



## RAVENOL Motorstarter-Spray



ART.-NR. 1360034

400 ml | 1360034-400

**RAVENOL Motorstarter-Spray** ist ein Spray zur Erhöhung der Zündwilligkeit von Benzin- und Dieselmotoren nach längerem Nichtgebrauch oder ungünstigen Witterungsbedingungen.

**RAVENOL Motorstarter-Spray** für Benzin- und Dieselmotoren.

**RAVENOL Motorstarter-Spray** ist eine Zubereitung aus einem Lösemittelgemisch und Druckgas Propan-Butan.

**RAVENOL Motorstarter-Spray** ist für alle Benzin – und Dieselmotoren in PKW, LKW, Baumaschinen, Booten und Rasenmähern geeignet. Schont Batterie und Motor. Bietet einen sicheren Kaltstart auch bei tiefen Temperaturen, wirtschaftlich in der Anwendung. Leicht und schonender Zündvorgang.

## Anwendungshinweis

**RAVENOL Motorstarter-Spray** für ca. 2-3 Sekunden direkt in den Luftfilter oder die Saugleitung sprühen und den Motor sofort starten.

Bei Benzinmotoren reicht es aus beim Starten des Motors leicht Gas zu geben.

Bei Dieselmotoren den Motor ohne Vorglühen und mit durchgetretenem Gaspedal starten.

Achten Sie darauf, vor dem Starten des Motors den Gang heraus zu nehmen.

## Eigenschaften

**RAVENOL Motorstarter-Spray** bietet:

- Eignung für Benzin- und Dieselmotoren
- Sicherer Kaltstart
- Verbesserung der Starteigenschaften auch nach längerem Nichtgebrauch
- Sparsame Anwendung
- Leichten und schonenden Zündvorgang
- Schonung von Batterie und Motor

Eigenschaften

Einheit

Daten

Prüfung nach

Alle Angaben entsprechen nach bestem Wissen dem derzeitigen Stand der Erkenntnisse und unserer Entwicklung. Änderungen bleiben vorbehalten. Alle Bezugnahme auf DIN-Normen dienen nur der Warenbeschreibung und stellen keine Garantie dar. Bei vorliegenden Problemfällen technische Beratung anfordern.

Stand: 27. November 2019

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## RAVENOL Motorstarter-Spray

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

#### 1.1. Product identifier

Trade name/designation:

RAVENOL Motorstarter-Spray

Article No.:

1360034

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

Use of the substance/mixture:

Technical Spray

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

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Jöllenbecker Str. 2

33824 Werther

D

Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 40

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): technik@ravenol.de

#### 1.4. Emergency telephone number

Abt. Technik (Produktsicherheit), 24h: +49 700 24 112 112 (Company ID: RAV) (outside USA/Canada)  
011 49 700 24 112 112 (Company ID: RAV) (inside USA/Canada), +49 5203 9719 0 (Mo-Do 7.30 Uhr -  
16.30 Uhr, Fr 7.30 Uhr - 13.15 Uhr) (Only available during office hours.)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols ( <i>Aerosol 1</i> )	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	
STOT-single exposure ( <i>STOT SE 3</i> )	H336: May cause drowsiness or dizziness.	
Hazardous to the aquatic environment ( <i>Aquatic Chronic 3</i> )	H412: Harmful to aquatic life with long lasting effects.	

#### 2.2. Label elements

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

Hazard pictograms:



**GHS02**  
Flame



**GHS07**  
Exclamation mark

Signal word: Danger

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### Hazard components for labelling:

Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, Iso-alkanes, cyclenes; acetone

#### hazard statements for physical hazards

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

#### hazard statements for health hazards

H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.

#### Hazard statements for environmental hazards

H412	Harmful to aquatic life with long lasting effects.
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### Supplemental Hazard information (EU): -

#### Precautionary statements

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 dust/fume/gas/mist/vapours/spray.
P264.1	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### Precautionary statements Response

P302 + P352	IF ON SKIN: Wash with plenty of water/....
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/Emergency telephone number if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

#### Precautionary statements Storage

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

P501.2	Dispose of contents/container to an appropriate recycling or disposal facility.
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### 2.3. Other hazards

No data available

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### SECTION 3: Composition / information on ingredients

#### \* 3.2. Mixtures

##### Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
<b>CAS No.:</b> 75-28-5 <b>EC No.:</b> 200-857-2 <b>REACH No.:</b> 01-2119485395-27	<b>isobutane</b> Press. Gas (Liq.), Flam. Gas 1 H220-H280	25 - < 50 Vol-%
<b>CAS No.:</b> 1634-04-4 <b>EC No.:</b> 216-653-1	<b>tert-butyl methyl ether</b> Flam. Liq. 2, Skin Irrit. 2 <b>Danger</b> H225-H315	20 - < 25 Vol-%
<b>CAS No.:</b> 64742-49-0 <b>EC No.:</b> 921-024-6 <b>REACH No.:</b> 01-2119475514-35	<b>Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, &lt;5% n-hexane</b> STOT SE 3, Flam. Liq. 2, Skin Irrit. 2, Asp. Tox. 1, Aquatic Chronic 2 <b>Danger</b> H225-H304-H315-H336-H411	5 - < 10 Vol-%
<b>CAS No.:</b> 64742-49-0 <b>EC No.:</b> 927-510-4 <b>REACH No.:</b> 01-2119475515-33	<b>Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes</b> STOT SE 3, Flam. Liq. 2, Skin Irrit. 2, Asp. Tox. 1, Aquatic Chronic 2 <b>Danger</b> H225-H304-H315-H336-H411	5 - < 10 Vol-%
<b>CAS No.:</b> 67-64-1 <b>EC No.:</b> 200-662-2 <b>REACH No.:</b> 01-2119471330-49	<b>acetone</b> STOT SE 3, Flam. Liq. 2, Eye Irrit. 2 <b>Danger</b> H225-H319-H336-EUH066	5 - < 10 Vol-%
<b>CAS No.:</b> 74-98-6 <b>EC No.:</b> 200-827-9 <b>REACH No.:</b> 01-2119486944-21	<b>propane</b> Press. Gas (Liq.), Flam. Gas 1 H220-H280	5 - < 10 Vol-%
<b>CAS No.:</b> 106-97-8 <b>EC No.:</b> 203-448-7 <b>REACH No.:</b> 01-2119474691-32	<b>butane</b> Press. Gas (Liq.), Flam. Gas 1 H220-H280	1 - < 3 Vol-%
<b>CAS No.:</b> 67-56-1 <b>EC No.:</b> 200-659-6	<b>methanol</b> Flam. Liq. 2, Acute Tox. 3, STOT SE 1 <b>Danger</b> H225-H301-H311-H331-H370	0.1 - < 1 Vol-%

Full text of H- and EUH-phrases: see section 16.

### SECTION 4: First aid measures

#### \* 4.1. Description of first aid measures

##### General information:

First aider: Pay attention to self-protection! Remove persons to safety.

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Never give anything by mouth to an unconscious person or a person with cramps.

##### Following inhalation:

Provide fresh air. Consult a doctor immediately in the case of inhaling spray mist and show him packing or label.

##### In case of skin contact:

In case of skin contact, wash immediately with large quantities of water/polyethylene glycol 400 (Roticlean). Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

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### After eye contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

### After ingestion:

Rinse mouth immediately and drink plenty of water. Observe risk of aspiration if vomiting occurs.

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

No information available.

### 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>)  
Extinguishing powder  
Foam

#### Unsuitable extinguishing media:

Full water jet

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

Flammable aerosol. Vapours can form explosive mixtures with air.  
Combustible

#### Hazardous combustion products:

Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Gases/vapours, toxic

### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

### 5.4. Additional information

Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

##### Personal precautions:

Use personal protection equipment. Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Do not breathe gas/vapour. Avoid contact with skin, eyes and clothes.

#### 6.1.2. For emergency responders

##### Personal protection equipment:

Use appropriate respiratory protection.

### 6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion.

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

#### For containment:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

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### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

### \* 6.5. Additional information

No data available

## SECTION 7: Handling and storage

### \* 7.1. Precautions for safe handling

#### Protective measures

##### Advices on safe handling:

Pressurised container: May burst if heated. Do not pierce or burn, even after use. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Do not breathe gas/vapour/aerosol.

##### Fire prevent measures:

Do not spray on naked flames or any incandescent material. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

##### Measures to prevent aerosol and dust generation:

Use only in well-ventilated areas.

##### Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

When using do not eat, drink or smoke. Avoid contact with eyes and skin.

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

#### Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### Hints on storage assembly:

Do not store together with: Oxidizing agent

Pyrophoric or self-heating substances

**Storage class:** 2B - Aerosol dispensers and lighters

#### Further information on storage conditions:

Protect against: Frost, UV-radiation/sunlight

maximum storage temperature: 50 °C

### 7.3. Specific end use(s)

#### Recommendation:

Observe technical data sheet.

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### SECTION 8: Exposure controls/personal protection

#### \* 8.1. Control parameters

##### 8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
TRGS 900 (DE)	isobutane CAS No.: 75-28-5	① 1,000 ppm (2,400 mg/m <sup>3</sup> ) ② 4,000 ppm (9,600 mg/m <sup>3</sup> )
IOELV (EU)	tert-butyl methyl ether CAS No.: 1634-04-4	① 50 ppm (183.5 mg/m <sup>3</sup> ) ② 100 ppm (367 mg/m <sup>3</sup> )
TRGS 900 (DE)	tert-butyl methyl ether CAS No.: 1634-04-4	① 50 ppm (180 mg/m <sup>3</sup> ) ② 75 ppm (270 mg/m <sup>3</sup> )
IOELV (EU)	acetone CAS No.: 67-64-1	① 500 ppm (1,210 mg/m <sup>3</sup> )
TRGS 900 (DE)	acetone CAS No.: 67-64-1	① 500 ppm (1,200 mg/m <sup>3</sup> ) ② 1,000 ppm (2,400 mg/m <sup>3</sup> )
TRGS 900 (DE)	propane CAS No.: 74-98-6	① 1,000 ppm (1,800 mg/m <sup>3</sup> ) ② 4,000 ppm (7,200 mg/m <sup>3</sup> )
TRGS 900 (DE)	butane CAS No.: 106-97-8	① 1,000 ppm (2,400 mg/m <sup>3</sup> ) ② 4,000 ppm (9,600 mg/m <sup>3</sup> )
IOELV (EU)	methanol CAS No.: 67-56-1	① 200 ppm (260 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
TRGS 900 (DE)	methanol CAS No.: 67-56-1	① 200 ppm (270 mg/m <sup>3</sup> ) ② 800 ppm (1,080 mg/m <sup>3</sup> ) ⑤ (kann über die Haut aufgenommen werden)

##### 8.1.2. Biological limit values

Limit value type (country of origin)	Substance name	Limit value	① parameter ② Test material ③ Time of sampling ④ Remark
TRGS 903 (DE)	acetone CAS No.: 67-64-1	80 mg/L	① Aceton ② Urin ③ Expositionsende bzw. Schichtende
TRGS 903 (DE)	methanol CAS No.: 67-56-1	30 mg/L	① Methanol ② Urin ③ bei Langzeitexposition, Expositionsende bzw. Schichtende



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### 8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
tert-butyl methyl ether CAS No.: 1634-04-4	178.5 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclene s CAS No.: 64742-49-0	2,085 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
acetone CAS No.: 67-64-1	1,210 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)
methanol CAS No.: 67-56-1	260 mg/m <sup>3</sup>	① DNEL worker ② DNEL acute inhalative (local)
methanol CAS No.: 67-56-1	260 mg/m <sup>3</sup>	① DNEL worker ② DNEL long-term inhalative (systemic)

### \* 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

See section 7. Additional information on plant design:

If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Do not breathe gas/vapour/aerosol.

#### 8.2.2. Personal protection equipment

##### Eye/face protection:

Eye/face protection. Eye glasses with side protection

##### Skin protection:

Hand protection

Suitable material: NBR (Nitrile rubber), PVC (Polyvinyl chloride), CR (polychloroprene, chloroprene rubber)

Thickness of the glove material:  $\geq 0,4$  mm

Breakthrough time (maximum wearing time) 480 min

Breakthrough times and swelling properties of the material must be taken into consideration.

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.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Tested protective gloves must be worn: DIN EN 374

Suitable protective clothing: Protective clothing:

##### Respiratory protection:

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Suitable respiratory protection apparatus: Combination filtering device (EN 14387)

Filtering device with filter or ventilator filtering device of type: AX

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

##### Other protection measures:

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

#### 8.2.3. Environmental exposure controls

No data available

### 8.3. Additional information

No data available



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### SECTION 9: Physical and chemical properties

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

##### Appearance

Physical state: Aerosol

Colour: colourless

Odour: not determined

##### Safety relevant basis data

parameter		at °C	Method	Remark
pH	<i>not determined</i>			
Melting point	<i>not determined</i>			
Freezing point	<i>not determined</i>			
Initial boiling point and boiling range	-40 °C			
Decomposition temperature (°C):	<i>not determined</i>			
Flash point	-80 °C			
Evaporation rate	<i>not determined</i>			
Ignition temperature in °C	<i>No data available</i>			
Upper/lower flammability or explosive limits	1 - 11 Vol-%			
Vapour pressure	<i>not determined</i>			
Vapour density	<i>not determined</i>			
Relative density	0.7429 g/cm <sup>3</sup>			
Bulk density	<i>not determined</i>			
Water solubility	<i>not determined</i>			
Partition coefficient: n-octanol/water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	<i>not determined</i>	40 °C		

#### 9.2. Other information

Relative density: The information relates to the active ingredient.

### SECTION 10: Stability and reactivity

#### \* 10.1. Reactivity

Extremely flammable aerosol.

#### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

#### \* 10.3. Possibility of hazardous reactions

No known hazardous reactions.

#### 10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

#### 10.5. Incompatible materials

No information available.

#### \* 10.6. Hazardous decomposition products

Nitrogen oxides (NO<sub>x</sub>)

Carbon monoxide

Carbon dioxide (CO<sub>2</sub>)

Gases/vapours, toxic

Health hazard

#### Further information

Do not mix with other chemicals.

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### SECTION 11: Toxicological information

#### \* 11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
1634-04-4	tert-butyl methyl ether	<b>LD<sub>50</sub> oral:</b> 3,866 mg/kg (Rat) <b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rat) <b>LC<sub>50</sub> inhalative:</b> 85 mg/l 4 h (Rat)
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, <5% n-hexane	<b>LD<sub>50</sub> oral:</b> >5,000 mg/kg (Rat) <b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rabbit) <b>LC<sub>50</sub> inhalative:</b> >23.3 mg/l 4 h (Rat)
64742-49-0	Hydrocarbons, C7, n-alkanes, Isoalkanes, cycloalkanes	<b>LD<sub>50</sub> oral:</b> 5,500 mg/kg (Rat) <b>LD<sub>50</sub> dermal:</b> 2,770 mg/kg (Rat) <b>LC<sub>50</sub> inhalative:</b> 23.3 mg/l (Rat)
67-64-1	acetone	<b>LD<sub>50</sub> oral:</b> 5,000 mg/kg (Rat) RTECS <b>LD<sub>50</sub> dermal:</b> 20,000 mg/kg (Rabbit) ICLUID <b>LC<sub>50</sub> inhalative:</b> 76 mg/l 4 h (Rat)
67-56-1	methanol	<b>LD<sub>50</sub> oral:</b> 5,628 mg/kg (Rat) <b>LD<sub>50</sub> dermal:</b> 17,000 mg/kg (Rabbit) <b>LC<sub>50</sub> inhalative:</b> 79.43 mg/l (Mouse) <b>ATE inhalativ Dämpfe:</b> 0.5 mg/l

#### Acute oral toxicity:

No information available.

#### Acute dermal toxicity:

No information available.

#### Acute inhalation toxicity:

No information available.

#### Skin corrosion/irritation:

skin irritation. Frequently or prolonged contact with skin may cause dermal irritation.

#### Serious eye damage/irritation:

Causes serious eye irritation.

#### Respiratory or skin sensitisation:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

#### Germ cell mutagenicity:

No indications of human germ cell mutagenicity exist.

#### Carcinogenicity:

No indication of human carcinogenicity.

#### Reproductive toxicity:

No indications of human reproductive toxicity exist.

#### STOT-single exposure:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

#### STOT-repeated exposure:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

#### Aspiration hazard:

Pamatojoties uz pieejamajiem datiem, klasifikācijas kritēriji nav izpildīti.

#### Additional information:

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

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### SECTION 12: Ecological information

#### \* 12.1. Toxicity

CAS No.	Substance name	Toxicological information
1634-04-4	tert-butyl methyl ether	<b>LC<sub>50</sub></b> : 672 mg/l 4 d (Oncorhynchus mykiss (Rainbow trout)) <b>ErC<sub>50</sub></b> : >800 mg/l 3 d (Desmodesmus subspicatus) <b>EC<sub>50</sub></b> : 651 mg/l 2 d
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, <5% n-hexane	<b>LC<sub>50</sub></b> : 1 - 10 mg/l 4 d (Pimephales promelas (fathead minnow)) <b>ErC<sub>50</sub></b> : >10 - 100 mg/l 3 d (Pseudokirchneriella subcapitata) <b>EC<sub>50</sub></b> : >1 - 10 mg/l 2 d (Daphnia magna (Big water flea))
64742-49-0	Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes	<b>LC<sub>50</sub></b> : 10 mg/l 4 d <b>ErC<sub>50</sub></b> : 100 mg/l 3 d <b>EC<sub>50</sub></b> : 10 mg/l 2 d
67-64-1	acetone	<b>LC<sub>50</sub></b> : 5,540 mg/l 4 d <b>EC<sub>50</sub></b> : 6,100 mg/l 2 d
67-56-1	methanol	<b>LC<sub>50</sub></b> : 11,850 mg/l 4 d (Lepomis macrochirus (Bluegill)) <b>ErC<sub>50</sub></b> : 20,300 mg/l 4 d (Pseudokirchneriella subcapitata) <b>EC<sub>50</sub></b> : 10,000 mg/l 2 d (Daphnia magna (Big water flea))

#### Aquatic toxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### 12.2. Persistence and degradability

##### Abiotic degradation:

The product has not been tested.

#### \* 12.3. Bioaccumulative potential

CAS No.	Substance name	Log K <sub>OC</sub>	Bioconcentration factor (BCF)
75-28-5	isobutane	2.76	
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, <5% n-hexane	5.2	
67-64-1	acetone	-0.24	
74-98-6	propane	2.36	
106-97-8	butane	2.89	
67-56-1	methanol	-0.74	

#### Bioconcentration factor (BCF):

The product has not been tested.

#### 12.4. Mobility in soil

The product has not been tested.

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### \* 12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
75-28-5	isobutane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
1634-04-4	tert-butyl methyl ether	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
64742-49-0	Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cycli cs, <5% n-hexane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
64742-49-0	Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
67-64-1	acetone	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
74-98-6	propane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
106-97-8	butane	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
67-56-1	methanol	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6. Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

#### Waste code packaging:

15 01 04	Metallic packaging
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### Waste treatment options

#### Appropriate disposal / Product:

Dispose of waste according to applicable legislation.

#### Appropriate disposal / Package:

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

### 13.2. Additional information

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

## SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)
<b>14.1. UN-No.</b>		
UN 1950	UN 1950	UN 1950
<b>14.2. UN proper shipping name</b>		
AEROSOLS	AEROSOLS	AEROSOLS

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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	
<b>14.3. Transport hazard class(es)</b>			
 2.1	 2.1	 2.1	
<b>14.4. Packing group</b>			
not determined		not determined	
<b>14.5. Environmental hazards</b>			
No	No	No	
<b>14.6. Special precautions for user</b>			
<b>Special provisions:</b> <b>Limited quantity (LQ):</b> 1L <b>Hazard identification number (Kemler No.):</b> <b>Classification code:</b> 5F <b>tunnel restriction code:</b> (D) <b>Remark:</b>	<b>Special provisions:</b> <b>Limited quantity (LQ):</b> 1L <b>Classification code:</b> 5F <b>Remark:</b>	<b>Special provisions:</b> <b>Limited quantity (LQ):</b> 1000mL <b>EmS-No.:</b> F-D; S-U <b>Remark:</b>	

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

## SECTION 15: Regulatory information

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

#### 15.1.1. EU legislation

##### Other regulations (EU):

Use restriction according to REACH annex XVII, no.:

entry 28: isobutane; Hydrocarbons, C6-C7, n-alkanes, iso-alkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, Isoalkanes, cyclenes; butane

Directive 2010/75/EU on industrial emissions: No information available.

Directive 2004/42/EC on the limitation of emissions of volatile organic compounds: EU 94,6; CH71,7  
Aerosol directive (75/324/EEC)

#### 15.1.2. National regulations

##### [DE] National regulations

##### Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

##### Störfallverordnung

##### for substances contained in the product:

E2 Hazardous to the aquatic environment in Category Chronic 2

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### Technische Anleitung Luft (TA-Luft)

#### Klasse 1:

5.2.5.: Total organic carbon (TOC):  $m \geq 0,50$  kg/h: Concentration 50 mg/m<sup>3</sup>

#### Anteil 1:

41.16 %

### Water hazard class (WGK)

#### WGK:

2 - deutlich wassergefährdend

#### Source:

Self-classification (mixture; calculation rule).

### Berufsgenossenschaftliche Vorschriften (BGV)

Berufsgenossenschaftliche Informationen (BGI) 868

Berufsgenossenschaftliche Regeln (BGR) 189, 190, 192, 195

### 15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

### 15.3. Additional information

No data available

## SECTION 16: Other information

\*

### 16.1. Indication of changes

1.4.	Emergency telephone number
3.2.	Mixtures
4.1.	Description of first aid measures
4.2.	Most important symptoms and effects, both acute and delayed
5.2.	Special hazards arising from the substance or mixture
6.5.	Additional information
7.1.	Precautions for safe handling
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
10.1.	Reactivity
10.3.	Possibility of hazardous reactions
10.6.	Hazardous decomposition products
11.1.	Information on toxicological effects
12.1.	Toxicity
12.3.	Bioaccumulative potential
12.5.	Results of PBT and vPvB assessment
14.6.	Special precautions for user
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes
16.5.	Relevant R-, H- and EUH-phrases (Number and full text)

### 16.2. Abbreviations and acronyms

See overview table at [www.euphrac.eu](http://www.euphrac.eu)

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### 16.3. Key literature references and sources for data

67/548/EEC - Dangerous Substances Directive  
1999/45/EEC - Dangerous Preparations Directive  
EC 1907/2006 - REACH Regulation  
1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006  
Regulation (EC) No 1907/2006 (REACH), Annex II  
European Chemicals Agency (ECHA), C & L classification and labeling inventory  
European Chemicals Agency (ECHA), ECHA CHEM Registered substances  
OECD The Global Portal to Information on Chemical Substances (ChemPortal)  
Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances  
Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)

### 16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols ( <i>Aerosol 1</i> )	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	
STOT-single exposure ( <i>STOT SE 3</i> )	H336: May cause drowsiness or dizziness.	
Hazardous to the aquatic environment ( <i>Aquatic Chronic 3</i> )	H412: Harmful to aquatic life with long lasting effects.	

### \* 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs. (...)
H411	Toxic to aquatic life with long lasting effects.

#### Supplemental Hazard information (EU)

EUH066	Repeated exposure may cause skin dryness or cracking.
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### 16.6. Training advice

No data available

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

\* Data changed compared with the previous version