Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

1.1. Product identifier

Trade name/designation:

RAVENOL Lotus Glasklar

Other means of identification:
RAVENOL Lotus Glas Cleaner

Article No.:
1360026

UFI:
G8RN-6CPY-H215-KPYY

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

Use of the substance/mixture:
Cleaning agent

1.3. Details of the supplier of the safety data sheet

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

Ravensberger Schmierstoffvertrieb GmbH
Produktsicherheit
Jöllenbecker Str. 2
33824 Werther
Germany
Telephone: +49 5203 9719 0
Telefax: +49 5203 9719 40
E-mail: kontakt@ravenol.de
Website: www.ravenol.de

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

1.4. Emergency telephone number

24 hr. emergency phone number, 24h: +1 872 5888271 (Contract ID: RAV)

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
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	Calculation method.

2.2. Label elements

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

Hazard pictograms:



GHS07
Exclamation mark

Signal word: Warning

Hazard components for labelling:
2-butoxyethanol

Hazard statements for health hazards	
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Supplemental hazard information: none

Precautionary statements Prevention	
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection/face protection.

Precautionary statements Response	
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Precautionary statements Disposal	
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Additional information:
Regulation (EC) No. 648/2004 [Detergents regulation]:
perfumes, Limonene

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 111-76-2 EC No.: 203-905-0 Index No.: 603-014-00-0 REACH No.: 01-2119475108-36	**2-butoxyethanol** Acute Tox. 3 (H331), Acute Tox. 4 (H302), Eye Irrit. 2 (H319), Skin Irrit. 2 (H315) Danger **Acute Toxicity Estimate** ATE (oral) 1,200 mg/kg ATE (dermal) 435 mg/kg ATE (inhalation, gases) 800 ppmV ATE (inhalation, vapour) 3 mg/L	10 – 25 weight-%
CAS No.: 67-63-0 EC No.: 200-661-7 Index No.: 603-117-00-0 REACH No.: 01-2119457558-25	**propan-2-ol** Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336) Danger **Acute Toxicity Estimate** ATE (oral) 5,280 mg/kg ATE (dermal) > 2,000 mg/kg ATE (inhalation, vapour) 47.5 mg/L	≥ 2.5 – < 10 weight-%

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:
Provide fresh air. Consult a doctor immediately.

In case of skin contact:
After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. Consult a doctor immediately.
Causes skin irritation.

After eye contact:
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Causes serious eye irritation.

Following ingestion:
Rinse mouth thoroughly with water. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Self-protection of the first aider:
Use personal protection equipment. No direct artificial respiration to be given by first aider.

4.2. Most important symptoms and effects, both acute and delayed
Causes skin irritation.
Causes serious eye irritation.

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:
Co-ordinate fire-fighting measures to the fire surroundings.
Carbon dioxide (CO2)
Extinguishing powder
alcohol resistant foam
Use water spray jet to protect personnel and to cool endangered containers.

Unsuitable extinguishing media:
Full water jet

5.2. Special hazards arising from the substance or mixture
During heating or in case of fire, toxic gases is possible.

Hazardous combustion products:
Nitrogen oxides (NOx), Carbon monoxide, Carbon dioxide (CO2), Sulphur dioxide (SO2)
During heating or in case of fire, toxic gases is possible.

5.3. Advice for firefighters
In case of fire: Wear self-contained breathing apparatus.

5.4. Additional information
Do not inhale explosion and combustion gases. Move undamaged containers from immediate hazard area if it can be done safely.
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. Avoid contact with skin, eyes and clothes. Special danger of slipping by leaking/spilling product.

Protective equipment:
Personal protection equipment: see section 8

Emergency procedures:
Remove persons to safety. Provide adequate ventilation.

6.1.2. For emergency responders
Personal protection equipment:
Use appropriate respiratory protection.

6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

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

For cleaning up:
Clean contaminated articles and floor according to the environmental legislation.

Other information:
Treat the recovered material as prescribed in the section on waste disposal.

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

Clear spills immediately. Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:
Wear personal protection equipment (refer to section 8).
When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Do not put any product-impregnated cleaning rags into your trouser pockets. Clear spills immediately. Use appropriate container to avoid environmental contamination.

Fire prevent measures:
No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation:
Use only in well-ventilated areas.

Environmental precautions:
Shafts and sewers must be protected from entry of the product.

Advices on general occupational hygiene

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

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:
Keep container tightly closed in a cool, well-ventilated place.

Packaging materials:
Keep only in the original container in a cool, well-ventilated place.

Requirements for storage rooms and vessels:
No special measures are necessary. Shafts and sewers must be protected from entry of the product.

Hints on storage assembly:
TRGS 510

Storage class (TRGS 510, Germany): 10 – Combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions:
Keep away from heat. Protect from direct sunlight. Protect against: Frost
Keep container tightly closed.

7.3. Specific end use(s)

Recommendation:
Observe technical data sheet.

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
MY from 1 Jan 2000	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (96.7 mg/m³) ⑤ (resapan melalui kulit hendaklah diambil kira)
PL	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 98 mg/m³ ② 200 mg/m³ ⑤ (może przenikać przez skórę do organizmu) skóra
NO	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (50 mg/m³) ⑤ (kan absorberes gjennom huden) HE
HTP (FI)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (250 mg/m³) ⑤ (voivat imeytyä ihon läpi) iho
LT from 15 Oct 2007	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (50 mg/m³) ② 20 ppm (100 mg/m³) ⑤ (tikėtinas įsisavinimas per odą) O
DK from 28 Jun 2022	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (kan optages gennem huden) EH
SE from 1 Jun 2016	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (50 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (kan absorberas genom huden)
NPEL (SK) from 23 Nov 2011	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (rátajte so vstrebávaním cez pokožku) K
TRGS 900 (DE) from 29 Mar 2019	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (49 mg/m³) ② 20 ppm (98 mg/m³) ⑤ (kann über die Haut aufgenommen werden) EU, DFG, H, Y
WEL (GB) from 17 Jan 2020	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 25 ppm (123 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (may be absorbed through the skin)
MAK (AT)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	② 40 ppm (200 mg/m³) ⑤ (max. 4x30 min./Schicht, kann über die Haut aufgenommen werden) H
ES	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (245 mg/m³) ⑤ (puede ser absorbido a través dérmica) vía dérmica, VLI, VLB®
BG	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (трябва да се очаква абсорбиране през кожата)
HR	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (mora se uzeti u obzir prodiranje kroz kožu) koža

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
BE	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (peut être absorbé par la peau) D
CZ from 1 Jan 2024	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 40.7 ppm (200 mg/m³) ⑤ (může pronikat pokožkou) D, I, B
IE	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (may be absorbed through the skin) SK, IOELV
EE from 17 Jan 2020	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (naha kaudu kergesti absorbeeruvad ained) A, S
LV	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (var absorbet caur adu) Āda
Alberta (CA)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (97 mg/m³) ⑤ 3
BC (CA)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm
IOELV (EU)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (may be absorbed through the skin)
VRC (FR) from 3 May 2021	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (49 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (peut être absorbé par la peau)
SI from 4 Dec 2018	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (računati je treba z možnostjo prodiranja skozi kožo) K, Y, BAT, EU1
TW	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 25 ppm (121 mg/m³) ⑤ (##########)
KR	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (97 mg/m³) ⑤ (### ## ### #### ##)
IS	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (100 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (efnið getur auðveldlega borist inn í líkamann gegnum húð) H
HU from 1 Apr 2024	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (felvehető a bőrön keresztül) b, i, T
GR from 1 Oct 2016	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 25 ppm (120 mg/m³) ⑤ (αναμένετε απορρόφηση από το δέρμα)
NL from 1 Jan 2023	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20.4 ppm (100 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (kan door de huid in het lichaam worden opgenomen) H

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
JP from 11 May 2017	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	③ 20 ppm (97 mg/m³) ⑤ (####################)
TR	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (cilt yoluyla alınabilir) Deri
CN from 1 Apr 2020	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 97 mg/m³
EE from 17 Jan 2020	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (Butüültsellosolv (2-butoksüetanool, o-butüületüleenglükool, etüleenglükoolmono-butüüleeter)) S
RU from 2 Jan 1900	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	③ 5 mg/m³
IDLH (US) from 1 Jan 1994	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 700 ppm
RO from 22 Aug 2018	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ② 50 ppm (246 mg/m³) ⑤ (2-Butoxietanol, e de asteptat asimilarea prin piele) P
OSHA (US)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 50 ppm (240 mg/m³) ⑤ (may be absorbed through the skin)
NIOSH (US)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 5 ppm (24 mg/m³) ⑤ (may be absorbed through the skin)
ACGIH (US)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (97 mg/m³)
MAK (AT)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m³) ⑤ (kann über die Haut aufgenommen werden) H
Québec (CA) from 1 Apr 2022	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm
CH from 1 Jan 2024	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	① 10 ppm (49 mg/m³) ② 20 ppm (98 mg/m³) ⑤ (kann über die Haut aufgenommen werden) H SSC B; Messmeth: INRS HSE NIOSH
BE from 1 Dec 2011	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³)
CZ from 20 May 2021	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ I
PL from 12 Jun 2018	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 900 mg/m³ ② 1,200 mg/m³ ⑤ (może przenikać przez skórę do organizmu) skóra
NO	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 100 ppm (245 mg/m³)

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
IE from 17 Jan 2020	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm ② 400 ppm ⑤ (may be absorbed through the skin) Sk
HTP (FI)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 250 ppm (620 mg/m³)
LT	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 150 ppm (350 mg/m³) ② 250 ppm (600 mg/m³) ⑤
SE	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 150 ppm (350 mg/m³) ③ 250 ppm (600 mg/m³)
MY from 1 Jan 2000	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (983 mg/m³)
NPEL (SK) from 23 Nov 2011	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³)
MAK (AT)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	② 800 ppm (2,000 mg/m³) ⑤ (max. 4x15 min./Schicht)
BG from 17 Jan 2020	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 980 mg/m³ ② 1,225 mg/m³
DK	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (490 mg/m³) ② 400 ppm (980 mg/m³)
HR	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (999 mg/m³) ② 500 ppm (1,250 mg/m³)
CN	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 350 mg/m³ ② 700 mg/m³
RO	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 81 ppm (200 mg/m³) ② 203 ppm (500 mg/m³)
ES from 1 Jan 2011	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ VLB®, s
EE	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 150 ppm (350 mg/m³) ② 250 ppm (600 mg/m³)
Alberta (CA)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (492 mg/m³) ② 400 ppm (984 mg/m³)
LV	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 350 mg/m³ ② 600 mg/m³
BC (CA)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm ② 400 ppm
JP	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	③ 400 ppm (980 mg/m³)
VLA (FR)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	② 400 ppm (980 mg/m³)

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
MAK (AT)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³)
SI from 4 Oct 2018	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ Y, BAT
WEL (GB)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (999 mg/m³) ② 500 ppm (1,250 mg/m³)
TW	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (983 mg/m³)
KR	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (480 mg/m³) ② 400 ppm (980 mg/m³)
IS	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (490 mg/m³) ⑤ (efnið getur auðveldlega borist inn í líkamann gegnum húð) H
CH from 1 Jan 2024	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ SSC B; Messmeth: INRS NIOSH
HU from 1 Apr 2024	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ (felvehető a bőrön keresztül) b, i, R
RU	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 10 mg/m³ ③ 50 mg/m³
GR from 1 Oct 2016	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (980 mg/m³) ② 500 ppm (1,225 mg/m³)
IDLH (US) from 1 Jan 1994	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 2,000 ppm [10% LEL]
Québec (CA) from 1 Apr 2022	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm ② 400 ppm
OSHA (US)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (980 mg/m³)
NIOSH (US)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 400 ppm (980 mg/m³) ② 500 ppm (1,225 mg/m³)
ACGIH (US) from 1 Mar 2014	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (492 mg/m³) ② 400 ppm (984 mg/m³)
TRGS 900 (DE)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	① 200 ppm (500 mg/m³) ② 400 ppm (1,000 mg/m³) ⑤ DFG, Y

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
VLB (ES)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	200 mg/g creatinina	① Ácido butoxiacético ② orina ③ fin de exposición o fin de turno
OEL-B (JP)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	200 mg/g ## ####	① ###### ② # ③ ############
BMGV (GB)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	240 mmol/mol creatinine	① Butoxyacetic acid ② urine ③ end of exposure or end of shift
ACGIH-BEI (US)	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	200 mg/g creatinine	① Butoxyacetic acid (BAA) ② urine ③ end of exposure or end of shift
BAT (CH) from 1 Jan 2022	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	150 mg/g Creatinin	① 2-Butoxyessigsäure (nach Hydrolyse) ② Urin ③ bei Langzeitexposition, Expositionsende bzw. Schichtende
TRGS 903 (DE) from 11 Jul 2017	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	150 mg/g Creatinin	① Nach Hydrolyse: Butoxyessigsäure ② Urin ③ bei Langzeitexposition, Expositionsende bzw. Schichtende
BAT (SI) from 4 Dec 2018	**2-butoxyethanol** CAS No.: 111-76-2 EC No.: 203-905-0	150	① butoksi ocetna kislina; po hidrolizi: ② urin ③ po več zaporednih delavnikih, ob koncu delovne izmene
BAT (CH) from 1 Jan 2011	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① Aceton ② Urin ③ Expositionsende bzw. Schichtende
BAT (CH) from 1 Jan 2011	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① Aceton ② Blut ③ Expositionsende bzw. Schichtende
VLB (ES)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	40 mg/L	① acetona ② orina ③ en caso de exposición por largo tiempo, fin de exposición o fin de turno
TRGS 903 (DE) from 1 Nov 2012	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① Aceton ② Blut ③ Expositionsende bzw. Schichtende
TRGS 903 (DE) from 1 Nov 2012	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① Aceton ② Urin ③ Expositionsende bzw. Schichtende
ACGIH-BEI (US)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	40 mg/L	① Acetone in urine ② urine ③ end of shift at end of work week
VLBO (RO)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	50 mg/L	① Alcohol izopropilic ② urina ③ finalul expunerii, resp. finalul schimbului

Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
BAT (SI) from 4 Dec 2018	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① aceton ② kri ③ ob koncu delovne izmene
BAT (SI) from 4 Oct 2018	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① aceton ② urin ③ ob koncu delovne izmene
BIO (HU) from 7 Feb 2020	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	25 mg/L	① Aceton ② vizelet ③ expozíció vége illetve műszak vége
BIO (HR)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	50 mg/L	① aceton ② krv ③ kraj izloženosti, odnosno kraj smjene
BIO (HR)	**propan-2-ol** CAS No.: 67-63-0 EC No.: 200-661-7	50 mg/L	① aceton ② urin ③ kraj izloženosti, odnosno kraj smjene

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0	98 mg/m³	① DNEL worker ② Long-term – inhalation, systemic effects

8.2. Exposure controls

8.2.1. Appropriate engineering controls

See section 7. No additional measures necessary.

8.2.2. Personal protection equipment



Eye/face protection:

During transfer: Eye glasses with side protection
DIN-/EN-Norms EN 166

Skin protection:

Hand protection
Suitable material: NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)
Thickness of the glove material: ≥ 0,4 mm
Breakthrough 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.
Tested protective gloves must be worn: EN ISO 374
Suitable protective clothing: Protective clothing

Respiratory protection:

Usually no personal respirative protection necessary.

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

8.3. Additional information

See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid
Form: Liquid
Colour: colourless
Odour: Lemon
flammability: Yes

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	6	20 °C	
Melting point	*No data available*		
Freezing point	*No data available*		
Initial boiling point and boiling range	> 80 °C		
Flash point	52 °C		② No hazardous good class 3 according UN Manual of Tests and Criteria, part III, section 32.2.5 (combustibility is not sustained).
Evaporation rate	*No data available*		
Auto-ignition temperature	240 °C		
Upper/lower flammability or explosive limits	1.1 – 12 Vol-%		
Vapour pressure	*No data available*		
Vapour density	*No data available*		
Density	0.981 g/cm³	20 °C	
Bulk density	*not applicable*		
Water solubility	completely miscible		
Dynamic viscosity	*No data available*		
Kinematic viscosity	*No data available*		

9.2. Other information

No good of class 3 according to ADR/RID chapter 2.2.3.1.1. (combustibility is not sustained).

SECTION 10: Stability and reactivity

10.1. Reactivity

No known hazardous reactions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

No special measures are necessary.

10.5. Incompatible materials

Oxidising agent, strong; Acid

10.6. Hazardous decomposition products

No known hazardous decomposition products.

Further information

No information available.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0	
ATE (oral)[1]: 1,200 mg/kg	
ATE (inhalation, vapour)[1]: 3 mg/L	
LD_{50} oral: 1,414 mg/kg (guinea pig) OECD Guideline 401 (Acute Oral Toxicity)	
LD_{50} dermal: 435 mg/kg (rabbit) OECD Guideline 402 (Acute Dermal Toxicity)	
LC_{50} Acute inhalation toxicity (gas): 800 ppmV 8 h (rat)	
LC_{50} Acute inhalation toxicity (vapour): >1.44 – <4.25 mg/L 3 h (rat)	
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	
LD_{50} oral: 5,280 mg/kg (Rat)	
LD_{50} dermal: >2,000 mg/kg	
LC_{50} Acute inhalation toxicity (vapour): 47.5 mg/L 4 h (Rat)	

[1]: Acute Toxicity Estimate. Harmonised (legal) classification.

Acute oral toxicity:
Based on available data, the classification criteria are not met.

Acute dermal toxicity:
Based on available data, the classification criteria are not met.

Acute inhalation toxicity:
Based on available data, the classification criteria are not met.

Skin corrosion/irritation:
Causes skin irritation.

Serious eye damage/irritation:
Causes serious eye irritation.

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

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

Carcinogenicity:
Based on available data, the classification criteria are not met.

Reproductive toxicity:
Based on available data, the classification criteria are not met.

STOT-single exposure:
Based on available data, the classification criteria are not met.

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

Aspiration hazard:
Based on available data, the classification criteria are not met.

Additional information:
No data available

11.2. Information on other hazards

Endocrine disrupting properties:
This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information:
No data available

SECTION 12: Ecological information

12.1. Toxicity

2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0	
LC_{50}: 1,474 mg/L 4 d (fish, Oncorhynchus mykiss (previous name: Salmo gairdneri)) OECD Guideline 203 (Fish, Acute Toxicity Test)	
EC_{50}: 623 mg/L 3 d (Algae/water plant, Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)) OECD Guideline 201 (Alga, Growth Inhibition Test)	
EC_{50}: 1,550 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)	
NOEC: 62.5 mg/L 3 d (Algae/water plant, Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)) OECD Guideline 201 (Alga, Growth Inhibition Test)	
NOEC: 100 mg/L 21 d (crustaceans, Daphnia magna) OECD Guideline 211 (Daphnia magna Reproduction Test)	
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	
LC_{50}: 9,640 mg/L 4 d (fish, Pimephales promelas)	
LC_{50}: >1,000 mg/L 4 d (crustaceans, Oncorhynchus mykiss (Rainbow trout))	
LC_{50}: >100 mg/L 2 d (fish, Leuciscus idus (golden orfe))	
EC_{50}: >100 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) OECD 401	
EC_{50}: 13,299 mg/L 2 d (crustaceans, Daphnia magna)	
EC_{50}: >10,000 mg/L 1 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)	
ErC_{50}: >100 mg/L 3 d (Algae/water plant, Scenedesmus subspicatus)	
ErC_{50}: 1,000 mg/L 3 d (Algae/water plant)	

Assessment/classification:
Based on available data, the classification criteria are not met.

Additional ecotoxicological information:
Do not allow uncontrolled discharge of product into the environment.

12.2. Persistence and degradability

propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7
Biodegradation: Yes, rapidly

Biodegradation:
This surfactant complies with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents.

Additional information:
The product has not been tested.

12.3. Bioaccumulative potential

2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0
Log K_{OW}: 1.4
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7
Log K_{OW}: 0.05

Accumulation / Evaluation:
The product has not been tested.

12.4. Mobility in soil
The product has not been tested.

12.5. Results of PBT and vPvB assessment

2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

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

12.6. Endocrine disrupting properties
This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV
Directive 2008/98/EC (Waste Framework Directive)

HP 4	Irritant — skin irritation and eye damage

Waste treatment options
Appropriate disposal / Product:
Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:
Non-contaminated packages may be recycled.

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)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es)			
not relevant	not relevant	not relevant	not relevant
14.4. Packing group			
not relevant	not relevant	not relevant	not relevant
14.5. Environmental hazards			
not relevant	not relevant	not relevant	not relevant
14.6. Special precautions for user			
not relevant	not relevant	not relevant	not relevant

14.7. Maritime transport in bulk according to IMO instruments
No transport as bulk according to IBC Code.

Additional information:
No good of class 3 according to ADR/RID chapter 2.2.3.1.1. (combustibility is not sustained).

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):
This product is not assigned to a hazard category.
Regulation (EC) No. 648/2004 [Detergents regulation]:
perfumes, Limonene

Directive 2004/42/EC on the limitation of emissions of volatile organic compounds:
Volatile organic compounds (VOC) content in percent by weight: 18.64 weight-%

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Störfallverordnung (12. BImschV)

for substances contained in the product:

This product is not assigned to a hazard category.

Technische Anleitung zur Reinhaltung der Luft (TA-Luft)

Remark:

To follow: 5.2.5

Water hazard class

WGK:

1 - slightly hazardous to water

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

TRGS 500
TRGS 510
TRGS 900

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868
Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

[CH] National regulations

Other regulations, restrictions and prohibition regulations

Mengenschwelle (Schweiz - StFV)
Gefahrencode
Brandverhütung, BVD (Schweiz)
Störfallverordnung (StFV)

[SK] National regulations

Other regulations, restrictions and prohibition regulations

Zákon č. 67/2010 Z.z., o podmienkach uvedenia chemických látok a chemických zmesí na trh a o zmene a doplnení niektorých zákonov (chemický zákon).
Zákon č. 124/2006 Z. z. o bezpečnosti a ochrane zdravia pri práci a o zmene a doplnení niektorých zákonov.
Zákon NR SR č. 355/2007 Z.z., o ochrane, podpore a rozvoji verejného zdravia a o zmene a doplnení niektorých zákonov, v znení neskorších predpisov.
Nariadenie vlády SR 471/2011 Z.z., ktorým sa mení nariadenie vlády Slovenskej republiky č. 355/2006 Z. z. o ochrane zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci, Príloha č.1.
Zákon č. 79/2015 Z.z. o odpadoch v znení neskorších predpisov.
Vyhláška MV SR č. 96/2004 Z.z., ktorou sa ustanovujú zásady protipožiarnej bezpečnosti pri manipulácii a skladovaní horľavých kvapalín, ťažkých vykurovacích olejov a rastlinných a živočíšnych tukov a olejov.
Zákon NR SR č. 137/2010 Z.z. o ovzduší v znení neskorších predpisov.
Zákon č. 319/2013 Z.z. o pôsobnosti orgánov štátnej správy pre sprístupňovanie biocídnych výrobkov na trh a ich používanie a o zmene a doplnení niektorých zákonov (biocídny zákon).

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

Not applicable

16.2. Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DIN	German Institute for Standardization / German Industrial Standard
DNEL	derived no-effect level
EC_{50}	Effective Concentration 50%
ES	Exposure scenario
EWC	European Waste Catalogue
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
KG	body weight
LC_{50}	Lethal (fatal) Concentration 50%
LD_{50}	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
OEL	Threshold Limit Value
OSHA	Occupational Safety & Health Administration
PBT	persistent and bioaccumulative and toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorization of Chemicals
RID	Dangerous goods regulations for transport by rail
SCL	Specific concentration limit
TRGS	Technische Regeln für Gefahrstoffe
UN	United Nations
VOC	Volatile organic compounds

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

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)

Substance name	Type	source of supply
2-butoxyethanol CAS No.: 111-76-2 EC No.: 203-905-0	LD_{50} oral; LD_{50} dermal; LC_{50} Acute inhalation toxicity (gas); LC_{50} Acute inhalation toxicity (vapour); LC_{50}; EC_{50}; NOEC	Source: European Chemicals Agency, http://echa.europa.eu/
propan-2-ol CAS No.: 67-63-0 EC No.: 200-661-7	EC_{50}	Source: European Chemicals Agency, http://echa.europa.eu/

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation *(Eye Irrit. 2)*	H319: Causes serious eye irritation.	Calculation method.

16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

Hazard statements	
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.

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.