

Safety Data Sheet

22 Mix VOCs in acetonitrile

Version : V2.0.0.1

Report No. : BWQ8454-2016-MSDS-EP

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Revision Date : -



*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

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

1.1 Product identifier

Product Name	22 Mix VOCs in acetonitrile
Cat No.	BWQ8454-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number

Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Flammable liquids	Category 2
Acute Toxicity - Oral	Category 4
Acute Toxicity - Dermal	Category 4
Serious eye damage/irritation	Category 2
Acute Toxicity - Inhalation	Category 4
Germ cell mutagenicity	Category 1B

Carcinogenicity	Category 1A
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2.2 Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H319	Causes serious eye irritation
H332	Harmful if inhaled
H340	May cause genetic defects
H350	May cause cancer

Precautionary statements

◆ Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

◆ Response

P312	Call a POISON CENTRE/ doctor/... if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P330	Rinse mouth.
P301+P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO ₂ or alcohol-resistant foam; Large fire:

	alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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2.3 Other hazards

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Acetonitrile	Not PBT/vPvB
Ethanol	Not PBT/vPvB
Methanol	Not PBT/vPvB
Propan-1-ol	Insufficient information, temporarily unable to evaluate
Propan-2-ol	Not PBT/vPvB
Butan-1-ol	Not PBT/vPvB
2-methylpropan-1-ol	Not PBT/vPvB
Benzene	Not PBT/vPvB
Toluene	Not PBT/vPvB
Ethylbenzene	Not PBT/vPvB
Xylene	Not PBT/vPvB
Triethylamine	Not PBT/vPvB
2-dimethylaminoethanol	Not PBT/vPvB
2-amino-2-methylpropanol	Not PBT/vPvB
Ethane-1,2-diol	Not PBT/vPvB
1,2-Propanediol	Not PBT/vPvB
Propane-1,3-diol	Not PBT/vPvB
2-butoxyethanol	Not PBT/vPvB
2-(2-butoxyethoxy)ethanol	Not PBT/vPvB
2-(2-ethoxyethoxy)ethyl acetate	Not PBT/vPvB
2-(2-butoxyethoxy)ethyl acetate	Not PBT/vPvB
2,2,4-trimethylpentane-1,3-diol	Not PBT/vPvB

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
Acetonitrile	Insufficient information, temporarily unable to evaluate
Ethanol	Insufficient information, temporarily unable to evaluate
Methanol	Insufficient information, temporarily unable to evaluate
Propan-1-ol	Insufficient information, temporarily unable to evaluate
Propan-2-ol	Insufficient information, temporarily unable to evaluate
Butan-1-ol	Insufficient information, temporarily unable to evaluate
2-methylpropan-1-ol	Insufficient information, temporarily unable to evaluate
Benzene	Insufficient information, temporarily unable to evaluate
Toluene	Insufficient information, temporarily unable to evaluate
Ethylbenzene	Insufficient information, temporarily unable to evaluate
Xylene	Insufficient information, temporarily unable to evaluate
Triethylamine	Insufficient information, temporarily unable to evaluate
2-dimethylaminoethanol	Insufficient information, temporarily unable to evaluate
2-amino-2-methylpropanol	Insufficient information, temporarily unable to evaluate
Ethane-1,2-diol	Insufficient information, temporarily unable to evaluate
1,2-Propanediol	Insufficient information, temporarily unable to evaluate
Propane-1,3-diol	Insufficient information, temporarily unable to evaluate
2-butoxyethanol	Insufficient information, temporarily unable to evaluate
2-(2-butoxyethoxy)ethanol	Insufficient information, temporarily unable to evaluate
2-(2-ethoxyethoxy)ethyl acetate	Insufficient information, temporarily unable to evaluate
2-(2-butoxyethoxy)ethyl acetate	Insufficient information, temporarily unable to evaluate
2,2,4-trimethylpentane-1,3-diol	Insufficient information, temporarily unable to evaluate

◆ Other

Not applicable.

3 Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
Acetonitrile CAS : 75-05-8 EC : 200-835-2 Index No. : 608-001-00-3	97.184	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 4, H302; Acute Toxicity - Dermal, Category 4, H312; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category	-

		4, H332	
Ethanol CAS : 64-17-5 EC : 200-578-6 Index No. : 603-002-00-5	0.128	Flammable liquids, Category 2, H225	-
Methanol CAS : 67-56-1 EC : 200-659-6 Index No. : 603-001-00-X	0.128	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure, Category 1, H370	H370:C ≥ 10% H371:3% ≤ C < 10%
Propan-1-ol CAS : 71-23-8 EC : 200-746-9 Index No. : 603-003-00-0	0.128	Flammable liquids, Category 2, H225; Serious eye damage/irritation, Category 1, H318; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336	-
Propan-2-ol CAS : 67-63-0 EC : 200-661-7 Index No. : 603-117-00-0	0.128	Flammable liquids, Category 2, H225; Serious eye damage/irritation, Category 2, H319; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336	-
Butan-1-ol CAS : 71-36-3 EC : 200-751-6 Index No. : 603-004-00-6	0.128	Flammable liquids, Category 3, H226; Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 1, H318; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336	-
2-methylpropan-1-ol CAS : 78-83-1 EC : 201-148-0 Index No. : 603-108-00-1	0.128	Flammable liquids, Category 3, H226; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 1, H318; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336	-
Benzene CAS : 71-43-2 EC : 200-753-7 Index No. : 601-020-00-8	0.128	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Germ cell mutagenicity, Category 1B, H340; Carcinogenicity, Category 1A, H350; Specific target organ toxicity - repeated exposure, Category 1, H372	-
Toluene CAS : 108-88-3 EC : 203-625-9 Index No. : 601-021-00-3	0.128	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Skin Corrosion/Irritation, Category 2, H315; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 2, H373	-
Ethylbenzene CAS : 100-41-4 EC : 202-849-4 Index No. : 601-023-00-4	0.128	Flammable liquids, Category 2, H225; Aspiration hazard, Category 1, H304; Acute Toxicity - Inhalation, Category 4, H332; Specific target organ toxicity - repeated exposure, Category 2, H373	-
Xylene CAS : 1330-20-7	0.128	Flammable liquids, Category 3, H226; Acute Toxicity - Dermal, Category 4, H312;	-

EC : 215-535-7 Index No. : 601-022-00-9		Skin Corrosion/Irritation, Category 2, H315; Acute Toxicity - Inhalation, Category 4, H332	
Triethylamine CAS : 121-44-8 EC : 204-469-4 Index No. : 612-004-00-5	0.128	Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Dermal, Category 3, H311; Skin corrosion/irritation, Category 1A, H314; Serious eye damage/irritation, Category 1, H318; Acute Toxicity - Inhalation, Category 3, H331	H335:C ≥ 1%;H331:ATE = 7.2 mg/L (vapours) H311:ATE = 300 mg/kg bw H301:ATE = 100 mg/kg bw
2-dimethylaminoethanol CAS : 108-01-0 EC : 203-542-8 Index No. : 603-047-00-0	0.128	Flammable liquids, Category 3, H226; Acute Toxicity - Oral, Category 4, H302; Acute Toxicity - Dermal, Category 4, H312; Skin corrosion/irritation, Category 1B, H314; Acute Toxicity - Inhalation, Category 4, H332	H335:C ≥ 5%
2-amino-2-methylpropanol CAS : 124-68-5 EC : 204-709-8 Index No. : 603-070-00-6	0.128	Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 3, H412	-
Ethane-1,2-diol CAS : 107-21-1 EC : 203-473-3 Index No. : 603-027-00-1	0.128	Acute Toxicity - Oral, Category 4, H302	-
1,2-Propanediol CAS : 57-55-6 EC : 200-338-0 Index No. : -	0.128	Not Classified	-
Propane-1,3-diol CAS : 504-63-2 EC : 207-997-3 Index No. : -	0.128	Not Classified	-
2-butoxyethanol CAS : 111-76-2 EC : 203-905-0 Index No. : 603-014-00-0	0.128	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 2, H319; Acute Toxicity - Inhalation, Category 3, H331	H331:ATE=3 mg/L (Vapours) H302:ATE=1200 mg/kg bw
2-(2-butoxyethoxy)ethanol CAS : 112-34-5 EC : 203-961-6 Index No. : 603-096-00-8	0.128	Serious eye damage/irritation, Category 2, H319	-
2-(2-ethoxyethoxy)ethyl acetate CAS : 112-15-2 EC : 203-940-1 Index No. : -	0.128	Serious eye damage/irritation, Category 2, H319	-
2-(2-butoxyethoxy)ethyl acetate CAS : 124-17-4 EC : 204-685-9 Index No. : -	0.128	Serious eye damage/irritation, Category 2, H319	-
2,2,4-trimethylpentane-1,3-diol CAS : 144-19-4 EC : 205-619-1 Index No. : -	0.128	Serious eye damage/irritation, Category 2, H319	-

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Ingestion	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give plenty of water to drink. Refer for medical attention.
Inhalation	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO ₂ or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.

5.2 Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	May emit poisonous fumes on fire.
6	Development of hazardous combustion gases or vapor possible in the event of fire.
7	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
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2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
6	Do not touch or walk through spilled material.
7	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
8	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
9	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
10	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

1	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
2	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
3	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
4	Collect absorbent material using a clean, non-sparking tool.
5	Cover with anti-solvent foam to reduce evaporation.
6	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
7	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
8	Do not touch or cross spills.
9	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
10	Spray water disperses the vapor and dilutes the liquid spill.
11	Do not touch broken containers and spills before putting on appropriate protective clothing.
12	Cut off the source of the leak as much as possible.
13	Keep leaks in a ventilated place.
14	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
15	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
16	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.
17	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
2	Disposal considerations advice is contained in Section 13 of the SDS.

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Use only non-sparking tools.
2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
2	Replace the contaminated clothing immediately.

| 7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

| 7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.
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8 Exposure controls/personal protection

| 8.1 Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Acetonitrile	Permissible exposure standards for workers in the workplace	40	67	60	100.5
	European Union	40	70	-	-
	France	40	70	-	-
	Germany (AGS)	10	17	20	34
	Germany (DFG)	10	17	20	34
	Italy	20	35	-	-
Ethanol	Permissible exposure standards for workers in the workplace	1000	1880	1000	1880
	France	1000	1900	5000	9500

	Germany (AGS)	200	380	800	1520
	Germany (DFG)	200	380	800	1520
	United Kingdom	1000	1920	-	-
	Austria	1000	1900	2000	3800
Methanol	Japan - JSOH(2024–2025)	200	260	-	-
	Permissible exposure standards for workers in the workplace	200	262	250	327.5
	European Union	200	260	-	-
	France	200	260	-	-
	Germany (AGS)	100	130	200	260
	Germany (DFG)	100	130	200	260
Propan-1-ol	Permissible exposure standards for workers in the workplace	200	491	250	613.75
	France	200	500	-	-
	United Kingdom	200	500	250	625
	Austria	200	500	-	-
	Belgium	100	250	-	-
	Denmark	200	500	400	1000
Propan-2-ol	Japan - JSOH(2024–2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	400	983	500	1228.75
	France	-	-	400	980
	Germany (AGS)	200	500	400	1000
	Germany (DFG)	200	500	400	1000
	United Kingdom	400	999	500	1250
Butan-1-ol	Japan - JSOH(2024–2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	100	303	125	378.75
	France	-	-	50	150
	Germany (AGS)	100	310	100	310
	Germany (DFG)	100	310	100	310

	United Kingdom	-	-	50	154
2-methylpropan-1-ol	Japan - JSOH(2024-2025)	50	150	-	-
	Permissible exposure standards for workers in the workplace	50	152	75	190
	France	50	150	-	-
	Germany (AGS)	100	310	100	310
	Germany (DFG)	100	310	100	310
	United Kingdom	50	154	75	231
	Benzene	Japan - JSOH(2024-2025)	1(individual excess lifetime risk of cancer 10^{-3})	-	-
Permissible exposure standards for workers in the workplace		1	3.2	2	6.4
European Union		0.2	0.66	-	-
France		1	3.25	-	-
Germany (AGS)		0.6	1.9	4.8	15.2
Italy		1	3.25	-	-
Toluene		Japan - JSOH(2024-2025)	50	188	-
	Permissible exposure standards for workers in the workplace	50	188	75	235
	European Union	50	192	100	384
	France	20	76.8	100	384
	Germany (AGS)	50	190	100	380
	Germany (DFG)	50	190	100	380
	Ethylbenzene	Japan - JSOH(2024-2025)	20	87	-
Permissible exposure standards for workers in the workplace		100	434	125	542.5
European Union		100	442	200	884
France		20	88.4	100	442
Germany (AGS)		20	88	40	176
Germany (DFG)		20	88	40	176

Xylene	Japan - JSOH(2024-2025)	50	217	-	-
	Permissible exposure standards for workers in the workplace	100	434	125	542.5
	European Union	50	221	100	442
	France	50	221	100	442
	Germany (AGS)	50	220	100	440
	Germany (DFG)	50	220	100	440
Triethylamine	Permissible exposure standards for workers in the workplace	10	41	15	61.5
	European Union	2	8.4	3	12.6
	France	1	4.2	3	12.6
	Germany (AGS)	1	4.2	2	8.4
	Germany (DFG)	1	4.2	2	8.4
	Italy	2	8.4	3	12.6
2-dimethylaminoethanol	United Kingdom	2	7.4	6	22
	Denmark	10(provisional)	-	-	-
	Latvia	-	5	-	-
	New Zealand	2	7.4	6	22
	Canada - Ontario	3	11	6	22
2-amino-2-methylpropanol	Germany (AGS)	1	3.7	2	7.4
	Germany (DFG)	1	3.7	2	7.4
	Switzerland	2.4	8.7	4.8	17.4
Ethane-1,2-diol	Permissible exposure standards for workers in the workplace	-	10(mist)	-	15(mist)
	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	20	52	40	104
	France	20	52	40	104
	Germany (AGS)	10	26	20	52
	Germany (DFG)	10	26	20	52
1,2-Propanediol	United Kingdom	-	10(particulates)	-	-
	Ireland	150(vapour and	470(vapour and	-	-

		particulates)	particulates)		
	Latvia	-	7	-	-
	New Zealand	150	474	-	-
	Norway	25	79	-	-
	Poland	-	100	-	-
2-butoxyethanol	Japan - JSOH(2024–2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	25	121	37.5	151.25
	European Union	20	98	50	246
	France	10	49	50	246
	Germany (AGS)	10	49	20	98
	Germany (DFG)	10	49	20	98
2-(2-butoxyethoxy)ethanol	European Union	10	67.5	15	101.2
	France	10	67.5	15	101.2
	Germany (AGS)	10	67	15	100
	Germany (DFG)	10	67	15	100.5
	Italy	10	67.5	15	101.2
	United Kingdom	10	67.5	15	101.2
2-(2-ethoxyethoxy)ethyl acetate	Sweden	15	110	30	220
2-(2-butoxyethoxy)ethyl acetate	Germany (AGS)	10	67	15	100
	Germany (DFG)	10	85	15	127.5
	Sweden	15	130	30	250
	Switzerland	10	85	15	127.5

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Methanol	USA -ACGIH	Methanol(Urine)	15mg/L	End of shift	
Propan-2-ol	USA -ACGIH	Acetone(Urine)	40mg/L	End of shift at end of work week	
Benzene	SCOEL(EU)	benzene/blood	28 µg/L	immediately end of shift	
		phenylmercapturic acid/urine	46 µg/L creatinine	end of exposure/shift	
		S-Phenylmercapturic acid(Creatinine in urine)	25µg/g	End of shift	
		t,t-Muconic acid(Creatinine	500µg/g	End of shift	

		in urine)			
Toluene	USA -ACGIH	o-Cresol, with hydrolysis(Creatinine in urine)	0.3mg/g	End of shift	
		Toluene(Urine)	0.03mg/L	End of shift	
		Toluene(Blood)	0.02mg/L	Prior to last shift of work week	
Ethylbenzene	USA -ACGIH	Sum of mandelic acid and phenylglyoxylic acid(Creatinine in urine)	150mg/g	End of shift	
Xylene	USA -ACGIH	Methylhippuric acids(Creatinine in urine)	0.3g/g	End of shift	
2-butoxyethanol	USA -ACGIH	Butoxyacetic acid, with hydrolysis(Creatinine in urine)	200mg/g	End of shift	

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Acetonitrile	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethanol	Inhalation	No data available	No data available	No data available	380 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Methanol	Inhalation	No data available	No data available	130 mg/m ³	130 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Propan-1-ol	Inhalation	No data available	No data available	No data available	268 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Propan-2-ol	Inhalation	No data available	No data available	No data available	500 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Butan-1-ol	Inhalation	No data available	No data available	310 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

2-methylpropan-1-ol	Inhalation	No data available	No data available	310 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Benzene	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Toluene	Inhalation	No data available	No data available	192 mg/m ³	192 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethylbenzene	Inhalation	No data available	No data available	No data available	77 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Xylene	Inhalation	No data available	No data available	221 mg/m ³	221 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Triethylamine	Inhalation	No data available	No data available	8.4 mg/m ³	8.4 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-dimethylaminoethanol	Inhalation	No data available	No data available	1.76 mg/m ³	1.76 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-amino-2-methylpropanol	Inhalation	No data available	No data available	No data available	6.5 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethane-1,2-diol	Inhalation	No data available	No data available	35 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-Propanediol	Inhalation	No data available	No data available	10 mg/m ³	168 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Propane-1,3-diol	Inhalation	No data available	No data available	No data available	12 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-butoxyethanol	Inhalation	No data available	No data available	No data available	98 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-(2-butoxyethoxy)	Inhalation	No data available	No data available	67.5 mg/m ³	No data available

Methanol	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-(2-ethoxyethoxy)methyl acetate	Inhalation	No data available	No data available	3 mg/m ³	10.5 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2-(2-butoxyethoxy)methyl acetate	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
2,2,4-trimethylpentane-1,3-diol	Inhalation	No data available	No data available	No data available	6.61 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Acetonitrile	10 mg/L	1 mg/L	32 mg/L	40.5 mg/kg sediment dw	4.05 mg/kg sediment dw	No hazard identified	2.23 mg/kg soil dw	No potential for bioaccumulation
Ethanol	960 µg/L	790 µg/L	580 mg/L	3.6 mg/kg sediment dw	2.9 mg/kg sediment dw	No hazard identified	630 µg/kg soil dw	380 - 720 mg/kg food
Methanol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Propan-1-ol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Propan-2-ol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Butan-1-ol	82 µg/L	8.2 µg/L	2.476 g/L	324 µg/kg sediment dw	32.4 µg/kg sediment dw	No hazard identified	16.6 µg/kg soil dw	No potential for bioaccumulation
2-methylpropan-1-ol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
Benzene	80 µg/L	8 µg/L	39 mg/L	1.36 mg/kg sediment dw	136 µg/kg sediment dw	No data available	225 µg/kg soil dw	No potential for bioaccumulation
Toluene	74 - 680	7.4 - 680	840 -	1.78 -	178 -	No	313 -	No

	µg/L	µg/L	13610 µg/L	16.39 mg/kg sediment dw	16390 µg/kg sediment dw	hazard identified	2890 µg/kg soil dw	potential for bioaccumulation
Ethylbenzene	100 µg/L	10 - 100 µg/L	9.6 mg/L	13.7 mg/kg sediment dw	1.37 mg/kg sediment dw	No hazard identified	2.68 mg/kg soil dw	20 mg/kg food
Xylene	44 - 327 µg/L	4.4 - 327 µg/L	1.6 - 6.58 mg/L	2.52 - 12.46 mg/kg sediment dw	252 - 12460 µg/kg sediment dw	No hazard identified	852 - 2310 µg/kg soil dw	No potential for bioaccumulation
Triethylamine	110 µg/L	11 µg/L	100 mg/L	1.575 mg/kg sediment dw	158 µg/kg sediment dw	No hazard identified	250 µg/kg soil dw	No potential for bioaccumulation
2-dimethylaminoethanol	66.1 µg/L	4 µg/L	10 mg/L	246 µg/kg sediment dw	15 µg/kg sediment dw	No hazard identified	10 µg/kg soil dw	No potential for bioaccumulation
2-amino-2-methylpropanol	188 µg/L	18.8 µg/L	10 mg/L	710 µg/kg sediment dw	71 µg/kg sediment dw	No hazard identified	30 µg/kg soil dw	No potential for bioaccumulation
Ethane-1,2-diol	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No potential for bioaccumulation
1,2-Propanediol	260 mg/L	26 mg/L	20 g/L	572 mg/kg sediment dw	57.2 mg/kg sediment dw	No hazard identified	50 mg/kg soil dw	No potential for bioaccumulation
Propane-1,3-diol	7.417 mg/L	741.7 µg/L	6 g/L	26.96 mg/kg sediment dw	2.696 mg/kg sediment dw	No hazard identified	1.488 mg/kg soil dw	No potential for bioaccumulation
2-butoxyethanol	8.8 mg/L	880 µg/L	463 mg/L	34.6 mg/kg sediment dw	3.46 mg/kg sediment dw	No hazard identified	2.33 mg/kg soil dw	20 mg/kg food
2-(2-butoxyethoxy) ethanol	1.1 mg/L	110 µg/L	No hazard identified	4.4 mg/kg sediment dw	440 µg/kg sediment dw	No hazard identified	320 µg/kg soil dw	56 mg/kg food
2-(2-ethoxyethoxy) ethyl acetate	1 mg/L	100 µg/L	10 mg/L	5.85 mg/kg sediment dw	585 µg/kg sediment dw	No hazard identified	583 µg/kg soil dw	No potential for bioaccumulation
2-(2-butoxyethoxy) ethyl acetate	108 µg/L	10.8 µg/L	100 mg/L	800 µg/kg sediment dw	80 µg/kg sediment dw	No hazard identified	290 µg/kg soil dw	70 mg/kg food
2,2,4-trimethylpentane-1,3-diol	109.1 µg/L	10.91 µg/L	20 mg/L	903 µg/kg	90.3 µg/kg	No hazard	117 µg/kg	No data available

				sediment dw	sediment dw	identified	soil dw	
Note 1: A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).								
Note 2: The PNEC values of the remaining components not shown in the product are not available yet.								

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available
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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	clear or clear yellow liquid
Colour	clear or clear yellow liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-46 (Acetonitrile)
Initial boiling point and boiling range(°C)	82 (Acetonitrile)
Flash point(Closed cup, °C)	2 (Acetonitrile)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%d(v/v)]	Upper limit : 17 (Acetonitrile); Lower limit : 3 (Acetonitrile)
Vapor pressure	9.9kPa (25°C,Acetonitrile)
Vapor density(Air = 1)	1.4 (Acetonitrile)

Relative density(Water=1)	0.8 (Acetonitrile)
Solubility	1000000mg/L (25 °C,Acetonitrile)
n-octanol/water partition coefficient	-0.3 (Acetonitrile)
Auto-ignition temperature(°C)	524 (Acetonitrile)
Decomposition temperature(°C)	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	Not applicable

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available
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9.2.2 Other safety characteristics

Other safety characteristics	No information available
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10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	In contact with N-halogen compounds may cause a potensive explosive hazardous. In contact with oxidants causes severe reactions, and may cause a fire or explosion. In contact with halides may cause an active reaction. In contact with oxidants, anhydrides, metals, metal oxides / KMnO4 metal salts, nitro-compounds may cause a fire or explosion.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	N - halogenated compounds, sulfuric acid and strong oxidants. Oxidants, alkali metals, alkaline earth metals and aluminum. Halides, oxidants and halogen. Oxidants, halogen, anhydrides, acids, metals, metal oxides, potassium permanganate, nitro-compounds and metal salts.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

22 Mix VOCs in acetonitrile	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Causes serious eye irritation(Category 2)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	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
Germ cell mutagenicity	May cause genetic defects(Category 1B)

Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Benzene	930mg/kg(Rat)	> 8260mg/kg(Rabbit)	No information available
2-(2-ethoxyethoxy)ethyl acetate	11000mg/kg(Rat)	15300mg/kg(Rabbit)	No information available
Acetonitrile	2460mg/kg(Rat)	> 2000mg/kg(Rabbit)	4.748mg/L(Rabbit)
Triethylamine	460mg/kg(Rat)	415mg/kg(Rabbit)	No information available
2-methylpropan-1-ol	2460mg/kg(Rat)	3400mg/kg(Rabbit)	No information available
Propan-2-ol	5045mg/kg(Rat)	12800mg/kg(Rabbit)	No information available
Xylene	4300mg/kg(Rat)	> 1700mg/kg(Rabbit)	21.712mg/L(Rat)
Toluene	636mg/kg(Rat)	12200mg/kg(Rabbit)	49mg/L(Rat)
1,2-Propanediol	20000mg/kg(Rat)	20800mg/kg(Rabbit)	No information available
Butan-1-ol	790mg/kg(Rat)	3400mg/kg(Rabbit)	24.252mg/L(Rat)
2-(2-butoxyethoxy)ethanol	5660mg/kg(Rat)	2700mg/kg(Rabbit)	No information available
2-(2-butoxyethoxy)ethyl acetate	6500mg/kg(Rat)	14500mg/kg(Rabbit)	72.5mg/L(Rat)
Ethanol	7060mg/kg(Rat)	No information available	39mg/L(Mouse)
2-butoxyethanol	470mg/kg(Rat)	> 2000mg/kg(Rat)	2.174mg/L(Rat)
Methanol	5628mg/kg(Rat)	15800mg/kg(Rabbit)	83.867mg/L(Rat)
Ethane-1,2-diol	4700mg/kg(Rat)	10600mg/kg(Rabbit)	No information available
2-dimethylaminoethanol	2000mg/kg(Rat)	1220mg/kg(Rabbit)	5.983mg/L(Rat)
2,2,4-trimethylpentane-1,3-diol	2000mg/kg(Rat)	5900mg/kg(Rabbit)	No information available
Ethylbenzene	3500mg/kg(Rat)	15400mg/kg(Rabbit)	No information available
Propan-1-ol	1870mg/kg(Rat)	5040mg/kg(Rabbit)	No information available
2-amino-2-methylpropano-1-ol	2900mg/kg(Rat)	No information available	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Acetonitrile	Not Listed	Not Listed
Ethanol	Category 1(Remark 1)	Not Listed
Methanol	Not Listed	Not Listed
Propan-1-ol	Not Listed	Not Listed
Propan-2-ol	Category 3	Not Listed
Butan-1-ol	Not Listed	Not Listed
2-methylpropan-1-ol	Not Listed	Not Listed
Benzene	Category 1	Category K

Toluene	Category 3	Not Listed
Ethylbenzene	Category 2B	Not Listed
Xylene	Category 3	Not Listed
Triethylamine	Not Listed	Not Listed
2-dimethylaminoethanol	Not Listed	Not Listed
2-amino-2-methylpropanol	Not Listed	Not Listed
Ethane-1,2-diol	Not Listed	Not Listed
1,2-Propanediol	Not Listed	Not Listed
Propane-1,3-diol	Not Listed	Not Listed
2-butoxyethanol	Category 3	Not Listed
2-(2-butoxyethoxy)ethanol	Not Listed	Not Listed
2-(2-ethoxyethoxy)ethyl acetate	Not Listed	Not Listed
2-(2-butoxyethoxy)ethyl acetate	Not Listed	Not Listed
2,2,4-trimethylpentane-1,3-diol	Not Listed	Not Listed

Remark 1: for alcoholic beverages only

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Acetonitrile	No information available
Ethanol	No information available
Methanol	No information available
Propan-1-ol	No information available
Propan-2-ol	No information available
Butan-1-ol	No information available
2-methylpropan-1-ol	No information available
Benzene	No information available
Toluene	No information available
Ethylbenzene	No information available
Xylene	No information available
Triethylamine	No information available
2-dimethylaminoethanol	No information available
2-amino-2-methylpropanol	No information available
Ethane-1,2-diol	No information available
1,2-Propanediol	No information available
Propane-1,3-diol	No information available

2-butoxyethanol	No information available
2-(2-butoxyethoxy)ethanol	No information available
2-(2-ethoxyethoxy)ethyl acetate	No information available
2-(2-butoxyethoxy)ethyl acetate	No information available
2,2,4-trimethylpentane-1,3-diol	No information available

11.2.2 Other Information

Other Information	See Section 11.1
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12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Benzene	LC ₅₀ : 21.6mg/L (96h)(Fish)	EC ₅₀ : 10.9mg/L (48h)(Crustaceans)	ErC ₅₀ : 1600mg/L (96h)(Algae)
2-(2-ethoxyethoxy)ethyl acetate	LC ₅₀ : 110mg/L (96h)(Fish)	No information available	No information available
Acetonitrile	LC ₅₀ : > 100mg/L (96h)(Fish)	EC ₅₀ : > 1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >700mg/L (72h)(Algae)
Triethylamine	LC ₅₀ : 24mg/L (96h)(Fish)	EC ₅₀ : 34mg/L (48h)(Crustaceans)	ErC ₅₀ : 8.0mg/L (72h)(Algae)
2-methylpropan-1-ol	LC ₅₀ : 1510mg/L (96h)(Fish)	EC ₅₀ : 1200mg/L (48h)(Crustaceans)	No information available
Propan-2-ol	LC ₅₀ : 9640mg/L (96h)(Fish)	EC ₅₀ : >1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
Xylene	LC ₅₀ : 2.6mg/L (96h)(Fish)	No information available	No information available
Toluene	LC ₅₀ : 25mg/L (96h)(Fish)	EC ₅₀ : 4.1mg/L (48h)(Crustaceans)	ErC ₅₀ : 29mg/L (72h)(Algae)
1,2-Propanediol	LC ₅₀ : > 100mg/L (96h)(Fish)	EC ₅₀ : >1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
Butan-1-ol	LC ₅₀ : >100mg/L (96h)(Fish)	EC ₅₀ : >1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
2-(2-butoxyethoxy)ethanol	LC ₅₀ : 1300mg/L (96h)(Fish)	No information available	No information available
2-(2-butoxyethoxy)ethyl acetate	LC ₅₀ : 60mg/L (96h)(Fish)	No information available	No information available
Ethanol	LC ₅₀ : 11200mg/L (96h)(Fish)	EC ₅₀ : 9950mg/L (48h)(Crustaceans)	No information available
2-butoxyethanol	LC ₅₀ : 1370mg/L (96h)(Fish)	EC ₅₀ : >1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
Methanol	LC ₅₀ : 24000mg/L (96h)(Fish)	EC ₅₀ : 24500mg/L (48h)(Crustaceans)	No information available
Ethane-1,2-diol	LC ₅₀ : >100mg/L (96h)(Fish)	EC ₅₀ : >1100mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
2-dimethylaminoethanol	LC ₅₀ : 146.63mg/L	EC ₅₀ : 98.37mg/L	ErC ₅₀ : 66.08mg/L

	(96h)(Fish)	(48h)(Crustaceans)	(72h)(Algae)
2,2,4-trimethylpentane-1,3-diol	LC ₅₀ : > 700mg/L (96h)(Fish)	EC ₅₀ : > 109.1mg/L (48h)(Crustaceans)	ErC ₅₀ : > 110.1mg/L (72h)(Algae)
Ethylbenzene	LC ₅₀ : 4.2mg/L (96h)(Fish)	EC ₅₀ : 4.75mg/L (48h)(Crustaceans)	ErC ₅₀ : 3.6mg/L (96h)(Algae)
Propan-1-ol	LC ₅₀ : 4555mg/L (96h)(Fish)	EC ₅₀ : 4130mg/L (48h)(Crustaceans)	ErC ₅₀ : 4480mg/L (96h)(Algae)
Propane-1,3-diol	LC ₅₀ : 9720mg/L (96h)(Fish)	EC ₅₀ : 7417mg/L (48h)(Crustaceans)	ErC ₅₀ : 1 600mg/L (72h)(Algae)
2-amino-2-methylpropanol	LC ₅₀ :200mg/L (96h)(Fish)	No information available	No information available

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
2-butoxyethanol	No information available	NOEC : >100mg/L(Crustaceans)	NOEC : 130mg/L(Algae)
Acetonitrile	NOEC : 102mg/L(Fish)	NOEC : >960mg/L(Crustaceans)	NOEC : 700mg/L(Algae)
Triethylamine	No information available	NOEC : 11mg/L(Crustaceans)	NOEC : 1.1mg/L(Algae)
Ethane-1,2-diol	No information available	NOEC : 100mg/L(Crustaceans)	NOEC : 1000mg/L(Algae)
Propan-2-ol	NOEC : > 100mg/L(Fish)	NOEC : >100mg/L(Crustaceans)	NOEC : 1000mg/L(Algae)
Toluene	No information available	NOEC : 1.2mg/L(Crustaceans)	NOEC : 9.1mg/L(Algae)
Butan-1-ol	NOEC : 46mg/L(Fish)	NOEC : 4.1mg/L(Crustaceans)	NOEC : 180mg/L(Algae)
1,2-Propanediol	NOEC : >100mg/L(Fish)	NOEC : 1000mg/L(Crustaceans)	NOEC : 1000mg/L(Algae)

12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Ethanol	Low(Half-life = 2.17 days)	Low(Half-life = 5.08 days)
Methanol	Low	Low
Butan-1-ol	Low(Half-life = 54 days)	Low(Half-life = 3.65 days)
Xylene	High(Half-life = 360 days)	Low(Half-life = 1.83 days)
2-amino-2-methylpropanol	Low	Low
Ethane-1,2-diol	Low(Half-life = 24 days)	Low(Half-life = 3.46 days)
1,2-Propanediol	Low	Low
2-(2-butoxyethoxy)ethanol	Low	Low
2-(2-butoxyethoxy)ethyl acetate	Low	Low
2,2,4-trimethylpentane-1,3-diol	Low	Low

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Ethanol	Low	Log Kow=-0.31
Methanol	Low	BCF=10
Butan-1-ol	Low	BCF=64
Xylene	Medium	BCF=740
2-amino-2-methylpropanol	Low	BCF=330
Ethane-1,2-diol	Low	BCF=200
1,2-Propanediol	Low	BCF=1
2-(2-butoxyethoxy)ethanol	Low	BCF=46
2-(2-butoxyethoxy)ethyl acetate	Low	Log Kow=2.9
2,2,4-trimethylpentane-1,3-diol	Low	Log Kow=1.24

12.4 Mobility in soil

Component	log Koc	Remark
Acetonitrile	0.653	
Ethanol	0	
Methanol	0.000	
Propan-2-ol	0.54	20 °C
Butan-1-ol	0.54	20 °C
Benzene	2.13	20 °C
Toluene	2.31	20 °C
Ethylbenzene	3.12	20 °C
Xylene	2.73	
Triethylamine	2.03	20 °C
2-dimethylaminoethanol	0.09	20 °C
2-amino-2-methylpropanol	0.083	log Kow method
Ethane-1,2-diol	0.000	
1,2-Propanediol	0.46	20 °C
Propane-1,3-diol	-0.47	20 °C
2-(2-butoxyethoxy)ethanol	1.000	
2-(2-ethoxyethoxy)ethyl acetate	1.354	
2-(2-butoxyethoxy)ethyl acetate	1.000	
2,2,4-trimethylpentane-1,3-diol	0.000	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Acetonitrile	Not PBT/vPvB
Ethanol	Not PBT/vPvB
Methanol	Not PBT/vPvB
Propan-1-ol	Insufficient information, temporarily unable to evaluate
Propan-2-ol	Not PBT/vPvB
Butan-1-ol	Not PBT/vPvB
2-methylpropan-1-ol	Not PBT/vPvB
Benzene	Not PBT/vPvB
Toluene	Not PBT/vPvB
Ethylbenzene	Not PBT/vPvB
Xylene	Not PBT/vPvB
Triethylamine	Not PBT/vPvB
2-dimethylaminoethanol	Not PBT/vPvB
2-amino-2-methylpropanol	Not PBT/vPvB
Ethane-1,2-diol	Not PBT/vPvB
1,2-Propanediol	Not PBT/vPvB
Propane-1,3-diol	Not PBT/vPvB
2-butoxyethanol	Not PBT/vPvB
2-(2-butoxyethoxy)ethanol	Not PBT/vPvB
2-(2-ethoxyethoxy)ethyl acetate	Not PBT/vPvB
2-(2-butoxyethoxy)ethyl acetate	Not PBT/vPvB
2,2,4-trimethylpentane-1,3-diol	Not PBT/vPvB

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
Acetonitrile	No information available
Ethanol	No information available
Methanol	No information available
Propan-1-ol	No information available
Propan-2-ol	No information available
Butan-1-ol	No information available
2-methylpropan-1-ol	No information available
Benzene	No information available
Toluene	No information available
Ethylbenzene	No information available

Xylene	No information available
Triethylamine	No information available
2-dimethylaminoethanol	No information available
2-amino-2-methylpropanol	No information available
Ethane-1,2-diol	No information available
1,2-Propanediol	No information available
Propane-1,3-diol	No information available
2-butoxyethanol	No information available
2-(2-butoxyethoxy)ethanol	No information available
2-(2-ethoxyethoxy)ethyl acetate	No information available
2-(2-butoxyethoxy)ethyl acetate	No information available
2,2,4-trimethylpentane-1,3-diol	No information available

12.7 Other adverse effects

No information available

13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	
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IMDG-CODE

14.1 UN number	1992
14.2 UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
14.3 Transport hazard class	3+6.1
14.4 Packing group	II
14.5 Environmental hazards (Yes or no)	No

IATA-DGR

14.1 UN number	1992
14.2 UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.

14.3 Transport hazard class	3+6.1
14.4 Packing group	II
14.5 Environmental hazards (Yes or no)	No

UN-ADR

14.1 UN number	1992
14.2 UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
14.3 Transport hazard class	3+6.1
14.4 Packing group	II
14.5 Environmental hazards (Yes or no)	No

Special precautions for user

	<p>Transit should be anti-exposure, rain, high temperature. Strictly prohibited shipping or transportation with acids, alkalis, oxidants, food and food additives etc. Shipment of the goods vehicle exhaust pipe must be equipped with fire retardant devices, prohibit using mechanical equipment and tools of which easy to produce sparks. Transit should be anti-exposure, anti-rain, anti-high temperature. Transportation used tank (tank) cars should be grounded chain, tank can be installed to reduce the partition hole static electricity shocks. Strictly prohibited shipping or transportation with oxidants, acids, food and food additives etc. When bulk transport, Prohibit the use of cement or wooden boats. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.</p>
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Maritime transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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- ◆ Transport in bulk in accordance with the IGC Code

	Not Available
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15 Regulatory information

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

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Acetonitrile	√	√	√	√	√	√	√	√	√	√	√	√	√
Ethanol	√	√	√	√	√	√	√	√	√	√	√	√	√
Methanol	√	√	√	√	√	√	√	√	√	√	√	√	√
Propan-1-ol	√	√	√	√	√	√	√	√	√	√	√	√	√
Propan-2-ol	√	√	√	√	√	√	√	√	√	√	√	√	√

Butan-1-ol	√	√	√	√	√	√	√	√	√	√	√	√	√
2-methylpropan-1-ol	√	√	√	√	√	√	√	√	√	√	√	√	√
Benzene	√	√	√	√	√	√	√	√	√	√	√	√	√
Toluene	√	√	√	√	√	√	√	√	√	√	√	√	√
Ethylbenzene	√	√	√	√	√	√	√	√	√	√	√	√	√
Xylene	√	√	√	√	√	√	√	√	√	√	√	√	√
Triethylamine	√	√	√	√	√	√	√	√	√	√	√	√	√
2-dimethylaminoethanol	√	√	√	√	√	√	√	√	√	√	√	√	√
2-amino-2-methylpropanol	√	√	√	√	√	√	√	√	√	√	√	√	√
Ethane-1,2-diol	√	√	√	√	√	√	√	√	√	√	√	√	√
1,2-Propanediol	√	√	√	√	√	√	√	√	√	√	√	√	√
Propane-1,3-diol	√	√	√	√	√	√	√	√	√	√	√	√	√
2-butoxyethanol	√	√	√	√	√	√	√	√	√	√	√	√	√
2-(2-butoxyethoxy)ethanol	√	√	√	√	√	√	√	√	√	√	√	√	√
2-(2-ethoxyethoxy)ethyl acetate	√	√	√	√	√	√	√	√	√	√	√	√	√
2-(2-butoxyethoxy)ethyl acetate	√	√	√	√	√	√	√	√	√	√	√	√	√
2,2,4-trimethylpentane-1,3-diol	√	√	√	√	√	√	√	√	√	√	√	√	√

- [A] China Inventory of Existing Chemical Substances(IECSC)
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
 [C] United States Toxic Substances Control Act Inventory(TSCA)
 [D] Canadian Domestic Substances List(DSL)
 [E] New Zealand Inventory of Chemicals(NZIoC)
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
 [G] Korea Existing Chemicals Inventory(KECL)
 [H] Australian. Inventory of Industrial Chemical (AIICS)
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)
 [J] Thailand Existing Chemicals Inventory(TECI)
 [K] Mexico National Inventory of Chemical Substances (INSQ)
 [L] Russia Inventory of Existing Substances(DRAFT)
 [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
Acetonitrile	×	×	×
Ethanol	×	×	×
Methanol	×	×	×
Propan-1-ol	×	×	×
Propan-2-ol	×	×	×
Butan-1-ol	×	×	×
2-methylpropan-1-ol	×	×	×
Benzene	×	×	×
Toluene	×	×	×

Ethylbenzene	x	x	x
Xylene	x	x	x
Triethylamine	x	x	x
2-dimethylaminoethanol	x	x	x
2-amino-2-methylpropano I	x	x	x
Ethane-1,2-diol	x	x	x
1,2-Propanediol	x	x	x
Propane-1,3-diol	x	x	x
2-butoxyethanol	x	x	x
2-(2-butoxyethoxy)ethano I	x	x	x
2-(2-ethoxyethoxy)ethyl acetate	x	x	x
2-(2-butoxyethoxy)ethyl acetate	x	x	x
2,2,4-trimethylpentane-1,3 -diol	x	x	x

【A】 The Montreal Protocol on Substances that Deplete the Ozone Layer

【B】 Stockholm Convention on Persistent Organic Pollutants (POPs)

【C】 Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
Acetonitrile	x	x	x	√	√	x	x	x	x
Ethanol	x	x	x	√	√	x	x	x	x
Methanol	x	x	√	√	√	√	x	x	x
Propan-1-ol	x	x	x	√	√	x	x	x	x
Propan-2-ol	x	x	x	√	√	x	x	x	x
Butan-1-ol	x	x	x	√	√	√	x	x	x
2-methylpropan-1- ol	x	x	x	√	√	√	x	x	x
Benzene	x	x	√	√	√	x	√	x	x
Toluene	x	x	√	√	√	√	x	x	x
Ethylbenzene	x	x	x	√	√	x	x	x	x
Xylene	x	x	x	√	√	√	x	x	x
Triethylamine	x	x	x	√	√	x	x	x	x
2-dimethylaminoet hanol	x	x	x	√	√	x	x	x	x
2-amino-2-methylp ropanol	x	x	x	√	√	x	x	x	x
Ethane-1,2-diol	x	x	x	√	√	x	x	x	x
1,2-Propanediol	x	x	x	√	√	x	x	x	x
Propane-1,3-diol	x	x	x	√	√	x	x	x	x

2-butoxyethanol	x	x	x	√	√	x	x	x	x
2-(2-butoxyethoxy) ethanol	x	x	√	√	√	x	x	x	x
2-(2-ethoxyethoxy) ethyl acetate	x	x	x	√	√	x	x	x	x
2-(2-butoxyethoxy) ethyl acetate	x	x	x	√	√	x	x	x	x
2,2,4-trimethylpentane-1,3-diol	x	x	x	√	√	x	x	x	x

[A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation

[B] Substances requiring authorisation under EU REACH regulation

[C] Substances restricted under EU REACH

[D] Pre-registered substances under EU REACH

[E] Registered substances under EU REACH

[F] Substance Evaluation – CoRAP under EU REACH

[G] List of priority substances under EU water policy (Directive 2455/2001/EC)

[H] Substances subject to POPs Regulation

[I] Substances proposed as POPs

Note:

“√” Indicates that the substance included in the regulations.

“x” No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark
Acetonitrile	WGK 2	
Ethanol	WGK 1	The assessment refers to pure ethanol. Denatured alcohol must be classified in accordance with Annex 1 No. 5 of the AwSV.
Methanol	WGK 2	
Propan-1-ol	WGK 1	
Propan-2-ol	WGK 1	
Butan-1-ol	WGK 1	
2-methylpropan-1-ol	WGK 1	
Benzene	WGK 3	
Toluene	WGK 3	
Ethylbenzene	WGK 1	
Xylene	WGK 2	
Triethylamine	WGK 1	
2-dimethylaminoethanol	WGK 1	
2-amino-2-methylpropanol	WGK 1	
Ethane-1,2-diol	WGK 1	The assessment refers to the unadditived substance. If additives are added, higher WGK are possible in accordance with the rules specified in Annex 1 No. 5 of the AwSV.
1,2-Propanediol	WGK 1	
Propane-1,3-diol	WGK 1	

2-butoxyethanol	WGK 1	
2-(2-butoxyethoxy)ethanol	WGK 1	
2-(2-ethoxyethoxy)ethyl acetate	WGK 1	
2-(2-butoxyethoxy)ethyl acetate	WGK 1	
2,2,4-trimethylpentane-1,3-diol	WGK 1	

[WGK 1]	slightly hazardous to water
[WGK 2]	obviously hazardous to water
[WGK 3]	highly hazardous to water
[nwg]	non-hazardous to water
[awg]	hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Ethanol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Methanol	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
Propan-1-ol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Propan-2-ol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Butan-1-ol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not	

	allowed to exceed 1,5 kg/h.	
2-methylpropan-1-ol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Benzene	Chapter 5.2.7.1.1 Carcinogenic substances. Class II. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 1,5 g/hr or Mass conc.: 0,5 mg/m ³	
Toluene	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
Ethylbenzene	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Xylene	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Triethylamine	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
2-dimethylaminoethanol	Chapter 5.2.5 Organic Substances, class I. The following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0,10 kg/hr or Mass conc.: 20 mg/m ³	
2-amino-2-methylpropanol	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not	

	allowed to exceed 1,5 kg/h.	
Ethane-1,2-diol	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
1,2-Propanediol	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
Propane-1,3-diol	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
2-butoxyethanol	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
2-(2-butoxyethoxy)ethanol	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
2-(2-ethoxyethoxy)ethyl acetate	Chapter 5.2.5 Organic Substances.The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas:Mass flow:0,50 kg/hr or Mass conc.:50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	

2-(2-butoxyethoxy)ethyl acetate	Chapter 5.2.5 Organic Substances. The following values, specified as overall carbon, are in all not allowed to be exceeded in exhaust gas: Mass flow: 0,50 kg/hr or Mass conc.: 50 mg/m ³ At old units with an annual mass flow till 1,5 Mg/a, specified as total carbon, the emissions in exhaust gas are not allowed to exceed 1,5 kg/h.	
2,2,4-trimethylpentane-1,3-diol	Chapter 5.2.5 Organic Substances, dust, including fine dust. To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values: Mass flow: 0,20 kg/hr or Mass conc.: 20 mg/m ³ The mass per unit volume of 0,15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h. For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	

German technical rules for hazardous substances (TRGS)

Component	TRGS	Remark
Acetonitrile	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Ethanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Methanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Propan-1-ol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Propan-2-ol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 906	
Butan-1-ol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS	

	721 TRGS 722 TRGS 723 TRGS 724	
2-methylpropan-1-ol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Benzene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Toluene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Ethylbenzene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Xylene	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Triethylamine	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
2-dimethylaminoethanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
2-amino-2-methylpropanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
Ethane-1,2-diol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
1,2-Propanediol	TRGS 500 TRGS 509 TRGS 510 TRGS 800	
Propane-1,3-diol	TRGS 500 TRGS 509 TRGS 510 TRGS 800	
2-butoxyethanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
2-(2-butoxyethoxy)ethanol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS	

	800	
2-(2-ethoxyethoxy)ethyl acetate	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
2-(2-butoxyethoxy)ethyl acetate	TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
2,2,4-trimethylpentane-1,3-diol	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800	

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16 Other information

Information on revision

Creation Date	2026/01/16
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

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