA: International Air Transport Association.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>Kow: Octanol-water partition coefficient.</p> <p>LC₅₀: Lethal Concentration to 50 % of a test population.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p> <p>IARC: International Agency for Research on Cancer.</p> <p>MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.</p> <p>cATpE: Converted Acute Toxicity Point Estimate.</p> <p>BCF: Bioconcentration Factor.</p> <p>BOD: Biochemical Oxygen Demand.</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>LOAEC: Lowest Observed Adverse Effect Concentration.</p> <p>LOAEL: Lowest Observed Adverse Effect Level.</p> <p>NOAEC: No Observed Adverse Effect Concentration.</p> <p>NOAEL: No Observed Adverse Effect Level.</p> <p>NOEC: No Observed Effect Concentration.</p> <p>LOEC: Lowest Observed Effect Concentration.</p> <p>DMEL: Derived Minimal Effect Level.</p>
Classification abbreviations and acronyms	<p>Acute Tox. = Acute toxicity</p> <p>Aquatic Acute = Hazardous to the aquatic environment (acute)</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	03/10/2017
Version number	1.002
Supersedes date	09/09/2016
SDS status	Approved.

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Hazard statements in full

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Signature

Muc-Off Ltd.



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acc. to OSHA HCS

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1 Identification

- Product identifier
- Trade name: **Muc-Off Motorcycle Protectant**
- Article number: 608US, 601US
- 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: CHEMTREC: 1-800-424-9300 24HR

2 Hazard(s) identification

- Classification of the substance or mixture



GHS02 Flame

Flammable Aerosols 1 H222 Extremely flammable aerosol.



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 GHS08

- Signal word Danger

- Hazard-determining components of labeling:

Hydrocarbons, C10-C13, n-alkanes, cyclic, <2% aromates, Benzene <0.1%

- Hazard statements

H222 Extremely flammable aerosol.

H304 May be fatal if swallowed and enters airways.

- Precautionary statements

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

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.

P312 Call a poison center/doctor if you feel unwell.

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.

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- Classification system:
- NFPA ratings (scale 0 - 4)



Health = 0
Fire = 4
Reactivity = 0

- WHMIS-ratings (scale 0 - 4)



Health = 0
Fire = 4
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:

	Hydrocarbons, C10-C13, n-alkanes, cyclic, <2% aromates, Benzene <0.1%	50-<75%
74-98-6	propane	2.5-<10%
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	2.5-<10%
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	1-<2.5%

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.

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.

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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
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	5500* ppm
91-64-5	Coumarin	0.88 mg/m ³
123-11-5	p-Methoxybenzaldehyde	21 mg/m ³
120-51-4	Benzyl benzoate	5.7 mg/m ³

· PAC-2:

74-98-6	propane	17000** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	17000** ppm
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	17000** ppm
91-64-5	Coumarin	9.7 mg/m ³
123-11-5	p-Methoxybenzaldehyde	230 mg/m ³
120-51-4	Benzyl benzoate	63 mg/m ³

· PAC-3:

74-98-6	propane	33000*** ppm
106-97-8	butane (containing < 0.1% butadiene (203-450-8), Note K)	53000*** ppm
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	53000*** ppm
91-64-5	Coumarin	58 mg/m ³
123-11-5	p-Methoxybenzaldehyde	300 mg/m ³
120-51-4	Benzyl benzoate	380 mg/m ³

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.

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- **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.
- **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 remaining constituent has 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.

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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).

- **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: Clear

- **Odor:** 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:** 236 °C (456.8 °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: 0.7 Vol %

Upper: 10.9 Vol %

- **Vapor pressure at 20 °C (68 °F):** 2800 hPa (2100.2 mm Hg)

- **Vapor pressure at 50 °C (122 °F):** 4900 hPa (3675.3 mm Hg)

- **Density at 20 °C (68 °F):** 0.737 g/cm³ (6.15 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.

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· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**· **Dynamic:** Not determined.· **Kinematic:** Not determined.· **Solvent content:**· **Organic solvents:** 89.1 %· **Solids content:** 0.7 %

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.
- **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:**

Hydrocarbons, C10-C13, n-alkanes, cyclic, <2% aromates, Benzene <0.1%

Oral	LD50	>5000 mg/kg (Rat)
Dermal	LD50	>2000 mg/kg (Rabbit)
Inhalative	LC50 (4h)	4951 mg/l (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)**

91-64-5	Coumarin	3
---------	----------	---

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**· **Aquatic toxicity:**

Hydrocarbons, C10-C13, n-alkanes, cyclic, <2% aromates, Benzene <0.1%

EL0 (48h)	1000 mg/l (Daphnia magna)
EL0 (72h)	1000 mg/l (Pseudokirchneriella subcapitata)

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LL0 (96h) | 1000 mg/l (Oncorhynchus mykiss)

- **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

- | | |
|---|--|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, ADN, IMDG, IATA | <p style="text-align: center;">UN1950</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR, ADN · IMDG · IATA | <p style="text-align: center;">Aerosols, flammable
UN1950 AEROSOLS
AEROSOLS
AEROSOLS, flammable</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class · Label | <p style="text-align: center;">2.1 Gases
2.1</p> |
| <ul style="list-style-type: none"> · ADR | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class · Label | <p style="text-align: center;">2.5F Gases
2.1</p> |

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· ADN	
· ADN/R Class:	2.5F
· IMDG, IATA	
	
· Class	2.1 Gases
· Label	2.1
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· 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.

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· TSCA (Toxic Substances Control Act):		
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
75-28-5	isobutane (containing < 0,1 % butadiene (203-450-8), Note K)	ACTIVE

· Hazardous Air Pollutants	
None of the ingredients is listed.	

· 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.	

· Cancerogenity categories	
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	

· TLV (Threshold Limit Value)	
None of the ingredients is listed.	

· MAK (German Maximum Workplace Concentration)	
None of the ingredients is listed.	

· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	

· National regulations:	
· Disturbance regulations:	
Class	Share in %
NK	75-<100

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

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).

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

· **Contact:** info@muc-off.com

· **Date of preparation / last revision** 06/27/2023

· **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

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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
Aspiration Hazard 1: Aspiration hazard – Category 1

US