



## Safety data sheet

Printing date: 30.01.2014

According to 1907/2006 EEC Article 31

Version: 1

Revision: 30.01.2014

## 1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** **MUC OFF Dics Brake Cleaner**
- **Article number:** 11-35645-0200 (61-35645-4101 Muc Off: 913)
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use**
  - SU21 Consumer uses: Private households / general public / consumers
  - SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category** PC35 Washing and cleaning products (including solvent based products)
- **Process category**
  - PROC11 Non industrial spraying
  - PROC7 Industrial spraying
- **Application of the substance / the mixture** Cleaner solvent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

Muc-Off Ltd. 1st Floor, Unit 1, Concept Office  
Park, Innovation Close, Poole, Dorset  
BH12 4QT, UK  
Tel: +44 (0)1202 307790  
Fax: +44 (0)1202 746853  
E-mail: af@muc-off.com
- **Further information obtainable from:** Research & Development/E-mail: af@muc-off.com
- **1.4 Emergency telephone number:** During normal opening hours: Tel: +44 (0)1202 307790

## 2 Hazards identification

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



GHS02 flame

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



GHS07

Eye Irrit. 2	H319	Causes serious eye irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36: Irritating to eyes.



F+; Extremely flammable

R12: Extremely flammable.

R66-67: Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

Warning! Pressurized container.

Has a narcotizing effect.

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- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **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:**

Acetone

- **Hazard statements**

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

H319 Causes serious eye irritation.

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.

P103 Read label before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P251 Do not pierce or burn, even after use.

P211 Do not spray on an open flame or other ignition source.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

P403 Store in a well-ventilated place.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

EUH066 Repeated exposure may cause skin dryness or cracking.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **3.1 Substances**

- **Additional information:**

CAS: 64-17-5

EINECS: 200-578-6

Reg.nr.: 01-2119457610-43

ethanol

F R11

Flam. Liq. 2, H225; Eye Irrit. 2, H319

25-<50%

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CAS: 67-64-1 EINECS: 200-662-2 Reg.nr.: 01-2119471330-49	Acetone Xi R36; F R11 R66-67 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	10-<20%
CAS: 106-97-8 EINECS: 203-448-7 Reg.nr.: 01-2119474691-32	butane (containing < 0.1% butadiene (203-450-8)) F+ R12 Flam. Gas 1, H220; Press. Gas, H280	10-<25%
CAS: 74-98-6 EINECS: 200-827-9 Reg.nr.: 01-2119486944-21	propane F+ R12 Flam. Gas 1, H220; Press. Gas, H280	10-<25%
CAS: 107-98-2 EINECS: 203-539-1 Reg.nr.: 01-2119457435-35	1-methoxy-2-propanol R10-67 Flam. Liq. 3, H226; STOT SE 3, H336	3-<10%
CAS: 67-63-0 EINECS: 200-661-7 Reg.nr.: 01-2119457558-25	propan-2-ol Xi R36; F R11 R67 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	2.5-<3%
CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-butyl acetate R10-66-67 Flam. Liq. 3, H226; STOT SE 3, H336	1.0-<2.5%

· **3.2 Mixtures**

· **Description:** Active substance with propellant

· **Dangerous components:** -

· **Ingredients according to detergents guideline 648/2004/EC**

aliphatic hydrocarbons

15 - 30%

· **Additional information:**

## 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. If symptoms persist, consult a doctor.

· **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.

## 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.

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- **5.3 Advice for firefighters**
- **Protective equipment:** Mount respiratory protective device.

### 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.

### 7 Handling and storage

- **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **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.  
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.
- **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 pressurized containers.
- **Information about storage in one common storage facility:**  
Observe official regulations on storing packagings with pressurized containers.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not seal receptacle gas tight.  
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.

### 8 Exposure controls/personal protection

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

· **Ingredients with limit values that require monitoring at the workplace:**

**64-17-5 ethanol**

WEL Long-term value: 1920 mg/m<sup>3</sup>, 1000 ppm

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**67-64-1 Acetone**

WEL Short-term value: 3620 mg/m<sup>3</sup>, 1500 ppm  
Long-term value: 1210 mg/m<sup>3</sup>, 500 ppm

**106-97-8 butane (containing < 0.1% butadiene (203-450-8))**

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

**74-98-6 propane**

OEL Short-term value: 3600 mg/m<sup>3</sup>, 2000 ppm  
Long-term value: 1800 mg/m<sup>3</sup>, 1000 ppm

**107-98-2 1-methoxy-2-propanol**

WEL Short-term value: 560 mg/m<sup>3</sup>, 150 ppm  
Long-term value: 375 mg/m<sup>3</sup>, 100 ppm  
Sk

**67-63-0 propan-2-ol**

WEL Short-term value: 1250 mg/m<sup>3</sup>, 500 ppm  
Long-term value: 999 mg/m<sup>3</sup>, 400 ppm

**123-86-4 n-butyl acetate**

WEL Short-term value: 966 mg/m<sup>3</sup>, 200 ppm  
Long-term value: 724 mg/m<sup>3</sup>, 150 ppm

**· DNELs****67-64-1 Acetone**

Oral	DNEL Long term-systemic	62 mg/kg bw/day (Consumer)
Dermal	DNEL Long term-systemic	62 mg/kg bw/day (Consumer) 186 mg/kg bw/day (Worker)
Inhalative	DNEL Acute-local	2420 mg/m <sup>3</sup> (Worker)
	DNEL Long term-systemic	200 mg/m <sup>3</sup> (Consumer) 1210 mg/m <sup>3</sup> (Worker)

**67-63-0 propan-2-ol**

Oral	DNEL Long term-systemic	26 mg/kg bw/day (Consumer)
Dermal	DNEL Long term-systemic	319 mg/kg bw/day (Consumer) 888 mg/kg bw/day (Worker)
Inhalative	DNEL Long term-systemic	89 mg/m <sup>3</sup> (Consumer) 500 mg/m <sup>3</sup> (Worker)

**· PNECs****67-64-1 Acetone**

PNEC Freshwater sediment	30.4 mg/kg (Unfind)
PNEC Marine water	1.06 mg/l (Unfind)
PNEC Marine water sediment	3.04 (Unfind)
PNEC Soil	29.5 mg/kg (Unfind)

· **Additional information:** The lists valid during the making were used as basis.

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

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

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**· 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

**· Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.



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

**· 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:**

Tightly sealed goggles

**· Body protection:** Use protective suit.

## 9 Physical and chemical properties

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

**Form:**

Aerosol

**Colour:**

According to product specification

**· Odour:**

Characteristic

**· Odour threshold:**

Not determined.

**· pH-value:**

Not determined.

**· Change in condition**

**Melting point/Melting range:**

Undetermined.

**Boiling point/Boiling range:**

-44 °C

**· Flash point:**

-97 °C

**· Flammability (solid, gaseous):**

Not applicable.

**· Ignition temperature:**

365 °C

**· Decomposition temperature:**

Not determined.

**· Self-igniting:**

Product is not selfigniting.

**· Danger of explosion:**

Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.

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- |  |                 |
|--|-----------------|
| <b>· Explosion limits:</b>   |                 |
| <b>Lower:</b>  | 1.5 Vol %       |
| <b>Upper:</b>  | 15.0 Vol %      |
| <b>· Vapour pressure at 20 °C:</b> 5 Bar   |                 |
| <b>· Density at 20 °C:</b> 0.723 g/cm <sup>3</sup>                                 |                 |
| <b>· Relative density</b> Not determined.  |                 |
| <b>· Vapour density</b> Not determined.  |                 |
| <b>· Evaporation rate</b> Not applicable.  |                 |
| <b>· Solubility in / Miscibility with water:</b> Not miscible or difficult to mix. |                 |
| <b>· Partition coefficient (n-octanol/water):</b> Not determined.                  |                 |
| <b>· Viscosity:</b>  |                 |
| <b>Dynamic:</b>  | Not determined. |
| <b>Kinematic:</b>  | Not determined. |
| <b>· Solvent content:</b>  |                 |
| <b>Organic solvents:</b>   | 99.8 %          |
| <b>· 9.2 Other information</b> No further relevant information available.          |                 |

### 10 Stability and reactivity

- **10.1 Reactivity**
- **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.

### 11 Toxicological information

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

#### · LD/LC50 values relevant for classification:

##### 67-64-1 Acetone

Oral	LD50	5800 mg/kg (rat)
Dermal	LD50	7800 mg/kg (rbt)
Inhalative	LC50/4h	>20 mg/l (rat)

##### 67-63-0 propan-2-ol

Oral	LD50	5840 mg/kg (rat)
Dermal	LD50	13900 mg/kg (rabbit)
Inhalative	LC50/6h	25000 mg/m3 (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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Irritant

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### 12 Ecological information

#### · 12.1 Toxicity

#### · Aquatic toxicity:

##### 67-64-1 Acetone

EC50	8800 mg/l (Daphnia magna)
	8300 (96h) mg/l (Fish)

##### 67-63-0 propan-2-ol

LC50 (24h)	9714 mg/l (Daphnia magna)
LC50/96h	9640 mg/l (Pimephales promelas)
LOEC (8 days)	1000 mg/l (algae)

- **12.2 Persistence and degradability** No further relevant information available.
- **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.

### 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.

### 14 Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1950
- **14.2 UN proper shipping name**
- **ADR** 1950 AEROSOLS
- **IMDG** AEROSOLS
- **IATA** AEROSOLS, flammable

#### · 14.3 Transport hazard class(es)

#### · ADR



- **Class** 2 5F Gases.

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· **Label** 2.1· **IMDG, IATA**· **Class** 2.1· **Label** 2.1· **14.4 Packing group**· **ADR, IMDG, IATA** Void· **14.5 Environmental hazards:**· **Marine pollutant:** No· **14.6 Special precautions for user**

Warning: Gases.

· **Danger code (Kemler):**

-

· **EMS Number:**

F-D,S-U

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)** 1L· **Transport category** 2· **Tunnel restriction code** D· **UN "Model Regulation":** UN1950, AEROSOLS, 2.1

\*

### 15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **National regulations:**· **Technical instructions (air):**

Class	Share in %
NK	75-<100

· **VOC-CH** 99.84 %· **VOC-EU** 721.8 g/l· **Danish MAL Code** 3-1· **15.2 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.

· **Relevant phrases**

H220 Extremely flammable gas.

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H280 Contains gas under pressure; may explode if heated.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

R10 Flammable.

R11 Highly flammable.

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- R12 Extremely flammable.
- R36 Irritating to eyes.
- R66 Repeated exposure may cause skin dryness or cracking.
- R67 Vapours may cause drowsiness and dizziness.

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

· **Contact:** Ing. J. Sleumer

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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 Harmonized 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)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· **\* Data compared to the previous version altered. \***

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