

Safety Data Sheet

22 Mix VOCs in acetonitrile

Version : V2.0.0.1

Report No. : BWQ8455-2016-MSDS-EP

Creation Date : 2026/01/16

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. | BWQ8455-2016 |
| 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 |

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 |

Precautionary statements

◆ Prevention

| | |
|------|--|
| 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. |
| 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

| | |
|------------------|--|
| P403+P235 | Store in a well-ventilated place. Keep cool. |
|------------------|--|

◆ Disposal

| | |
|-------------|---|
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |
|-------------|---|

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 |
| 2,2'-oxydiethanol | 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 |
| 2,2'-oxydiethanol | 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 | 99.7184 | 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 | 0.0128 | Flammable liquids, Category 2, H225 | - |
| Methanol CAS : 67-56-1 | 0.0128 | Flammable liquids, Category 2, H225; Acute Toxicity - Oral, Category 3, H301; | H370:C ≥ 10% H371:3% ≤ C < 10% |

| | | | |
|---|--------|--|---|
| EC : 200-659-6 Index No. : 603-001-00-X | | Acute Toxicity - Dermal, Category 3, H311; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure, Category 1, H370 | |
| Propan-1-ol CAS : 71-23-8 EC : 200-746-9 Index No. : 603-003-00-0 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | 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 EC : 215-535-7 Index No. : 601-022-00-9 | 0.0128 | Flammable liquids, Category 3, H226; Acute Toxicity - Dermal, Category 4, H312; 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 | 0.0128 | 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, | H335:C ≥ 1%;H331:ATE = 7.2 mg/L (vapours) H311:ATE = 300 mg/kg bw H301:ATE = 100 mg/kg bw |

| | | | |
|--|--------|--|--|
| | | Category 1, H318; Acute Toxicity - Inhalation, Category 3, H331 | |
| 2-dimethylaminoethanol CAS : 108-01-0 EC : 203-542-8 Index No. : 603-047-00-0 | 0.0128 | 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 | 0.0128 | 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 | 0.0128 | Acute Toxicity - Oral, Category 4, H302 | - |
| 1,2-Propanediol CAS : 57-55-6 EC : 200-338-0 Index No. : - | 0.0128 | Not Classified | - |
| Propane-1,3-diol CAS : 504-63-2 EC : 207-997-3 Index No. : - | 0.0128 | Not Classified | - |
| 2,2'-oxydiethanol CAS : 111-46-6 EC : 203-872-2 Index No. : 603-140-00-6 | 0.0128 | Acute Toxicity - Oral, Category 4, H302 | - |
| 2-butoxyethanol CAS : 111-76-2 EC : 203-905-0 Index No. : 603-014-00-0 | 0.0128 | 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 | 0.0128 | Serious eye damage/irritation, Category 2, H319 | - |
| 2-(2-ethoxyethoxy)ethyl acetate CAS : 112-15-2 EC : 203-940-1 Index No. : - | 0.0128 | Serious eye damage/irritation, Category 2, H319 | - |
| 2-(2-butoxyethoxy)ethyl acetate CAS : 124-17-4 EC : 204-685-9 Index No. : - | 0.0128 | Serious eye damage/irritation, Category 2, H319 | - |
| 2,2,4-trimethylpentane-1,3-diol CAS : 144-19-4 EC : 205-619-1 Index No. : - | 0.0128 | 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. |
|---|--|

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. |
| 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. |
| ◆ 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. |
|---|--|

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 | - | - |

| | | | | | |
|---------------------------------|---|------------------------------|------------------------------|-----|----------|
| | 5) | | | | |
| | 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 particulates) | 470(vapour and particulates) | - | - |

| | | | | | |
|--|---|-----|------|------|--------|
| | Latvia | - | 7 | - | - |
| | New Zealand | 150 | 474 | - | - |
| | Norway | 25 | 79 | - | - |
| | Poland | - | 100 | - | - |
| 2,2'-oxydiethanol | Germany (AGS) | 10 | 44 | 40 | 176 |
| | Germany (DFG) | 10 | 44 | 40 | 176 |
| | United Kingdom | 23 | 101 | - | - |
| | Austria | 10 | 44 | 40 | 176 |
| | Denmark | 2.5 | 11 | 5 | 22 |
| | Ireland | 23 | 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 in urine) | 500µg/g | End of shift | |
| 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/m3 |
| | 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/m3 | 130 mg/m3 |
| | 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/m3 |
| | 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/m3 |
| | 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 |

| | | | | | |
|--|------------|-------------------|-------------------|------------------------|------------------------|
| 2,2'-oxydiethanol | Inhalation | No data available | No data available | 60 mg/m ³ | 44 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)ethanol | Inhalation | No data available | No data available | 67.5 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-(2-ethoxyethoxy)ethyl 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)ethyl 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 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 µg/L | 7.4 - 680 µg/L | 840 - 13610 µg/L | 1.78 - 16.39 mg/kg sediment dw | 178 - 16390 µg/kg sediment dw | No hazard identified | 313 - 2890 µg/kg soil dw | | No 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 |
| 2,2'-oxydiethanol | 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 |
| 2-butoxyethanol | 8.8 mg/L | 880 µg/L | 463 mg/L | 34.6 mg/kg sediment | 3.46 mg/kg sediment | No hazard identified | 2.33 mg/kg soil dw | | 20 mg/kg food |

| | | | | | | | | |
|---|------------|------------|----------------------|------------------------|------------------------|----------------------|-------------------|----------------------------------|
| | | | | dw | dw | | | |
| 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 sediment dw | 90.3 µg/kg sediment dw | No hazard identified | 117 µg/kg soil dw | No data available |

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 |
|---------------------------------|--------------------------|

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[%(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 |
|--|--------------------------|

9.2.2 Other safety characteristics

| | |
|------------------------------|--------------------------|
| Other safety characteristics | No information available |
|------------------------------|--------------------------|

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 | Based on available data, the classification criteria are not met |

Acute toxicity

| Component | LD ₅₀ (oral) | LD ₅₀ (dermal) | LC ₅₀ (inhalation,4h) |
|---------------------------------|-------------------------|---------------------------|----------------------------------|
| Acetonitrile | 2460mg/kg(Rat) | > 2000mg/kg(Rabbit) | 4.748mg/L(Rabbit) |
| Butan-1-ol | 790mg/kg(Rat) | 3400mg/kg(Rabbit) | 24.252mg/L(Rat) |
| Ethylbenzene | 3500mg/kg(Rat) | 15400mg/kg(Rabbit) | No information available |
| Triethylamine | 460mg/kg(Rat) | 415mg/kg(Rabbit) | No information available |
| Xylene | 4300mg/kg(Rat) | > 1700mg/kg(Rabbit) | 21.712mg/L(Rat) |
| Ethane-1,2-diol | 4700mg/kg(Rat) | 10600mg/kg(Rabbit) | No information available |
| 2,2'-oxydiethanol | 12565mg/kg(Rat) | 11890mg/kg(Rabbit) | No information available |
| Propan-1-ol | 1870mg/kg(Rat) | 5040mg/kg(Rabbit) | No information available |
| 2-butoxyethanol | 470mg/kg(Rat) | > 2000mg/kg(Rat) | 2.174mg/L(Rat) |
| Toluene | 636mg/kg(Rat) | 12200mg/kg(Rabbit) | 49mg/L(Rat) |
| Methanol | 5628mg/kg(Rat) | 15800mg/kg(Rabbit) | 83.867mg/L(Rat) |
| 2-(2-butoxyethoxy)ethanol | 5660mg/kg(Rat) | 2700mg/kg(Rabbit) | No information available |
| 2-methylpropan-1-ol | 2460mg/kg(Rat) | 3400mg/kg(Rabbit) | No information available |
| 2-amino-2-methylpropano-1-ol | 2900mg/kg(Rat) | No information available | No information available |
| 2-(2-ethoxyethoxy)ethyl acetate | 11000mg/kg(Rat) | 15300mg/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) |
| Benzene | 930mg/kg(Rat) | > 8260mg/kg(Rabbit) | No information available |
| 1,2-Propanediol | 20000mg/kg(Rat) | 20800mg/kg(Rabbit) | No information available |
| Propan-2-ol | 5045mg/kg(Rat) | 12800mg/kg(Rabbit) | No information available |
| 2,2,4-trimethylpentane-1,3-diol | 2000mg/kg(Rat) | 5900mg/kg(Rabbit) | No information available |
| 2-dimethylaminoethanol | 2000mg/kg(Rat) | 1220mg/kg(Rabbit) | 5.983mg/L(Rat) |

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 |
| 2,2'-oxydiethanol | 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 |
| 2,2'-oxydiethanol | 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 |
|-------------------|------------------|

12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

| Component | Fish | Crustaceans | Algae or other aquatic plants |
|------------------|--|--|--|
| Acetonitrile | LC ₅₀ : > 100mg/L (96h)(Fish) | EC ₅₀ : > 1000mg/L (48h)(Crustaceans) | ErC ₅₀ : >700mg/L (72h)(Algae) |
| Butan-1-ol | LC ₅₀ : >100mg/L (96h)(Fish) | EC ₅₀ : >1000mg/L (48h)(Crustaceans) | ErC ₅₀ : >1000mg/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) |
| Triethylamine | LC ₅₀ : 24mg/L (96h)(Fish) | EC ₅₀ : 34mg/L (48h)(Crustaceans) | ErC ₅₀ : 8.0mg/L (72h)(Algae) |
| Xylene | LC ₅₀ : 2.6mg/L (96h)(Fish) | No information available | 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) |
| 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) |

| | | | |
|--|--|--|---|
| 2,2'-oxydiethanol | LC ₅₀ : 75200mg/L (96h)(Fish) | No information available | No information available |
| 2-butoxyethanol | LC ₅₀ : 1370mg/L (96h)(Fish) | EC ₅₀ : >1000mg/L (48h)(Crustaceans) | ErC ₅₀ : >1000mg/L (72h)(Algae) |
| Toluene | LC ₅₀ : 25mg/L (96h)(Fish) | EC ₅₀ : 4.1mg/L (48h)(Crustaceans) | ErC ₅₀ : 29mg/L (72h)(Algae) |
| Methanol | LC ₅₀ : 24000mg/L (96h)(Fish) | EC ₅₀ : 24500mg/L (48h)(Crustaceans) | No information available |
| 2-(2-butoxyethoxy)ethanol | LC ₅₀ : 1300mg/L (96h)(Fish) | No information available | No information available |
| 2-methylpropan-1-ol | LC ₅₀ : 1510mg/L (96h)(Fish) | EC ₅₀ : 1200mg/L (48h)(Crustaceans) | No information available |
| 2-amino-2-methylpropan-1-ol | LC ₅₀ : 200mg/L (96h)(Fish) | No information available | No information available |
| 2-(2-ethoxyethoxy)ethyl acetate | LC ₅₀ : 110mg/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 |
| Benzene | LC ₅₀ : 21.6mg/L (96h)(Fish) | EC ₅₀ : 10.9mg/L (48h)(Crustaceans) | ErC ₅₀ : 1600mg/L (96h)(Algae) |
| 1,2-Propanediol | LC ₅₀ : > 100mg/L (96h)(Fish) | EC ₅₀ : >1000mg/L (48h)(Crustaceans) | ErC ₅₀ : >1000mg/L (72h)(Algae) |
| Propan-2-ol | LC ₅₀ : 9640mg/L (96h)(Fish) | EC ₅₀ : >1000mg/L (48h)(Crustaceans) | ErC ₅₀ : >1000mg/L (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) |
| 2-dimethylaminoethanol | LC ₅₀ : 146.63mg/L (96h)(Fish) | EC ₅₀ : 98.37mg/L (48h)(Crustaceans) | ErC ₅₀ : 66.08mg/L (72h)(Algae) |

Chronic aquatic toxicity

| Component | Fish | Crustaceans | Algae or other aquatic plants |
|------------------------|--------------------------|------------------------------|-------------------------------|
| Acetonitrile | NOEC : 102mg/L(Fish) | NOEC : >960mg/L(Crustaceans) | NOEC : 700mg/L(Algae) |
| Butan-1-ol | NOEC : 46mg/L(Fish) | NOEC : 4.1mg/L(Crustaceans) | NOEC : 180mg/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) |
| 2-butoxyethanol | No information available | NOEC : >100mg/L(Crustaceans) | NOEC : 130mg/L(Algae) |
| Toluene | No information available | NOEC : 1.2mg/L(Crustaceans) | NOEC : 9.1mg/L(Algae) |
| 1,2-Propanediol | NOEC : >100mg/L(Fish) | NOEC : 1000mg/L(Crustaceans) | NOEC : 1000mg/L(Algae) |
| Propan-2-ol | NOEC : > 100mg/L(Fish) | NOEC : >100mg/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'-oxydiethanol | 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'-oxydiethanol | Low | BCF=180 |
| 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'-oxydiethanol | 0.000 | |
| 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 |
| 2,2'-oxydiethanol | 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 |
| 2,2'-oxydiethanol | 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 |  |
|--------------------|---|

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</p> |
|--|--|

| | |
|--|----------------------------|
| | transporting requirements. |
|--|----------------------------|

Maritime transport in bulk according to IMO instruments

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

| | |
|--|---------------|
| | Not Available |
|--|---------------|

- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| | |
|--|---------------|
| | Not Available |
|--|---------------|

- ◆ Transport in bulk in accordance with the IGC Code

| | |
|--|---------------|
| | Not Available |
|--|---------------|

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 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| 2,2'-oxydiethanol | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| 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 | x | x | x |
| Ethanol | x | x | x |
| Methanol | x | x | x |
| Propan-1-ol | x | x | x |
| Propan-2-ol | x | x | x |
| Butan-1-ol | x | x | x |
| 2-methylpropan-1-ol | x | x | x |
| Benzene | x | x | x |
| Toluene | x | x | x |
| 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 |
| 2,2'-oxydiethanol | 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-dimethylaminoethanol | x | x | x | √ | √ | x | x | x | x |
| 2-amino-2-methylpropanol | 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 |
| 2,2'-oxydiethanol | 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 | |
| 2,2'-oxydiethanol | 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 | |

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| | 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 | |

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| | emissions in exhaust gas are not allowed to exceed 1,5 kg/h. | |
| 2,2'-oxydiethanol | 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 | |

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| | 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 . | |
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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 | |

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| 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 | |
| 2,2'-oxydiethanol | TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 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 | | |

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.