

BRAKE CLEANER SPRAY



SAFETY DATA SHEET (REACH regulation (EC) n° 1907/2006 - n° 453/2010)



SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : BRAKE CLEANER SPRAY

Product code : 6391

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

Removes dirt, grease and oil. Only use the product conform the instructions on the aerosol.

1.3. Details of the supplier of the safety data sheet

Registered company name : BO Motor Oil B.V.

Address : Rootven 10 5531MB Bladel. The Netherlands.

Telephone : +31 (0) 497-384847. Fax : +31 (0) 497-384055.

info@bomotoroil.com www.bomotoroil.com

1.4. Emergency telephone number : +31 (0) 497-384847.

Association/Organisation : www.bomotoroil.com.

Hours of operation : Monday - Friday : 8:00-17:00.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Flammable aerosol, Category 1 (Aerosol 1, H222 - H229).

Skin irritation, Category 2 (Skin Irrit. 2, H315).

Eye irritation, Category 2 (Eye Irrit. 2, H319).

Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H336).

Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Extremely flammable (F+, R 12).

Skin irritation (Xi, R 38).

Vapours may cause drowsiness and dizziness (R 67).

Aquatic environmental hazard, chronic toxicity: toxic (N, R 51/53).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

Detergent mixture (see section 15).

Mixture for aerosol application.

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS07



GHS09



GHS02

Signal Word :

DANGER

Product identifiers :

EC 927-510-4

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

EC 931-254-9

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

EC 200-661-7

PROPAN-2-OL

Hazard statements :

H222

Extremely flammable aerosol.

H229

Pressurised container: May burst if heated.

H315

Causes skin irritation.

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H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statements - General :	
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
Precautionary statements - Prevention :	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing spray.
P271	Use only outdoors or in a well-ventilated area.
Precautionary statements - Storage :	
P403	Store in a well-ventilated place.
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C.
Precautionary statements - Disposal :	
P501	Dispose of container to an approved waste disposal plant.

2.3. Other hazards

The mixture does not contain any substances classified as 'Substances of Very High Concern' (SVHC) by the European Chemical Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

Intentional misuse of the preparation by concentrating and inhaling the vapours can be harmful or fatal.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
EC: 927-510-4 REACH: 01-2119475515-33 HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS	GHS07, GHS09, GHS08, GHS02 Dgr Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411	Xn,N,F Xn;R65 Xi;R38 N;R51/53 F;R11 R67		25 <= x % < 50
EC: 931-254-9 REACH: 01-2119484651-34 HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE	GHS07, GHS09, GHS08, GHS02 Dgr Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411	Xn,N,F Xn;R65 Xi;R38 N;R51/53 F;R11 R67		10 <= x % < 25
INDEX: 601-004-00-0 CAS: 106-97-8 EC: 203-448-7 BUTANE (< 0,1 % 1,3-BUTADIENE)	GHS02, GHS04 Dgr Flam. Gas 1, H220	F+ F+;R12	C [1]	10 <= x % < 25
CAS: 67-63-0 EC: 200-661-7 REACH: 01-2119457558-25 PROPAN-2-OL	GHS07, GHS02 Dgr Flam. Liq. 1, H224 Eye Irrit. 2, H319 STOT SE 3, H336	Xi,F Xi;R36 F;R11 R67	[1]	10 <= x % < 25
CAS: 124-38-9 EC: 204-696-9 CARBON DIOXIDE			[1]	1 <= x % < 2.5

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CAS: 110-54-3 EC: 203-777-6 REACH: 01-2119480412-44 N-HEXANE	GHS07, GHS09, GHS08, GHS02 Dgr Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Repr. 2, H361 STOT RE 2, H373 Aquatic Chronic 2, H411	Xn,N,F Repr. Cat. 3;R62 Xn;R48/20-R65 Xi;R38 N;R51/53 F;R11 R67	[1] [2]	0 <= x % < 1
CAS: 110-82-7 EC: 203-806-2 REACH: 01-2119463273-41 CYCLOHEXANE	GHS07, GHS09, GHS08, GHS02 Dgr Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400 M Acute = 1 Aquatic Chronic 1, H410 M Chronic = 1	Xn,N,F Xn;R65 Xi;R38 N;R50/53 F;R11 R67	[1]	0 <= x % < 1

Information on ingredients :

- [1] Substance for which maximum workplace exposure limits are available.
[2] Carcinogenic, mutagenic or reprotoxic (CMR) substance.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

In the event of splashes or contact with eyes :

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists : Get medical advice/attention.

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

See section 11.

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

If you feel unwell, seek medical advice (show the label if possible). If symptoms persist, always call a doctor.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

5.1. Extinguishing media

If the aerosols are exposed to a fire : keep containers cool by spraying with water from a protected position.

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Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO₂)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

In a fire or if heated, a pressure increase will occur and the container may burst. Bursting aerosol containers may be propelled from a fire at high speed. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5.3. Advice for firefighters

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

If possible, stop the product stream. Spray from a protected position till the containers are cool. If possible, take the aerosols outside. Keep public on a distance.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non fire-fighters

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Remove contaminated clothing and protective equipment before entering eating areas.

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Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

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

Do not pierce or burn, even after use.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Do not breathe in aerosols.

Avoid inhaling vapors.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Avoid skin and eye contact with this mixture.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

Never open the packages under pressure.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep out of reach of children.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C.

Storage in a dry, frost-free and well ventilated place.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- European Union (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3	VME-ppm	VLE-mg/m3	VLE-ppm	Notes
124-38-9	9000	5000	-	-	-
110-54-3	72	20	-	-	-
110-82-7	700	200	-	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
106-97-8	600 ppm	750 ppm	-	-	-
67-63-0	400 ppm	500 ppm	-	-	-
124-38-9	5000 ppm	15000 ppm	-	-	-
110-54-3	20 ppm	-	-	-	-
110-82-7	100 ppm	300 ppm	-	-	-

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Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : RCP-TWA-mg/m³ : 1600; RCP-TWA-ppm : 395

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : RCP-TWA-mg/m³ : 1200; RCP-TWA-ppm : 381

- Ireland (Code of practice for the safety, Health and Welfare at Work, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
106-97-8	600 ppm	750 ppm	-	-	-
67-63-0	400 ppm	500 ppm	-	-	-
124-38-9	5000 ppm	15000 ppm	-	-	-
110-54-3	20 ppm	-	-	-	-
110-82-7	100 ppm	300 ppm	-	-	-

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

CYCLOHEXANE (CAS: 110-82-7)

Final use:

Exposure method:
Potential health effects:
DNEL :

Workers.

Dermal contact.
Long term systemic effects.
2016 mg/kg body weight/day

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Short term systemic effects.
700 mg of substance/m³

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Short term local effects.
700 mg of substance/m³

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
700 mg of substance/m³

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term local effects.
700 mg of substance/m³

N-HEXANE (CAS: 110-54-3)

Final use:

Exposure method:
Potential health effects:
DNEL :

Workers.

Dermal contact.
Long term systemic effects.
11 mg/kg body weight/day

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
75 mg of substance/m³

PROPAN-2-OL (CAS: 67-63-0)

Final use:

Exposure method:
Potential health effects:
DNEL :

Workers.

Dermal contact.
Long term systemic effects.
888 mg/kg body weight/day

Exposure method:
Potential health effects:
DNEL :

Inhalation.
Long term systemic effects.
500 mg of substance/m³

Final use:

Exposure method:
Potential health effects:
DNEL :

Consumers.

Ingestion.
Long term systemic effects.
26 mg/kg body weight/day

Exposure method:

Dermal contact.

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Potential health effects: Long term systemic effects.
DNEL : 319 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 89 mg of substance/m3

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 13964 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 5306 mg of substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 1301 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 1377 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 1137 mg of substance/m3

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 300 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 2085 mg of substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 149 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 149 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 477 mg of substance/m3

Predicted no effect concentration (PNEC):

CYCLOHEXANE (CAS: 110-82-7)

Environmental compartment: Soil.
PNEC : 2.99 mg/kg

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Environmental compartment: PNEC :	Fresh water. 0.207 mg/l
Environmental compartment: PNEC :	Sea water. 0.207 mg/l
Environmental compartment: PNEC :	Fresh water sediment. 3.267 mg/kg
Environmental compartment: PNEC :	Marine sediment. 3.267 mg/kg
N-HEXANE (CAS: 110-54-3)	
Environmental compartment: PNEC :	Soil. 0.44 mg/kg
Environmental compartment: PNEC :	Fresh water. 0.086 mg/l
Environmental compartment: PNEC :	Sea water. 0.086 mg/l
Environmental compartment: PNEC :	Fresh water sediment. 1.0 mg/kg
Environmental compartment: PNEC :	Marine sediment. 1.0 mg/kg
PROPAN-2-OL (CAS: 67-63-0)	
Environmental compartment: PNEC :	Soil. 28 mg/kg
Environmental compartment: PNEC :	Fresh water. 140.9 mg/l
Environmental compartment: PNEC :	Sea water. 140.9 mg/l
Environmental compartment: PNEC :	Intermittent waste water. 140.9 mg/l
Environmental compartment: PNEC :	Fresh water sediment. 552 mg/kg
Environmental compartment: PNEC :	Marine sediment. 552 mg/kg
Environmental compartment: PNEC :	Waste water treatment plant. 2251 mg/l

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

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Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

Do not spray in the direction of the eyes.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

- PVA (Polyvinyl alcohol)

Recommended properties :

- Impervious gloves in accordance with standard EN374

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

Not necessary at efficient use. Wash skin that has been in contact with the product, with water and soap.

- Respiratory protection

Avoid breathing vapours.

If the ventilation is insufficient, wear appropriate breathing apparatus.

When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Type of FFP mask :

Wear a disposable half-mask aerosol filter in accordance with standard EN149.

Category :

- FFP1

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A1 (Brown)

Particle filter according to standard EN143 :

- P1 (White)

Do not breathe spray. Use only in well-ventilated areas.

Exposure controls linked to environmental protection

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :

Fluid liquid.

Spray.

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Color :	Colourless, clear
Odour :	Specific
Important health, safety and environmental information	
pH :	Not relevant.
Vapour pressure (50°C) :	Not relevant.
Density :	0.635
Water solubility :	Insoluble.
Chemical combustion heat :	≥ 30 kJ/g.
Flash point :	< 0 °C
Flammability :	Extremely flammable

9.2. Other information

VOC (g/l) :	624.84
Pressure at 20°C :	± 5.0 bar
Pressure at 50°C :	< 10 bar
Water content :	< 0.3 % w/w

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- heat
- flames and hot surfaces
- frost

Protect from sunlight and do not expose to temperatures exceeding 50°C. Keep away from heat and sources of ignition. Storage in a dry, frost-free and well ventilated place.

10.5. Incompatible materials

No materials known by which a dangerous reaction can appear.

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

The product is stable. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Exposure to vapours from solvents in the mixture in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.

Symptoms produced will include headaches, numbness, dizziness, fatigue, muscular asthenia and, in extreme cases, loss of consciousness.

May cause irreversible damage to the skin; namely inflammation of the skin or the formation of erythema and eschar or oedema following exposure up to four hours.

Repeated or prolonged contact with the mixture may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.

Splashes in the eyes may cause irritation and reversible damage

Narcotic effects may occur, such as drowsiness, narcosis, decreased alertness, loss of reflexes, lack of coordination or dizziness.

Effects may also occur in the form of violent headaches or nausea, judgement disorder, giddiness, irritability, fatigue or memory disturbance.

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11.1.1. Substances

Acute toxicity :

CYCLOHEXANE (CAS: 110-82-7)

Oral route :	LD50 > 5000 mg/kg Species : Rat OECD Guideline 401 (Acute Oral Toxicity)
Dermal route :	LD50 > 2000 mg/kg Species : Rabbit OECD Guideline 402 (Acute Dermal Toxicity)
Inhalation route :	LC50 = 32880 mg/l Species : Rat OECD Guideline 403 (Acute Inhalation Toxicity)

N-HEXANE (CAS: 110-54-3)

Oral route :	LD50 = 16000 mg/kg Species : Rat
Dermal route :	LD50 = 3350 mg/kg Species : Rabbit
Inhalation route :	LC50 = 73680 ppm Species : Rat

PROPAN-2-OL (CAS: 67-63-0)

Oral route :	LD50 > 5000 mg/kg Species : Rat
Dermal route :	LD50 > 5000 mg/kg Species : Rabbit
Inhalation route :	LC50 > 20 mg/l Species : Rat

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

Oral route :	LD50 = 16750 mg/kg Species : Rat OECD Guideline 401 (Acute Oral Toxicity)
Dermal route :	LD50 = 3350 mg/kg Species : Rabbit OECD Guideline 402 (Acute Dermal Toxicity)
Inhalation route :	LC50 = 259354 mg/m3 Species : Rat OECD Guideline 403 (Acute Inhalation Toxicity)

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

Oral route :	LD50 > 5840 mg/kg Species : Rat OECD Guideline 401 (Acute Oral Toxicity)
Dermal route :	LD50 > 2920 mg/kg Species : Rat OECD Guideline 402 (Acute Dermal Toxicity)
Inhalation route :	LC50 = 23.3 mg/l Species : Rat

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OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/skin irritation :

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Moderately irritating to skin with prolonged exposure.

n-Hexane : Irritating to skin.

Propan-2-ol : Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Skin contact may cause damage by eczema. Repeated or prolonged skin contact may cause dehydration and defatting.

Cyclohexane : May cause skin irritation in susceptible persons.

Serious damage to eyes/eye irritation :

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : May cause mild, short-lasting discomfort to eyes.

n-Hexane : Not irritating to eyes.

Propan-2-ol : Causes severe eye irritation.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : May cause mild, short-lasting discomfort to eyes.

Cyclohexane : No adverse effects expected. Vapors may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitisation :

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Not likely to be sensitive.

n-Hexane : Not sensitive.

Propan-2-ol : Not sensitive.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Not sensitive.

Cyclohexane : Not sensitive.

Germ cell mutagenicity :

CYCLOHEXANE (CAS: 110-82-7)

No mutagenic effect.

N-HEXANE (CAS: 110-54-3)

No mutagenic effect.

PROPAN-2-OL (CAS: 67-63-0)

No mutagenic effect.

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

No mutagenic effect.

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

No mutagenic effect.

Carcinogenicity :

CYCLOHEXANE (CAS: 110-82-7)

Carcinogenicity Test :

Negative.

No carcinogenic effect.

N-HEXANE (CAS: 110-54-3)

Carcinogenicity Test :

Negative.

No carcinogenic effect.

Species : Rat

PROPAN-2-OL (CAS: 67-63-0)

Carcinogenicity Test :

Negative.

No carcinogenic effect.

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

Carcinogenicity Test :

Negative.

No carcinogenic effect.

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HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

Carcinogenicity Test : Negative.

No carcinogenic effect.

Reproductive toxicant :

CYCLOHEXANE (CAS: 110-82-7)

No toxic effect for reproduction

Study on fertility :

Species : Rat

OECD Guideline 414 (Prenatal Developmental Toxicity Study)

Study on development :

Species : Rat

OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

N-HEXANE (CAS: 110-54-3)

Suspected of damaging fertility.

PROPAN-2-OL (CAS: 67-63-0)

No toxic effect for reproduction

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

No toxic effect for reproduction

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

No toxic effect for reproduction

Specific target organ systemic toxicity - single exposure :

Propan-2-ol : To human : Vapours may cause drowsiness and dizziness.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : May cause drowsiness or dizziness.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : To human : May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure :

Propan-2-ol : To human : Not listed for organ toxicity.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Not likely to cause organ damage.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : To human : Not classified for organ toxicity. For animals : No effects known.

Aspiration hazard :

n-Hexane : May be harmful if swallowed and enters airways.

Propan-2-ol : May result in aspiration into the lungs, causing chemical pneumonia.

Cyclohexane : May be fatal if swallowed and enters airways.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : May be fatal if swallowed and enters airways.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Symptoms of lung oedema mostly reveal after a few hours, intensified by physical effort.
May be fatal if swallowed and enters airways.

11.1.2. Mixture

No toxicological data available for the mixture.

SECTION 12 : ECOLOGICAL INFORMATION

Toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.1. Substances

CYCLOHEXANE (CAS: 110-82-7)

Fish toxicity :

LC50 = 4.53 mg/l

Species : Pimephales promelas

Duration of exposure : 96 h

OECD Guideline 203 (Fish, Acute Toxicity Test)

Crustacean toxicity :

EC50 = 0.9 mg/l

Factor M = 1

Species : Daphnia magna

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	Duration of exposure : 48 h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Algae toxicity :	ECr50 = 3.4 mg/l Species : Selenastrum capricornutum Duration of exposure : 72 h OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOEC = 0.925 mg/l Species : Pseudokirchnerella subcapitata Duration of exposure : 72 h OECD Guideline 201 (Alga, Growth Inhibition Test)
N-HEXANE (CAS: 110-54-3) Fish toxicity :	LC50 = 12.51 mg/l Species : Oncorhynchus mykiss Duration of exposure : 96 h Other guideline
Crustacean toxicity :	EC50 = 21.85 mg/l Species : Daphnia magna Duration of exposure : 48 h Other guideline
Algae toxicity :	ECr50 = 9.29 mg/l Species : Pseudokirchnerella subcapitata Duration of exposure : 72 h Other guideline
CARBON DIOXIDE (CAS: 124-38-9) Fish toxicity :	LC50 = 35 mg/l Species : Oncorhynchus mykiss
PROPAN-2-OL (CAS: 67-63-0) Fish toxicity :	LC50 = 9640 mg/l Duration of exposure : 96 h
Crustacean toxicity :	EC50 > 1000 mg/l Species : Daphnia magna Duration of exposure : 24 h
Algae toxicity :	ECr50 > 1000 mg/l Duration of exposure : 72 h

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

Butane/Isobutane/Propane : Expected to be readily biodegradable.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Expected to be readily biodegradable. Transformation due to hydrolysis and due to photolysis is not expected to be significant. Expected to degrade rapidly in air.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Expected to be readily biodegradable. Transformation due to hydrolysis and due to photolysis is not expected to be significant. Expected to degrade rapidly in air.

12.2.1. Substances

CYCLOHEXANE (CAS: 110-82-7)
Biodegradability : Fast degrading.

N-HEXANE (CAS: 110-54-3)

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Biodegradability : Fast degrading.

CARBON DIOXIDE (CAS: 124-38-9)

Biodegradability : no degradability data is available, the substance is considered as not degrading quickly.

PROPAN-2-OL (CAS: 67-63-0)

Biodegradability : Fast degrading.

HYDROCARBONS, C6, ISOALKANES, < 5 % N-HEXANE

Biodegradability : Fast degrading.

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS

Biodegradability : Fast degrading.

12.3. Bioaccumulative potential

Propan-2-ol : No bioaccumulation.

Butane/Isobutane/Propane : Not expected to be dangerous for the aquatic environment.

Carbon dioxide : Not bioaccumulable.

n-Hexane : Does not significantly accumulate in organisms.

Cyclohexane : Bioaccumulation not expected.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Not determined.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Not determined.

12.3.1. Substances

CYCLOHEXANE (CAS: 110-82-7)

Bioaccumulation : BCF = 167

N-HEXANE (CAS: 110-54-3)

Bioaccumulation : BCF = 501

12.4. Mobility in soil

Propan-2-ol : Product completely soluble in water.

Butane/Isobutane/Propane : If released into the environment, the product will rapidly disperse into the atmosphere where it will undergo photochemical degradation.

Carbon dioxide : No data available.

n-Hexane : No data available.

Cyclohexane : No data available.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : Highly volatile, will spread rapidly in air. It is not expected to extract to the sediment and the fraction fixed substances in the waste water.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : Highly volatile, will spread rapidly in air. It is not expected to extract to the sediment and the fraction fixed substances in the waste water.

12.5. Results of PBT and vPvB assessment

Propan-2-ol : PBT/vPvT : No.

n-Hexane : PBT/vPvT : No.

Cyclohexane : PBT/vPvT : No.

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane : PBT/vPvT : No.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics : PBT/vPvT : No.

12.6. Other adverse effects

Carbon dioxide : Global warming potential. Not dangerous for the ozone layer.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

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Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 - IMDG 2012 - ICAO/IATA 2013).

14.1. UN number

1950

14.2. UN proper shipping name

UN1950=AEROSOLS, flammable

14.3. Transport hazard class(es)

- Classification :

2.1

ADR/RID Label : Limited Quantity : 2.1 is not applicable.

14.4. Packing group

-

14.5. Environmental hazards

- Environmentally hazardous material :



The symbol above is not applicable for "Limited Quantity".

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	2	5F	-	2.1	-	1 L	190 327 344 625	E0	2	D
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ			
	2.1	See SP63	-	SP277	F-D,S-U	63 190 277 327 344 959	E0			
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	2.1	-	-	203	75 kg	203	150 kg	A145 A167 A145 A167 A802	E0	
	2.1	-	-	Y203	30 kg G	-	-	A145 A167 A802	E0	

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

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

No data available.

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- Directive 75/734/CEE modified by directive 2013/10/UE
- Regulation EC 1272/2008 modified by regulation EC 618/2012

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- Container information:

No data available.

- Particular provisions :

No data available.

- Labelling for detergents (EC Regulation No. 648/2004, 907/2006) :

- 30 % and more : aliphatic hydrocarbons

15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the following products or for the substances in these products :

Hydrocarbons, C6, isoalkanes, < 5 % n-hexane

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Propan-2-ol

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Title for H, EUH and R indications mentioned in section 3 :

H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure .
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
R 11	Highly flammable.
R 12	Extremely flammable.
R 36	Irritating to eyes.
R 38	Irritating to skin.
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 62.F3	Possible risk of impaired fertility.
R 65	Harmful: may cause lung damage if swallowed.
R 67	Vapours may cause drowsiness and dizziness.

Abbreviations :

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

CMR: Carcinogenic, mutagenic or reprotoxic.

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS02 : Flame

GHS07 : Exclamation mark

GHS09 : Environment

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Difference Report

Revision: N°5 (15/11/2013) / Version: N°1 (15/11/2013)

Revision: N°4 (06/09/2013) / Version: N°1 (06/09/2013)

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Composition :

CAS: 110-54-3 EC: 203-777-6 REACH: 01-2119480412-44 N-HEXANE	GHS07, GHS09, GHS08, GHS02 Dgr Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Repr. 2, H361 STOT RE 2, H373 Aquatic Chronic 2, H411	Xn,N,F Repr. Cat. 3;R62 Xn;R48/20-R65 Xi;R38 N;R51/53 F;R11 R67	[1] [2]	0 <= x % < 1
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Information on ingredients :

[2] Carcinogenic, mutagenic or reprotoxic (CMR) substance.

SECTION 4 : FIRST AID MEASURES

In the event of splashes or contact with eyes :

~~Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.~~

~~If there is any redness, pain or visual impairment, consult an ophthalmologist.~~

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists :
Get medical advice/attention.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits :

110-54-3	72	20	-	-	-
110-54-3	20 ppm	-	-	-	-
110-54-3	20 ppm	-	-	-	-

Final use: Workers.

N-HEXANE (CAS: 110-54-3)

Final use: Workers.

DNEL : 11 mg/kg body weight/day

DNEL : 75 mg of substance/m3

Predicted no effect concentration (PNEC):

N-HEXANE (CAS: 110-54-3)

PNEC : 0.44 mg/kg

PNEC : 0.086 mg/l

PNEC : 0.086 mg/l

PNEC : 1.0 mg/kg

PNEC : 1.0 mg/kg

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SECTION 11 : TOXICOLOGICAL INFORMATION

Acute toxicity :

N-HEXANE (CAS: 110-54-3)
Oral route : LD50 = 16000 mg/kg
Inhalation route : LC50 = 73680 ppm

Germ cell mutagenicity :

N-HEXANE (CAS: 110-54-3)

Carcinogenicity :

N-HEXANE (CAS: 110-54-3)
Carcinogenicity Test : Negative.
No carcinogenic effect.

Reproductive toxicant :

N-HEXANE (CAS: 110-54-3)
Suspected of damaging fertility.

SECTION 12 : ECOLOGICAL INFORMATION

12.6. Other adverse effects

~~No data available.~~

Carbon dioxide : Global warming potential. Not dangerous for the ozone layer.

12.1.1. Substances

N-HEXANE (CAS: 110-54-3)
Fish toxicity : LC50 = 12.51 mg/l
Species : *Oncorhynchus mykiss*
Other guideline

Crustacean toxicity : EC50 = 21.85 mg/l
Other guideline

Algae toxicity : ECr50 = 9.29 mg/l
Other guideline

12.2.1. Substances

N-HEXANE (CAS: 110-54-3)

12.3.1. Substances

N-HEXANE (CAS: 110-54-3)
Bioaccumulation : BCF = 501

SECTION 16 : OTHER INFORMATION

Title for H, EUH and R indications mentioned in section 3 :

H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure .
R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 62.F3 Possible risk of impaired fertility.

Abbreviations :

CMR: Carcinogenic, mutagenic or reprotoxic.