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

### 1.1. Product identifier

Product form : Mixture  
Trade name/designation : Brake Cleaner  
Type of product : Washing and cleaning products (including solvent based products)  
Vaporizer : Aerosol

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

#### 1.2.1. Relevant identified uses

Intended for general public  
Main use category : Industrial use, Professional uses, Consumer use  
Use of the substance/mixture : Cleaner

#### 1.2.2. Uses advised against

No data available

### 1.3. Details of the supplier of the safety data sheet

JX Nippon Oil & Energy Europe Limited  
2F Bury House, 31 Bury Street, London, EC3A 5AR, UK  
T +44 20 7186 0400  
[info@jxeurope.com](mailto:info@jxeurope.com)

### 1.4. Emergency telephone number

Emergency number : +44 20-7186-400  
Only available during office hours.

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 809 21 66 (public, 8am - 10pm, 7/7) +353 01 809 2566 (Professionals, 24/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)


## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Aerosol 1 H222;H229  
Skin Irrit. 2 H315  
STOT SE 3 H336  
Aquatic Chronic 2 H411

Full text of hazard classes and H-statements : see section 16

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## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word :

Danger

Hazardous ingredients :

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

Hazard statements (CLP) :

H222 - Extremely flammable aerosol.  
H229 - Pressurised container: May burst if heated.  
H315 - Causes skin irritation.  
H336 - May cause drowsiness or dizziness.  
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P101 - If medical advice is needed, have product container or label at hand.  
P102 - Keep out of reach of children.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P251 - Do not pierce or burn, even after use.  
P211 - Do not spray on an open flame or other ignition source.  
P260 - Do not breathe spray.  
P280 - Wear eye protection, protective gloves.  
P273 - Avoid release to the environment.  
P271 - Use only outdoors or in a well-ventilated area.  
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician.  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P331 - Do NOT induce vomiting.  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.  
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 container, contents to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

## 2.3. Other hazards

Other hazards

: Vapours can form explosive mixtures with air. Results of PBT and vPvB assessment : Not applicable.


## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	(EC-No.) 921-024-6 (REACH-no) 01-2119475514-35-XXXX	75 - 100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

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Butane	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (EC Index) 601-004-00-0 (REACH-no) 01-2119474691-32-XXXX	10 - 25	Flam. Gas 1, H220 Press. Gas (Liq.), H280
Carbon dioxide	(CAS-No.) 124-38-9 (EC-No.) 204-696-9	2,5 - 10	Press. Gas (Liq.), H280

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.
Inhalation	: Remove person to fresh air and keep comfortable for breathing. In case of doubt or persistent symptoms, consult always a physician.
Skin contact	: Take off contaminated clothing. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
Eyes contact	: Rinse immediately carefully and thoroughly with eye-bath or water. In case of doubt or persistent symptoms, consult always a physician.
Ingestion	: Rinse mouth thoroughly with water. Do NOT induce vomiting. Get medical advice/attention.

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

Inhalation	: May cause drowsiness or dizziness. The following symptoms may occur: Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Skin contact	: Causes skin irritation. The following symptoms may occur: Red skin, Itching, Dry skin.
Eyes contact	: The following symptoms may occur: May cause eye irritation. Redness. Tears.
Ingestion	: May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media


Suitable extinguishing media	: carbon dioxide (CO <sub>2</sub> ), powder, alcohol-resistant foam, water spray.
Unsuitable extinguishing media	: Strong water jet.

### 5.2. Special hazards arising from the substance or mixture

Specific hazards	: Extremely flammable aerosol. Ignition risk. Vapours are heavier than air and may spread along floors. Aerosol cans may rupture and become projectiles. Do not spray on a naked flame or any incandescent material. On heating there is a risk of a build-up of pressure in hermetically sealed containers or tanks.
Explosion hazard	: In use may form an explosive vapour-air mixture. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.
Hazardous decomposition products in case of fire	: Carbon oxides (CO, CO <sub>2</sub> ).

### 5.3. Advice for firefighters

Firefighting instructions	: Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

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Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Do not breathe aerosol. Avoid contact with skin, eyes and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed. Use explosion-proof equipment. Use only non-sparking tools.

#### 6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Dam up the liquid spill.  
 Methods for cleaning up : Leave evaporate and disperse. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.


## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe vapours. Do not breathe aerosol. Avoid contact with skin, eyes and clothing. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment. Remove all sources of ignition. Pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50°C.  
 Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.  
 Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage.  
 Incompatible substances or mixtures : Strong oxidizing agents. Strong acids. Strong bases.  
 Storage temperature : ≤ 50 °C  
 Heat and ignition sources : Keep away from open flames, hot surfaces and sources of ignition. Keep out of direct sunlight. Do not smoke.  
 Packaging materials : Keep only in the original container.

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### 7.3. Specific end use(s)

No data available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Butane (106-97-8)		
Austria	MAK (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Austria	MAK (ppm)	800 ppm
Austria	MAK Short time value (mg/m <sup>3</sup> )	3800 mg/m <sup>3</sup>
Austria	MAK Short time value (ppm)	1600 ppm
Belgium	Limit value (ppm)	1000 ppm (gas)
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	1450 mg/m <sup>3</sup> 22 mg/m <sup>3</sup> (containing >=0.1% 1,3-Butadiene)
Croatia	GVI (granična vrijednost izloženosti) (ppm)	600 ppm 10 ppm (containing >=0.1% 1,3-Butadiene)
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m <sup>3</sup> )	1810 mg/m <sup>3</sup>
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	750 ppm
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	1200 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	500 ppm
Estonia	OEL TWA (mg/m <sup>3</sup> )	1500 mg/m <sup>3</sup>
Estonia	OEL TWA (ppm)	800 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	800 ppm
Finland	HTP-arvo (15 min)	2400 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	1000 ppm
France	VME (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
France	VME (ppm)	800 ppm
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	2400 mg/m <sup>3</sup>
Germany	TRGS 900 Occupational exposure limit value (ppm)	1000 ppm
Greece	OEL TWA (mg/m <sup>3</sup> )	2350 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	1000 ppm
Hungary	AK-érték	2350 mg/m <sup>3</sup>
Hungary	CK-érték	9400 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	1000 ppm
Ireland	OEL (15 min ref) (ppm)	3000 ppm (calculated)
Latvia	OEL TWA (mg/m <sup>3</sup> )	300 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Poland	NDSch (mg/m <sup>3</sup> )	3000 mg/m <sup>3</sup>
Slovenia	OEL TWA (mg/m <sup>3</sup> )	2400 mg/m <sup>3</sup> (containing >=0.1% Butadiene)
Slovenia	OEL TWA (ppm)	1000 ppm (containing >=0.1% Butadiene)
Slovenia	OEL STEL (mg/m <sup>3</sup> )	9600 mg/m <sup>3</sup> (containing >=0.1% Butadiene)
Slovenia	OEL STEL (ppm)	4000 ppm (containing >=0.1% Butadiene)

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<b>Butane (106-97-8)</b>		
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	1450 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	600 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	1810 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	750 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	600 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	250 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m <sup>3</sup> )	750 mg/m <sup>3</sup> (value calculated)
Norway	Grenseverdier (Korttidsverdi) (ppm)	312,5 ppm (value calculated)
Switzerland	MAK (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Switzerland	MAK (ppm)	800 ppm
Switzerland	KZGW (mg/m <sup>3</sup> )	7600 mg/m <sup>3</sup>
Switzerland	KZGW (ppm)	3200 ppm
Australia	TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Australia	TWA (ppm)	800 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	800 ppm
USA - ACGIH	ACGIH STEL (ppm)	1000 ppm (explosion hazard)
USA - IDLH	US IDLH (ppm)	1600 ppm (>10% LEL)
USA - NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (TWA) (ppm)	800 ppm
<b>Carbon dioxide (124-38-9)</b>		
EU	IOELV TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
EU	IOELV TWA (ppm)	5000 ppm
Austria	MAK (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Austria	MAK (ppm)	5000 ppm
Austria	MAK Short time value (mg/m <sup>3</sup> )	18000 mg/m <sup>3</sup>
Austria	MAK Short time value (ppm)	10000 ppm
Belgium	Limit value (mg/m <sup>3</sup> )	9131 mg/m <sup>3</sup>
Belgium	Limit value (ppm)	5000 ppm
Belgium	Short time value (mg/m <sup>3</sup> )	54784 mg/m <sup>3</sup>
Belgium	Short time value	30000 ppm
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Bulgaria	OEL TWA (ppm)	5000 ppm
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Croatia	GVI (granična vrijednost izloženosti) (ppm)	5000 ppm
Cyprus	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Cyprus	OEL TWA (ppm)	5000 ppm
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	5000 ppm
Estonia	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Estonia	OEL TWA (ppm)	5000 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	9100 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	5000 ppm
France	VME (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup> (indicative limit)
France	VME (ppm)	5000 ppm (indicative limit)



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### Carbon dioxide (124-38-9)

Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	9100 mg/m <sup>3</sup>
Germany	TRGS 900 Occupational exposure limit value (ppm)	5000 ppm
Gibraltar	8h mg/m <sup>3</sup>	9000 mg/m <sup>3</sup>
Gibraltar	8h ppm	5000 ppm
Greece	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	5000 ppm
Greece	OEL STEL (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Greece	OEL STEL (ppm)	5000 ppm
Hungary	AK-érték	9000 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	5000 ppm
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	27000 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (ppm)	15000 ppm
Italy	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Italy	OEL TWA (ppm)	5000 ppm
Latvia	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Latvia	OEL TWA (ppm)	5000 ppm
Lithuania	IPRV (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup> (Carbon dioxide is often regarded as an indicator of the work rooms, where air pollution is due to human presence there)
Lithuania	IPRV (ppm)	5000 ppm (Carbon dioxide is often regarded as an indicator of the work rooms, where air pollution is due to human presence there)
Luxembourg	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Luxembourg	OEL TWA (ppm)	5000 ppm
Malta	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Malta	OEL TWA (ppm)	5000 ppm
Netherlands	Grenswaarde TGG 8H (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Poland	NDS (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup> (except underground coal mining)
Poland	NDSch (mg/m <sup>3</sup> )	27000 mg/m <sup>3</sup> (except underground coal mining)
Portugal	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup> (indicative limit value)
Portugal	OEL TWA (ppm)	5000 ppm (indicative limit value)
Portugal	OEL STEL (ppm)	30000 ppm
Romania	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	5000 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	5000 ppm
Slovenia	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Slovenia	OEL TWA (ppm)	5000 ppm
Spain	VLA-ED (mg/m <sup>3</sup> )	9150 mg/m <sup>3</sup> (indicative limit value)
Spain	VLA-ED (ppm)	5000 ppm (indicative limit value)
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	5000 ppm



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Carbon dioxide (124-38-9)		
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	18000 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	10000 ppm
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	9150 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	5000 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	27400 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	15000 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	5000 ppm
Switzerland	MAK (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Switzerland	MAK (ppm)	5000 ppm
Australia	TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup> 22500 mg/m <sup>3</sup> (in coal mines)
Australia	TWA (ppm)	5000 ppm 12500 ppm (in coal mines)
Australia	STEL (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Australia	STEL (ppm)	30000 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	30000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	5000 ppm
USA - ACGIH	ACGIH TWA (ppm)	5000 ppm
USA - ACGIH	ACGIH STEL (ppm)	30000 ppm
USA - IDLH	US IDLH (ppm)	40000 ppm
USA - NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (TWA) (ppm)	5000 ppm
USA - NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL (STEL) (ppm)	30000 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	5000 ppm


Additional information : Personal air monitoring :. Room air monitoring. Recommended monitoring procedures

## 8.2. Exposure controls

Engineering measure(s) : Provide adequate ventilation. Organisational measures to prevent /limit releases, dispersion and exposure. Safe handling: see section 7 . Use only outdoors or in a well-ventilated area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not breathe vapours, mist or gas.

Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.



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Hand protection	: Wear chemically resistant gloves (tested to EN374) . Suitable material: NBR (Nitrile rubber). Thickness >= 0.5 mm. Breakthrough time : 480 min. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	: Use suitable eye protection. (EN166): tightly fitting safety goggles
Body protection	: Wear suitable protective clothing.
Respiratory protection	: Long term exposure. Wear respiratory protection. Aerosol filter type AX/P2. In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (EN 140). Full face mask (EN 136). Filter type: A/P2. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	: Avoid release to the environment. Comply with applicable Community environmental protection legislation.


## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: aerosol.
Colour	: No data available
Odour	: Characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: No data available
Freezing point	: No data available
Initial boiling point and boiling range	: 0 °C
Flash point	: -60 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not self-igniting Not applicable,liquid,Extremely flammable aerosol.
Vapour pressure	: 2100 hPa
Vapour density	: No data available
Relative density	: No data available
Density	: 0,7 g/cm <sup>3</sup>
Solubility	: Not miscible.
Partition coefficient n-octanol/water	: No data available
Kinematic viscosity	: No data available
Dynamic viscosity	: No data available
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: 0,8 - 8,5 vol %

### 9.2. Other information

No data available

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Extremely flammable aerosol. Reference to other sections: 10.4 & 10.5.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Will ignite if exposed to intensive heat and air. Risk of explosion by shock, friction, fire or other sources of ignition.

### 10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Safe handling: see section 7. Avoid temperature above 50.

### 10.5. Incompatible materials

Oxidising substances. Safe handling: see section 7.

### 10.6. Hazardous decomposition products

Reference to other sections: 5.2.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
LD50/oral/rat	> 5840 mg/kg (OECD 401)
LD50/dermal/rat	> 2920 (OECD 402)
LC50/inhalation/4h/rat	> 25200 mg/m <sup>3</sup> (OECD 403)
Butane (106-97-8)	
LD50/oral/rat	study technically not feasible
LD50/dermal/rat	study technically not feasible
LC50/inhalation/4h/rat	658 g/m <sup>3</sup> (Exposure time: 4 h)

Skin corrosion/irritation : Causes skin irritation.  
pH: No data available

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met.)  
pH: No data available

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met.)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met.)

Carcinogenicity - Description : Not classified (Based on available data, the classification criteria are not met.)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met.)


STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met.)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met.)

Brake Cleaner	
Vaporizer	Aerosol

Other information : Symptoms related to the physical, chemical and toxicological characteristics. For further information see section 4.

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## SECTION 12: Ecological information

### 12.1. Toxicity

Environmental properties : Toxic to aquatic life with long lasting effects. According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
LC50 fish 1	11,4 mg/l (LL50 - OECD 203 - Oncorhynchus mykiss (Freshwater))
EC50 Daphnia 1	3 mg/l (EL50 - OECD 202 - Daphnia magna (freshwater))
ErC50 (algae)	30 mg/l (EL50 - OECD 210 - Pseudokirchnerella subcapitata (freshwater))
LOEC (chronic)	0,32 mg/l
NOEC chronic fish	0,17 mg/l (28d - Petrotox computer model (v3.04) - Oncorhynchus mykiss (freshwater))
NOEC chronic crustacea	(21d - OECD 211 - Daphnia magna (freshwater))
Butane (106-97-8)	
EC50 Daphnia 1	14,22 mg/l (48h) US Environmental Protection Agency's Office of pollution Prevention (2008)
ErC50 (algae)	7,71 mg/l (96h) US Environmental Protection Agency's Office of pollution Prevention (2008)

### 12.2. Persistence and degradability

Brake Cleaner	
Persistence and degradability	No data available.

### 12.3. Bioaccumulative potential

Brake Cleaner	
Partition coefficient n-octanol/water	No data available
Bioaccumulative potential	No data available.
Butane (106-97-8)	
Partition coefficient n-octanol/water	2,89
Carbon dioxide (124-38-9)	
BCF fish 1	(no bioaccumulation)

### 12.4. Mobility in soil

Brake Cleaner	
Mobility in soil	No data available

### 12.5. Results of PBT and vPvB assessment

Brake Cleaner	
Results of PBT assessment	No data available


### 12.6. Other adverse effects

Other adverse effects : No data available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. Safe handling: see section 7. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations. Packaging contaminated by the product : Do not pierce or burn, even after use. Never use pressure to empty container.

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European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**SECTION 14: Transport information**

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
1950	1950	1950	1950	1950
<b>14.2. UN proper shipping name</b>				
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS
<b>Transport document description</b>				
UN 1950 AEROSOLS, 2.1, (D), ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN 1950 Aerosols, flammable, 2.1, ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS
<b>14.3. Transport hazard class(es)</b>				
2.1	2.1	2.1	2.1	2.1
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
No supplementary information available				

**14.6. Special precautions for user**


Special precautions for user : No data available

**- Overland transport**

Classification code (ADR) : 5F  
Special provisions : 190, 327, 344, 625  
Limited quantities (ADR) : 1I  
Excepted quantities (ADR) : E0  
Packing instructions (ADR) : P207  
Special packing provisions (ADR) : PP87, RR6, L2  
Mixed packing provisions (ADR) : MP9  
Transport category (ADR) : 2  
Special provisions for carriage - Packages (ADR) : V14  
Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV12  
Special provisions for carriage - Operation (ADR) : S2  
Tunnel restriction code : D

**- Transport by sea**

Special provisions (IMDG) : 63, 190, 277, 327, 344, 959

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Limited quantities (IMDG) : SP277  
 Excepted quantities (IMDG) : E0  
 Packing instructions (IMDG) : P207, LP02  
 Special packing provisions (IMDG) : PP87, L2  
 EmS-No. (Fire) : F-D  
 EmS-No. (Spillage) : S-U  
 Stowage category (IMDG) : None  
 Stowage and handling (IMDG) : SW1, SW22  
 Segregation (IMDG) : SG69  
 MFAG-No : 126

**- Air transport**

PCA Excepted quantities (IATA) : E0  
 PCA Limited quantities (IATA) : Y203  
 PCA limited quantity max net quantity (IATA) : 30kgG  
 PCA packing instructions (IATA) : 203  
 PCA max net quantity (IATA) : 75kg  
 CAO packing instructions (IATA) : 203  
 CAO max net quantity (IATA) : 150kg  
 Special provisions (IATA) : A145, A167, A802  
 ERG code (IATA) : 10L

**- Inland waterway transport**


Classification code (ADN) : 5F  
 Special provisions (ADN) : 190, 327, 344, 625  
 Limited quantities (ADN) : 1 L  
 Excepted quantities (ADN) : E0  
 Equipment required (ADN) : PP, EX, A  
 Ventilation (ADN) : VE01, VE04  
 Number of blue cones/lights (ADN) : 1

**- Rail transport**

Special provisions (RID) : 190, 327, 344, 625  
 Limited quantities (RID) : 1L  
 Excepted quantities (RID) : E0  
 Packing instructions (RID) : P207, LP200  
 Special packing provisions (RID) : PP87, RR6, L2  
 Mixed packing provisions (RID) : MP9  
 Transport category (RID) : 2  
 Special provisions for carriage – Packages (RID) : W14  
 Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW12  
 Colis express (express parcels) (RID) : CE2  
 Hazard identification number (RID) : 23

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

Code: IBC : No data available.

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## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Brake Cleaner - Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Brake Cleaner - Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Brake Cleaner - Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane - Butane

Contains no substance on the REACH candidate list

Organic solvent

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

France

Installations classées :

Not applicable.

**Germany**

VwVwS Annex reference : Water hazard class (WGK) nwg, Non-hazardous to water (Classification according to VwVwS, Annex 4)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed


NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

**Denmark**

Class for fire hazard : Class I-1

Store unit : 1 liter

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Classification remarks : F+ <Aerosol 1>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

## 15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the substance or the mixture by the supplier

<b>For the following substances of this mixture a chemical safety assessment has been carried out</b>
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane Butane

## SECTION 16: Other information

Abbreviations and acronyms:


	ABM = Algemene beoordelingsmethodiek
	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : Safety Data Sheet: Supplier. echa.europa.eu.

Training advice : Training staff on good practice.

Other information : Assessment/classification CLP. Article 9. Calculation method.



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Full text of H- and EUH-statements:

Aerosol 1	Aerosol, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - chronic hazard category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Gas 1	Flammable gases, hazard category 1
Flam. Liq. 2	Flammable liquids, Category 2
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container. May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Classification according to Regulation (EC) No. 1272/2008 [CLP]  
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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