

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

1.1. Product identifier

Product form : Mixture
Trade name : Blade Ice 2999-7900
Product group : Cleaning product

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

1.2.1. Relevant identified uses

Main use category : Washing and cleaning products (including solvent based products)
Use of the substance/mixture : Animal cleansing agent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Wahl GmbH
Roggenbachweg 9, 78089 Unterkirnach, Germany
T +49 (0) 7721 806-0
info@wahlgbmh.com

1.4. Emergency telephone number

Emergency number : +49 (0) 7721 806-0
Office hours Monday to Thursday 9:00 am – 5:00 pm

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Aerosol, Category 1	H222;H229
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Danger

Hazardous ingredients

propan-2-ol; isopropyl alcohol; isopropanol
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

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Hazard statements (CLP)	: H222 - Extremely flammable aerosol. H229 - Pressurised container: May burst if heated. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness.
Precautionary statements (CLP)	: P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 - Do not spray on an open flame or other ignition source. P251 - Do not pierce or burn, even after use. P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

2.3. Other hazards

other hazards which do not result in classification : In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butane	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (EC Index-No.) 601-004-00-0 (REACH-no) 01-2119474691-32	< 60	Flam. Gas 1, H220 Press. Gas (Liq.), H280
propane	(CAS-No.) 74-98-6 (EC-No.) 200-827-9 (EC Index-No.) 601-003-00-5 (REACH-no) 01-2119486944-21	< 30	Flam. Gas 1, H220 Press. Gas (Liq.), H280
propan-2-ol; isopropyl alcohol; isopropanol	(CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index-No.) 603-117-00-0 (REACH-no) 01-2119457558-25	< 10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	(CAS-No.) not available (EC-No.) 926-605-8 (REACH-no) 01-2119486291-36	< 1	Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	(CAS-No.) not available (EC-No.) 927-510-4 (REACH-no) 01-2119475515-33	< 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	(CAS-No.) not available (EC-No.) 921-024-6 (REACH-no) 01-2119475514-35	< 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

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Hydrocarbons, C6, isoalkanes, <5% n-hexane	(CAS-No.) not available (EC-No.) 931-254-9 (REACH-no) 01-2119484651-34	< 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
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Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
First-aid measures after inhalation	: If breathing is irregular or stopped, administer artificial respiration. In case of excessive inhalation of fumes move the person to fresh air. Call for medical help.
First-aid measures after skin contact	: After contact with skin, wash immediately with plenty of water and soap. Get medical advice if skin irritation persists. Remove immediately contaminated clothing.
First-aid measures after eye contact	: Protect uninjured eye. 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.
First-aid measures after ingestion	: Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

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

No additional information available

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

Treat symptomatically. a POISON CENTER.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide (CO2). Foam. Extinguishing powder.
Unsuitable extinguishing media	: Full water jet. Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable.
Explosion hazard	: Vapours can form explosive mixtures with air.
Hazardous decomposition products in case of fire	: In case of fire may be liberated: carbon oxides (CO and CO2).

5.3. Advice for firefighters

Protective equipment for firefighters	: Full protection suit. Extra personal protection: complete protective clothing including self-contained breathing apparatus.
Other information	: Use water spray jet to protect personnel and to cool endangered containers. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove all sources of ignition. Use personal protective equipment as required. Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothing.
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6.1.1. For non-emergency personnel

No additional information available

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6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Keep in suitable, closed containers for disposal. Place recovered product in a container for proper disposal.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13: "Disposal considerations". Safe handling: see section 7.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Keep away from sources of ignition - No smoking. Vapours may form flammable and explosive mixture with air.

Precautions for safe handling : Do not pierce or burn, even after use. Pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50°C. Either local exhaust or general room ventilation is usually required.

Hygiene measures : Do not eat, drink or smoke in areas where product is used.

7.2. Conditions for safe storage, including any incompatibilities

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.

Incompatible products : Self-igniting products.

Incompatible materials : Oxidizing agents.

Information on mixed storage : Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Aerosol.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

butane (106-97-8)	
Austria - Occupational Exposure Limits	
MAK (mg/m ³)	1900 mg/m ³ (Butane (all isomers))
MAK (ppm)	800 ppm (Butane (all isomers))
MAK Short time value (mg/m ³)	3800 mg/m ³
MAK Short time value (ppm)	1600 ppm
Belgium - Occupational Exposure Limits	
Local name	Butane, tous isomères: n-butane # Butaan, alle isomeren: n-butaan
Short time value (mg/m ³)	2370 mg/m ³
Short time value (ppm)	980 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018

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butane (106-97-8)	
Bulgaria - Occupational Exposure Limits	
Local name	n-Бутан
OEL TWA (mg/m ³)	1900 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр.73 от 4 септември 2018 г.)
Croatia - Occupational Exposure Limits	
GVI (granična vrijednost izloženosti) (mg/m ³)	1450 mg/m ³ 22 mg/m ³ (containing >=0.1% 1,3-Butadiene)
GVI (granična vrijednost izloženosti) (ppm)	600 ppm 10 ppm (containing >=0.1% 1,3-Butadiene)
KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	1810 mg/m ³
KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	750 ppm
OEL chemical category (HR)	Carcinogen Category 1A containing >=0.1% 1,3-Butadiene, Mutagen Category 1B containing >=0.1% 1,3-Butadiene
Denmark - Occupational Exposure Limits	
Local name	n-Butan
Grænseværdie (langvarig) (mg/m ³)	1200 mg/m ³
Grænseværdie (langvarig) (ppm)	500 ppm
Regulatory reference	BEK nr 655 af 31/05/2018
Estonia - Occupational Exposure Limits	
Local name	n-butaan
OEL TWA (mg/m ³)	1500 mg/m ³
OEL TWA (ppm)	800 ppm
Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293 (RT I, 30.11.2011, 5)
Finland - Occupational Exposure Limits	
Local name	n-Butaani
HTP-arvo (8h) (mg/m ³)	1900 mg/m ³ (Butane)
HTP-arvo (8h) (ppm)	800 ppm (Butane)
HTP-arvo (15 min)	2400 mg/m ³
HTP-arvo (15 min) (ppm)	1000 ppm
Huomautus (FI)	Happea syrjäyttämällä tukahduttavat kaasut: Eräät kaasut voivat suurina pitoisuuksina vaikuttaa tukahduttavasti ilman muita merkittäviä fysiologisia vaikutuksia. Hapen puutetta voi ilmaantua työilman normaalin happipitoisuuden (noin 21 %) laskiessa alle 18 %:n. Erityisesti työtettyihin tiloihin kulkuun liittyy merkittävä tukehtumisriski ja hengenvaara. Liian alhaiselta happipitoisuudelta suojaudutaan valvomalla työilman happipitoisuutta ja tarkoituksenmukaisin teknisin järjestelyin sekä suojaimein, johon hengityskelpoista ilmaa saadaan letkuilla tai säiliöstä riippumatta ympäröivästä ilmasta. Erityisen herkkiä alhaiselle happipitoisuudelle voivat olla eräitä sydän- ja keuhkosairauksia sairastavat työntekijät. Jotkut tukahduttavista kaasuista, kuten vety ja asetyleeni, ovat erittäin helposti syttyviä jo pienemmissä pitoisuuksissa, ja myös tämän vuoksi niiden työilmapitoisuus on pidettävä alhaisena. Muita happea syrjäyttämällä tukahduttavia kaasuja ovat mm. helium, neon, argon ja jo edellä mainittu typpi.
Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö)

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butane (106-97-8)	
France - Occupational Exposure Limits	
Local name	n-Butane
VME (mg/m ³)	1900 mg/m ³
VME (ppm)	800 ppm
Note (FR)	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Local name	Butan
Occupational exposure limit value (mg/m ³)	2400 mg/m ³
Occupational exposure limit value (ppm)	1000 ppm
Limitation of exposure peaks	4(II)
TRGS 900 Remark	DFG
TRGS 900 Regulatory reference	TRGS900
Greece - Occupational Exposure Limits	
Local name	Βουτάνιο
OEL TWA (mg/m ³)	2350 mg/m ³
OEL TWA (ppm)	1000 ppm
Regulatory reference	Π.Δ. 90/1999
Hungary - Occupational Exposure Limits	
Local name	n-BUTÁN
AK-érték	2350 mg/m ³
CK-érték	9400 mg/m ³
Megjegyzések (HU)	IV. (NAGYON GYENGE KÁROSÍTÓ HATÁSÚ ANYAGOK (ÁK > 500 ml/m ³))
Regulatory reference	25/2000. (IX. 30.) EüM–SZCSM együttes rendelet a munkahelyek kémiai biztonságáról
Ireland - Occupational Exposure Limits	
Local name	Butane
OEL (8 hours ref) (ppm)	1000 ppm (Aliphatic hydrocarbon gases - Alkanes (C1-C4))
OEL (15 min ref) (ppm)	3000 ppm (calculated)
Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Latvia - Occupational Exposure Limits	
Local name	Butāns
OEL TWA (mg/m ³)	300 mg/m ³
Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325
Poland - Occupational Exposure Limits	
Local name	Butan (n-butan)
NDS (mg/m ³)	1900 mg/m ³
NDSCh (mg/m ³)	3000 mg/m ³
Regulatory reference	Dz. U. 2018 poz. 1286
Portugal - Occupational Exposure Limits	
Local name	Butano, todos os isómeros

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butane (106-97-8)	
OEL STEL (ppm)	1000 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Occupational Exposure Limits	
Local name	bután s obsahom $\geq 0,1\%$ butadiénu (n-bután) (izo-bután)
NPHV (priemerná) (mg/m ³)	2400 mg/m ³
NPHV (priemerná) (ppm)	1000 ppm
Upozornenie (SK)	Kategória karcinogénov 1A – Dokázaný karcinogén pre ľudí
Regulatory reference	Nariadenie vlády č. 83/2015 Z. z.
Slovenia - Occupational Exposure Limits	
Local name	butan
OEL TWA (mg/m ³)	2400 mg/m ³ (containing $\geq 0.1\%$ Butadiene)
OEL TWA (ppm)	1000 ppm (containing $\geq 0.1\%$ Butadiene)
OEL STEL (mg/m ³)	9600 mg/m ³ (containing $\geq 0.1\%$ Butadiene)
OEL STEL (ppm)	4000 ppm (containing $\geq 0.1\%$ Butadiene)
OEL chemical category (SI)	Category 1A containing $\geq 0.1\%$ Butadiene, Category 1B containing $\geq 0.1\%$ Butadiene
Regulatory reference	Uradni list RS, št. 78/2018 z dne 4.12.2018
Spain - Occupational Exposure Limits	
Local name	Butano
VLA-ED (mg/m ³)	1935 mg/m ³
VLA-ED (ppm)	1000 ppm Hidrocarburos alifáticos alcanos (C1 – C4) y sus mezclas, gases (Butano; Etano; Metano; Propano)
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Butane
WEL TWA (mg/m ³)	1450 mg/m ³
WEL TWA (ppm)	600 ppm
WEL STEL (mg/m ³)	1810 mg/m ³
WEL STEL (ppm)	750 ppm
Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage, only applies if Butane contains more than 0.1% of buta-1,3-diene)
WEL chemical category	Capable of causing cancer and/or heritable genetic damage containing $>0.1\%$ Buta-1,3-diene
Regulatory reference	EH40/2005 (Third edition, 2018). HSE
Iceland - Occupational Exposure Limits	
Local name	n- Bútan
OEL (8 hours ref) (mg/m ³)	1200 mg/m ³
OEL (8 hours ref) (ppm)	500 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Butan

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butane (106-97-8)	
Grenseverdier (AN) (mg/m ³)	600 mg/m ³
Grenseverdier (AN) (ppm)	250 ppm
Grenseverdier (Korttidsverdi) (mg/m ³)	750 mg/m ³ (value calculated)
Grenseverdier (Korttidsverdi) (ppm)	312.5 ppm (value calculated)
Regulatory reference	FOR-2018-08-21-1255
Switzerland - Occupational Exposure Limits	
Local name	n-Butane / n-Butan
MAK (mg/m ³)	1900 mg/m ³ (Butane (all isomers))
MAK (ppm)	800 ppm (Butane (all isomers))
KZGW (mg/m ³)	7600 mg/m ³ (Butane)
KZGW (ppm)	3200 ppm (Butane)
Critical toxicity	SNC / ZNS
Regulatory reference	www.suva.ch, 01.07.2019
propane (74-98-6)	
Austria - Occupational Exposure Limits	
Local name	Propan (R 290)
MAK (mg/m ³)	1800 mg/m ³
MAK (ppm)	1000 ppm
MAK Short time value (mg/m ³)	3600 mg/m ³
MAK Short time value (ppm)	2000 ppm
Regulatory reference	BGBI. II Nr. 186/2015
Belgium - Occupational Exposure Limits	
Local name	Hydrocarbures aliphatiques sous forme gazeuse: (Alcanes C1-C3) # Alifatische koolwaterstoffen in gas-vorm: Alkanen (C1-C3)
Limit value (ppm)	1000 ppm (gas)
Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Bulgaria - Occupational Exposure Limits	
Local name	Пропан
OEL TWA (mg/m ³)	1800 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр.73 от 4 септември 2018 г.)
Denmark - Occupational Exposure Limits	
Local name	Propan (Flaskegas)
Grænseværdie (langvarig) (mg/m ³)	1800 mg/m ³
Grænseværdie (langvarig) (ppm)	1000 ppm
Regulatory reference	BEK nr 655 af 31/05/2018
Estonia - Occupational Exposure Limits	
Local name	Propaan
OEL TWA (mg/m ³)	1800 mg/m ³

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propane (74-98-6)	
OEL TWA (ppm)	1000 ppm
Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293 (RT I, 30.11.2011, 5)
Finland - Occupational Exposure Limits	
Local name	Propaani
HTP-arvo (8h) (mg/m ³)	1500 mg/m ³
HTP-arvo (8h) (ppm)	800 ppm
HTP-arvo (15 min)	2000 mg/m ³
HTP-arvo (15 min) (ppm)	1100 ppm
Huomautus (FI)	Happea syrjäyttämällä tukahduttavat kaasut: Eräät kaasut voivat suurina pitoisuuksina vaikuttaa tukahduttavasti ilman muita merkittäviä fysiologisia vaikutuksia. Hapen puutetta voi ilmaantua työilman normaalin happipitoisuuden (noin 21 %) laskiessa alle 18 %:n. Erityisesti tytettyihin tiloihin kulkuun liittyy merkittävä tukehtumisriski ja hengenvaara. Liian alhaiselta happipitoisuudelta suojaudutaan valvomalla työilman happipitoisuutta ja tarkoituksenmukaisin teknisin järjestelyin sekä suojaimitin, johon hengityskelpoista ilmaa saadaan letkuilla tai säiliöstä riippumatta ympäröivästä ilmasta. Erityisen herkkiä alhaiselle happipitoisuudelle voivat olla eräitä sydän- ja keuhkosairauksia sairastavat työntekijät. Jotkut tukahduttavista kaasuista, kuten vety ja asetyleeni, ovat erittäin helposti syttyviä ja pienemmissä pitoisuuksissa, ja myös tämän vuoksi niiden työilmapitoisuus on pidettävä alhaisena. Muita happea syrjäyttämällä tukahduttavia kaasuja ovat mm. helium, neon, argon ja jo edellä mainittu typpi.
Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö)
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Local name	Propan
Occupational exposure limit value (mg/m ³)	1800 mg/m ³
Occupational exposure limit value (ppm)	1000 ppm
Limitation of exposure peaks	4(II)
TRGS 900 Remark	DFG
TRGS 900 Regulatory reference	TRGS900
Greece - Occupational Exposure Limits	
Local name	Προπάνιο
OEL TWA (mg/m ³)	1800 mg/m ³
OEL TWA (ppm)	1000 ppm
Regulatory reference	Π.Δ. 90/1999
Ireland - Occupational Exposure Limits	
Local name	Propane
OEL (15 min ref) (ppm)	3000 ppm (calculated (Aliphatic hydrocarbon gases - Alkanes (C1-C4)))
Notes (IE)	Asphx. (Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants).
OEL chemical category (IE)	Simple asphyxiant
Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Latvia - Occupational Exposure Limits	
Local name	Propāns
OEL TWA (mg/m ³)	1800 mg/m ³
OEL TWA (ppm)	1000 ppm

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propane (74-98-6)	
Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325 (Grozījumi Ministru kabineta 2015.gada 7.aprīlī noteikumiem Nr.163)
Poland - Occupational Exposure Limits	
Local name	Propan
NDS (mg/m ³)	1800 mg/m ³
Regulatory reference	Dz. U. 2018 poz. 1286
Portugal - Occupational Exposure Limits	
OEL TWA (ppm)	1000 ppm
Romania - Occupational Exposure Limits	
Local name	Propan
OEL TWA (mg/m ³)	1400 mg/m ³
OEL TWA (ppm)	778 ppm
OEL STEL (mg/m ³)	1800 mg/m ³
OEL STEL (ppm)	1000 ppm
Regulatory reference	Hotărârea nr. 584/2018
Slovenia - Occupational Exposure Limits	
Local name	propan
OEL TWA (mg/m ³)	1800 mg/m ³
OEL TWA (ppm)	1000 ppm
OEL STEL (mg/m ³)	7200 mg/m ³
OEL STEL (ppm)	4000 ppm
Regulatory reference	Uradni list RS, št. 78/2018 z dne 4.12.2018
Spain - Occupational Exposure Limits	
Local name	Propano
VLA-ED (ppm)	1000 ppm Hidrocarburos alifáticos alcanos (C1 – C4) y sus mezclas, gases (Butano; Etano; Metano; Propano)
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
Iceland - Occupational Exposure Limits	
Local name	Própan (flöskugas)
OEL (8 hours ref) (mg/m ³)	1800 mg/m ³
OEL (8 hours ref) (ppm)	1000 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Propan
Grenseverdier (AN) (mg/m ³)	900 mg/m ³
Grenseverdier (AN) (ppm)	500 ppm
Grenseverdier (Korttidsverdi) (mg/m ³)	1125 mg/m ³ (value calculated)
Grenseverdier (Korttidsverdi) (ppm)	625 ppm (value calculated)
Regulatory reference	FOR-2018-08-21-1255

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propane (74-98-6)	
Switzerland - Occupational Exposure Limits	
Local name	Propane / Propan
MAK (mg/m ³)	1800 mg/m ³
MAK (ppm)	1000 ppm
KZGW (mg/m ³)	7200 mg/m ³
KZGW (ppm)	4000 ppm
Critical toxicity	Formel / Formal
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.07.2019
propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
Austria - Occupational Exposure Limits	
MAK (mg/m ³)	500 mg/m ³
MAK (ppm)	200 ppm
MAK Short time value (ppm)	800 ppm
OEL - Ceilings (mg/m ³)	2000 mg/m ³
Belgium - Occupational Exposure Limits	
Local name	Alcool isopropylique # Isopropylalcohol
Limit value (mg/m ³)	500 mg/m ³
Limit value (ppm)	200 ppm
Short time value (mg/m ³)	1000 mg/m ³
Short time value (ppm)	400 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Bulgaria - Occupational Exposure Limits	
Local name	Изопропилов алкохол
OEL TWA (mg/m ³)	980 mg/m ³
OEL STEL (mg/m ³)	1225 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр.73 от 4 септември 2018 г.)
Croatia - Occupational Exposure Limits	
Local name	Propan-2-ol; izopropil-alkohol; izopropanol
GVI (granična vrijednost izloženosti) (mg/m ³)	999 mg/m ³
GVI (granična vrijednost izloženosti) (ppm)	400 ppm
KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	1250 mg/m ³
KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	500 ppm
Regulatory reference	Pravilnik o izmjenama i dopunama Pravilnika o graničnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim graničnim vrijednostima (NN 91/2018)
Cyprus - Occupational Exposure Limits	
OEL TWA (mg/m ³)	980 mg/m ³

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
OEL TWA (ppm)	400 ppm
Czech Republic - Occupational Exposure Limits	
Local name	iso-Propanol (2-Propanol; iso-Propylalkohol)
Expoziční limity (PEL) (mg/m ³)	500 mg/m ³
Expoziční limity (PEL) (ppm)	204 ppm
Expoziční limity (NPK-P) (mg/m ³)	1000 mg/m ³
Expoziční limity (NPK-P) (ppm)	410 ppm
Remark (CZ)	I (dráždí sliznice (oči, dýchací cesty) resp. kůži)
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (zpracovány změny č. 246/2018 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Isopropylalkohol (Isopropanol; 2-Propanol; sec-Propylalkohol)
Grænseværdie (langvarig) (mg/m ³)	490 mg/m ³
Grænseværdie (langvarig) (ppm)	200 ppm
Regulatory reference	BEK nr 655 af 31/05/2018
Estonia - Occupational Exposure Limits	
Local name	2-propanool (isopropüülalkohol, isopropanool)
OEL TWA (mg/m ³)	350 mg/m ³
OEL TWA (ppm)	150 ppm
OEL STEL (mg/m ³)	600 mg/m ³
OEL STEL (ppm)	250 ppm
OEL Ceiling (mg/m ³)	600 mg/m ³
Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293 (RT I, 30.11.2011, 5)
Finland - Occupational Exposure Limits	
Local name	2-Propanoli
HTP-arvo (8h) (mg/m ³)	500 mg/m ³
HTP-arvo (8h) (ppm)	200 ppm
HTP-arvo (15 min)	620 mg/m ³
HTP-arvo (15 min) (ppm)	250 ppm
Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Alcool isopropylique
VME (ppm)	400 ppm
VLE (mg/m ³)	980 mg/m ³
VLE (ppm)	400 ppm
Note (FR)	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Local name	Propan-2-ol
Occupational exposure limit value (mg/m ³)	500 mg/m ³
Occupational exposure limit value (ppm)	200 ppm

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
Limitation of exposure peaks (mg/m ³)	Short term (15 min) multiplication factor: 2
Limitation of exposure peaks	2(II)
TRGS 900 Remark	DFG;Y
TRGS 900 Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
TRGS 903 Local name	Propan-2-ol
TRGS 903 Biological limit value	25 mg/l Parameter: Aceton - Untersuchungsmaterial: B = Vollblut, U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 11/2012 DFG 25 mg/l Parameter: Aceton - Untersuchungsmaterial: U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 11/2012 DFG
TRGS 903 Regulatory reference	TRGS 903
Greece - Occupational Exposure Limits	
Local name	Ισοπροπυλική αλκοόλη
OEL TWA (mg/m ³)	980 mg/m ³
OEL TWA (ppm)	400 ppm
OEL STEL (mg/m ³)	1225 mg/m ³
OEL STEL (ppm)	500 ppm
Regulatory reference	Π.Δ. 90/1999
Hungary - Occupational Exposure Limits	
Local name	IZOPROPIL-ALKOHOL
AK-érték	500 mg/m ³
CK-érték	2000 mg/m ³
Megjegyzések (HU)	b (Bőrön át is felszívódik), i (ingerlő anyag, amely irritálja a bőrt, nyálkahártyát, szemet vagy mindháromat); II.1. (FELSZÍVÓDVA HATÓ ANYAGOK (Az anyag hatásának fellépése 2 órán belül; Felezési idő < 2 óra))
Regulatory reference	25/2000. (IX. 30.) EüM–SZCSM együttes rendelet a munkahelyek kémiai biztonságáról
Ireland - Occupational Exposure Limits	
Local name	Isopropyl alcohol
OEL (8 hours ref) (ppm)	200 ppm
OEL (15 min ref) (ppm)	400 ppm
Notes (IE)	Sk (Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body)
Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Latvia - Occupational Exposure Limits	
Local name	Izopropanols (2-propanols, izopropilspirts, 1-metil-1-etanols)
OEL TWA (mg/m ³)	350 mg/m ³
OEL STEL (mg/m ³)	600 mg/m ³
Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325 (Grozījumi Ministru kabineta 2011.gada 1.februārī noteikumiem Nr.92)
Lithuania - Occupational Exposure Limits	
Local name	2-propanolis (izopropanolis, izopropilo alkoholis)
IPRV (mg/m ³)	350 mg/m ³

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
IPRV (ppm)	150 ppm
TPRV (mg/m ³)	600 mg/m ³
TPRV (ppm)	250 ppm
NRV (mg/m ³)	600 mg/m ³
NRV (ppm)	250 ppm
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Poland - Occupational Exposure Limits	
Local name	Propan-2-ol (izopropylowy alkohol)
NDS (mg/m ³)	900 mg/m ³
NDSCh (mg/m ³)	1200 mg/m ³
Remark (PL)	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową)
Regulatory reference	Dz. U. 2018 poz. 1286
Portugal - Occupational Exposure Limits	
Local name	2-Propanol (isopropanol ou álcool isopropílico)
OEL TWA (ppm)	200 ppm
OEL STEL (ppm)	400 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Alcool izopropilic/2-Propanol
OEL TWA (mg/m ³)	200 mg/m ³
OEL TWA (ppm)	81 ppm
OEL STEL (mg/m ³)	500 mg/m ³
OEL STEL (ppm)	203 ppm
Regulatory reference	Hotărârea nr. 584/2018
Slovakia - Occupational Exposure Limits	
Local name	Izopropylalkohol (propán-2-ol)
NPHV (priemerná) (mg/m ³)	500 mg/m ³
NPHV (priemerná) (ppm)	200 ppm
OEL STEL (mg/m ³)	1000 mg/m ³
OEL STEL (ppm)	400 ppm
Regulatory reference	Nariadenie vlády č. 33/2018 Z.z.
Slovenia - Occupational Exposure Limits	
Local name	propan-2-ol (izopropilalkohol; izopropanol)
OEL TWA (mg/m ³)	500 mg/m ³
OEL TWA (ppm)	200 ppm
OEL STEL (mg/m ³)	The STEL Multiplier (STEL = TWA * STEL Multiplier) is: 4
OEL STEL (ppm)	400 ppm
Remark (SI)	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost)
Regulatory reference	Uradni list RS, št. 78/2018 z dne 4.12.2018

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
Spain - Occupational Exposure Limits	
Local name	Isopropanol (Alcohol isopropílico)
VLA-ED (mg/m ³)	500 mg/m ³
VLA-ED (ppm)	200 ppm
VLA-EC (mg/m ³)	1000 mg/m ³
VLA-EC (ppm)	400 ppm
Notes	VLB® (Agente químico que tiene Valor Límite Biológico), s (Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o como biocida. Para una información detallada acerca de las prohibiciones consúltese: Base de datos de productos biocidas: http://www.msssi.gob.es/ciudadanos/productos.do?tipo=plaguicidas Base de datos de productos fitosanitarios http://www.magrama.gob.es/agricultura/pags/fitos/registro/fichas/pdf/Lista_sa.pdf).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
Spain - Biological limit values	
Spain - BLV	40 mg/l Parámetro: Acetona - Medio: Orina - Momento de muestreo: Final de la semana laboral - Notas: F (Fondo. El indicador está generalmente presente en cantidades detectables en personas no expuestas laboralmente. Estos niveles de fondo están considerados en el valor VLB), I (Significa que el indicador biológico es inespecífico puesto que puede encontrarse después de la exposición a otros agentes químicos)
Sweden - Occupational Exposure Limits	
Local name	Isopropanol
nivågränsvärde (NVG) (mg/m ³)	350 mg/m ³
nivågränsvärde (NVG) (ppm)	150 ppm
kortidsvärde (KTV) (mg/m ³)	600 mg/m ³
kortidsvärde (KTV) (ppm)	250 ppm
Anmärkning (SE)	V (Vägledande kortidsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Propan-2-ol
WEL TWA (mg/m ³)	999 mg/m ³
WEL TWA (ppm)	400 ppm
WEL STEL (mg/m ³)	1250 mg/m ³
WEL STEL (ppm)	500 ppm
Regulatory reference	EH40/2005 (Third edition, 2018). HSE
Iceland - Occupational Exposure Limits	
Local name	2-Própanól (ísóprópanól, ísóprópýlalkóhól, sec- própýlalkóhól)
OEL (8 hours ref) (mg/m ³)	490 mg/m ³
OEL (8 hours ref) (ppm)	200 ppm
Notes (IS)	H (efnið getur auðveldlega borist inn í líkamann gegnum húð)
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	2-propanol (Isopropanol)

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
Grenseverdier (AN) (mg/m ³)	245 mg/m ³
Grenseverdier (AN) (ppm)	100 ppm
Regulatory reference	FOR-2018-08-21-1255
Switzerland - Occupational Exposure Limits	
Local name	2-Propanol / 2-Propanol [iso-Propylalkohol, Isopropanol, Isopropylalkohol]
MAK (mg/m ³)	500 mg/m ³
MAK (ppm)	200 ppm
KZGW (mg/m ³)	1000 mg/m ³
KZGW (ppm)	400 ppm
Critical toxicity	VRS, Foie, SNC, Yeux / OAW, Leber, ZNS, Auge
Notation	SS _C , B / SS _C , B
Remark	INRS, NIOSH
Regulatory reference	www.suva.ch, 01.07.2019

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	888 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	500 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	26 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	89 mg/m ³
Long-term - systemic effects, dermal	319 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	140,9 mg/l
PNEC aqua (marine water)	140,9 mg/l
PNEC aqua (intermittent, freshwater)	140,9 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	552 mg/kg dwt
PNEC sediment (marine water)	552 mg/kg dwt
PNEC (Soil)	
PNEC soil	28 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	160 mg/kg
PNEC (STP)	
PNEC sewage treatment plant	2251 mg/l

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	300 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2085 mg/m ³

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DNEL/DMEL (General population)	
Long-term - systemic effects, oral	149 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	447 mg/m ³
Long-term - systemic effects, dermal	149 mg/kg bodyweight/day

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

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	773 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2035 mg/m ³

DNEL/DMEL (General population)	
Long-term - systemic effects, oral	699 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	608 mg/m ³
Long-term - systemic effects, dermal	699 mg/kg bodyweight/day

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

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	13964 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	5306 mg/m ³

DNEL/DMEL (General population)	
Long-term - systemic effects, oral	1301 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1131 mg/m ³
Long-term - systemic effects, dermal	1377 mg/kg bodyweight/day

8.2. Exposure controls

Personal protective equipment:

Protective clothing. Gloves. Protective goggles.

Materials for protective clothing:

Chemical resistant protective apron / clothing (tested to EN 14605 or equivalent).

Hand protection:

Chemical resistant gloves (according to European standard NF EN 374 or equivalent)

Eye protection:

Wear eye protection/face protection. DIN EN 166

Skin and body protection:

Use antistatic shoes. Antistatic clothing

Respiratory protection:

Usually no personal respirative protection necessary.

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Personal protective equipment symbol(s):



Environmental exposure controls:

Do not allow to enter into surface water or drains. No special environmental precautions required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Colour	: Colourless.
Odour	: alcohol-like.
Odour threshold	: No data available
pH	: not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: not applicable
Freezing point	: No data available
Boiling point	: < -20 °C
Flash point	: < -20 °C
Auto-ignition temperature	: 287 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: not applicable
Vapour pressure	: not determined
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.58 g/cm ³ 20°C
Solubility	: practically insoluble.
Partition coefficient n-octanol/water (Log Pow)	: not determined
Partition coefficient n-octanol/water (Log Kow)	: not determined
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Vapours may form explosive mixture with air.
Oxidising properties	: Not oxidising.
Explosive limits	: 1.4 – 9.4 vol %

9.2. Other information

VOC content : 2010/75/EU (VOC): 98,955 % (573,939 g/l); 2004/42/EC (VOC): 98,955 % (573,939 g/l)

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Vapours mix easily with air, leading to the formation of explosive air/vapour mixture.

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10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

LD50 oral rat	4570 mg/kg
LD50 dermal rabbit	13400 mg/kg
LC50 inhalation rat (mg/l)	30 mg/l/4h Vapour

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

LD50 oral rat	> 5000 mg/kg OECD 401
LD50 dermal rabbit	> 2000 mg/kg OECD 402

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

LD50 oral rat	5840 mg/kg
LD50 dermal rat	2800 – 3100 mg/kg Study report (1977)
LC50 inhalation rat (Vapours - mg/l/4h)	16 mg/l - OECD Guideline 403 - Toxicology and Applied Pharmacology 32

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

LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (Vapours - mg/l/4h)	> 25.2 mg/l - Study report (1988)

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

LD50 oral rat	> 5000 mg/kg OECD 401
LD50 dermal rat	> 3000 mg/kg OECD 402
LC50 inhalation rat (Dust/Mist - mg/l/4h)	> 20 mg/l/4h OECD 403

Skin corrosion/irritation : Causes skin irritation.
pH: not applicable

Serious eye damage/irritation : Causes serious eye damage.
pH: not applicable

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

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

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

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

STOT-single exposure : May cause drowsiness or dizziness.

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

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Aspiration hazard : Not classified. Conventional method in CLP

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified (CLP).
Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

butane (106-97-8)	
LC50 fish 1	49.9 mg/l United States Environmental Protection Agency
ErC50 (algae)	19.37 mg/l US EPA OPPT

propane (74-98-6)	
LC50 fish 1	147.54 mg/l United States_The Ecosar class
EC50 Daphnia 1	46.6 mg/l United States Environmental Protection Agency - Calculation using ECOSAR - Program v1.00
ErC50 (algae)	16.47 mg/l Green algaea_United States Environmental Protection Agency - Calculation using ECOSAR - Program v1.00

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
LC50 fish 1	9640 mg/l Pimephales promelas- OECD Guideline 203
LC50 other aquatic organisms 1	> 100 mg/l Acute bacteria toxicity
EC50 Daphnia 1	13299 mg/l (Big water flea)
ErC50 (algae)	> 100 mg/l Scenedesmus subspicatus _72h

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	
LC50 fish 1	12 mg/l Oncorhynchus mykiss - OECD Guideline 203
EC50 Daphnia 1	3 mg/l Daphnia magna - OECD Guideline 202
ErC50 (algae)	7.276 mg/l Selenastrum capricornutum - ECHA - 72h
NOEC chronic fish	2.187 mg/l Oncorhynchus mykiss - 28 days - ECHA -
NOEC chronic crustacea	3.818 mg/l Daphnia magna - 21 days - ECHA

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	
LC50 fish 1	> 13.4 mg/l Oncorhynchus mykiss - OECD Guideline 203
EC50 Daphnia 1	3 mg/l Daphnia magna - OECD Guideline 202
EC50 72h algae (1)	12 mg/l Pseudokirchneriella subcapitata - SIDS Initial Assessment Report For SIAM - OECD Guideline 201
NOEC chronic fish	1.534 mg/l CONCAWE, Brussels, Belgium (2010) - Oncorhynchus mikiss -28 days
NOEC chronic crustacea	1 mg/l Daphnia magna - SIDS Initial Assessment Report For SIAM- OECD Guideline 211 - 21 days

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	
LC50 fish 1	11.4 mg/l Orcorhynchus mykiss - OECD Guideline 203

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EC50 Daphnia 1	3 mg/l Daphnia magna - OECD Guideline 202
ErC50 (algae)	10 – 30 mg/l Raphidocelis subcapitata - OECD Guideline 201 - 72 h
NOEC chronic fish	2.045 mg/l Ocorhynchus mykiss - CONCAWE, Brussels, Belgium (2010)
NOEC chronic crustacea	1 mg/l Daphnia magna - SIDS Initial Assessment Report For SIAM - OECG Guideline 211

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

LC50 fish 1	18.27 mg/l Oncorhynchus mikiss - ECHA
EC50 Daphnia 1	31.9 mg/l Daphnia magna - ECHA
ErC50 (algae)	13.56 mg/l Pseudokirchneriella subcapitata - CONCAWE, Brussels, Belgium (2009)
NOEC chronic fish	4.089 mg/l Oncorhynchus mykiss - CONCAWE, Brussels, Belgium (2009)
NOEC chronic crustacea	4.888 mg/l Daphnia magna - CONCAWE, Brussels, Belgium

12.2. Persistence and degradability

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Persistence and degradability	Mixture not tested.
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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

Persistence and degradability	Readily biodegradable (according to OECD criteria).
Biodegradation	95 % 21 days

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

Persistence and degradability	Readily biodegradable (according to OECD criteria).
Biodegradation	98 % 28 days

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Persistence and degradability	Readily biodegradable (according to OECD criteria).
Biodegradation	98 % 28 days

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

Persistence and degradability	Readily biodegradable (according to OECD criteria).
Biodegradation	81 % 28 days

12.3. Bioaccumulative potential

Blade Ice 2999-7900

Partition coefficient n-octanol/water (Log Pow)	not determined
Partition coefficient n-octanol/water (Log Kow)	not determined
Bioaccumulative potential	Mixture not tested.

butane (106-97-8)

Partition coefficient n-octanol/water (Log Pow)	1.81
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propane (74-98-6)

Partition coefficient n-octanol/water (Log Pow)	1.81
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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

Partition coefficient n-octanol/water (Log Pow)	0.05
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Hydrocarbons, C6, isoalkanes, <5% n-hexane

BCF fish 1	501.187 Pimephales promelas
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Partition coefficient n-octanol/water (Log Pow)	3.6
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12.4. Mobility in soil

Blade Ice 2999-7900

Ecology - soil	Mixture not tested.
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12.5. Results of PBT and vPvB assessment

Blade Ice 2999-7900

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : Avoid undiluted product to come into sewer or superficial water.






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Delivery to an approved waste disposal company.
Product/Packaging disposal recommendations : Empty containers should be taken for recycling, recovery or waste in accordance with local regulation. Do not allow to enter into surface water or drains.
European List of Waste (LoW) code : 16 05 04* - gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 1950	UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping name				
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS
Transport document description				
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1	UN 1950 Aerosols, flammable, 2.1	UN 1950 AEROSOLS, 2.1	UN 1950 AEROSOLS, 2.1
14.3. Transport hazard class(es)				
2.1	2.1	2.1	2.1	2.1
				

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14.4. Packing group

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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14.5. Environmental hazards

Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
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No supplementary information available

14.6. Special precautions for user

Overland transport

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

Transport by sea

Special provisions (IMDG)	: 63, 190, 277, 327, 344, 381, 959
Packing instructions (IMDG)	: P207, LP200
Special packing provisions (IMDG)	: PP87, L2
EmS-No. (Fire)	: F-D
EmS-No. (Spillage)	: S-U
Stowage category (IMDG)	: None
Stowage and handling (IMDG)	: SW1, SW22
Segregation (IMDG)	: SG69

Air transport

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

Inland waterway transport

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

Rail transport

Classification code (RID)	: 5F
Special provisions (RID)	: 190, 327, 344, 625
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P207, LP200
Special packing provisions (RID)	: PP87, RR6, L2
Mixed packing provisions (RID)	: MP9
Transport category (RID)	: 2

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Special provisions for carriage – Packages (RID) : W14
Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW12
Colis express (express parcels) (RID) : CE2
Hazard identification number (RID) : 23

14.7. Transport in bulk according to Annex II of Marpol 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-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:	
Reference code	Applicable on
3(a)	Blade Ice 2999-7900 ; propan-2-ol; isopropyl alcohol; isopropanol ; Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics ; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C6, isoalkanes, <5% n-hexane
3(b)	Blade Ice 2999-7900 ; propan-2-ol; isopropyl alcohol; isopropanol ; Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics ; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C6, isoalkanes, <5% n-hexane
3(c)	Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics ; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C6, isoalkanes, <5% n-hexane
40.	butane ; propane ; propan-2-ol; isopropyl alcohol; isopropanol ; Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics ; Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane ; Hydrocarbons, C6, isoalkanes, <5% n-hexane

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 2010/75/EU (VOC): 98,955 % (573,939 g/l); 2004/42/EC (VOC): 98,955 % (573,939 g/l)

Directive 2012/18/EU (SEVESO III)

Seveso Additional information : P3a FLAMMABLE AEROSOLS

15.1.2. National regulations

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV) : Is subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

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

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

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

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

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

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15.2. Chemical safety assessment

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

SECTION 16: Other information

Abbreviations and acronyms:	
SDS	Safety Data Sheet
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
BCF	Bioconcentration factor
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
IARC	International Agency for Research on Cancer
CAS	CAS - Chemical Abstracts Service
EC	EC - European Community
DIN	DIN - Deutsches Institut für Normung eV (German Institute for Standardization)
PBT	PBT - Persistent, Bioaccumulative and Toxic substance
vPvB	Very Persistent and Very Bioaccumulative
TWA	TWA- Time Weighted Average
CSR	CSR - Chemical Safety Report
LD50	Median lethal dose
OECD	Organisation for Economic Co-operation and Development

Other information : Classification in accordance with the calculation methods of Regulation (EC) 1272/2008 CLP.

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

Aerosol 1	H222;H229
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H336

Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Gas 1	Flammable gases, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
Skin Irrit. 2	Skin corrosion/irritation, Category 2

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STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Aerosol 1	H222;H229	On basis of test data
Skin Irrit. 2	H315	Bridging principle "Aerosols"
Eye Irrit. 2	H319	Bridging principle "Aerosols"
STOT SE 3	H336	Bridging principle "Aerosols"

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.