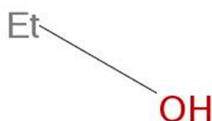


SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|------------------------|--|
| Product form | : Substance |
| Substance name | : Ethanol 96% denatured with IPA, MEK and Bitrex |
| IUPAC name | : Ethanol |
| EC-No. | : 200-578-6 |
| CAS-No. | : 64-17-5 |
| REACH registration No. | : 01-2119457610-43-xxxx |
| Formula | : C ₂ H ₆ O |
| Chemical structure | : |



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

1.2.1. Relevant identified uses

| | |
|------------------------------|---|
| Main use category | : Industrial use, Professional use |
| Use of the substance/mixture | : Diluents Solvents Chemical raw material |

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Sasma
Willem Dreeslaan 301
2729 NE Zoetermeer – Zuid-Holland
Netherlands
T +31 79 363 30 64
sales@sasmabv.com - www.sasmabv.com

1.4. Emergency telephone number

| | |
|------------------|---|
| Emergency number | : Worldwide: For Hazardous Materials (or Dangerous Goods) Incident, Spill, Leak, Exposure, or Accident – Call NCEC Day or Night(24/7) +441865407333 - SASMA29003-NCEC |
|------------------|---|

| Country | Organisation/Company | Address | Emergency number | Comment |
|----------------|---|--------------------------|------------------|---------|
| United Kingdom | Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust | Avonley Road SE14 5ER | +44 20 7188 7188 | |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

| | |
|--|------|
| Flammable liquids, Category 2 | H225 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Full text of H- and EUH-statements: see section 16 | |

Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Causes serious eye irritation.

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.

Precautionary statements (CLP) :

P210 - Keep away from hot surfaces, open flames, sparks, heat. – No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, lighting equipment.
P264 - Wash hands thoroughly after handling.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

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

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

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

| Component | |
|--|---|
| Ethanol (64-17-5) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| Isopropylalcohol (67-63-0) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| denatonium benzoate (Bitrex) (3734-33-6) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| Water | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Ethanol 96% denatured with IPA, MEK and Bitrex
CAS-No. : 64-17-5
EC-No. : 200-578-6

| Name | Product identifier | % |
|---------|--|---------|
| Ethanol | CAS-No.: 64-17-5 EC-No.: 200-578-6 EC Index-No.: 603-002-00-5 REACH-no: 01-2119457610-43-xxxx | 81 – 89 |

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| Name | Product identifier | % |
|------------------------------|--|-----------|
| Methyl ethyl ketone | CAS-No.: 78-93-3 EC-No.: 201-159-0 EC Index-No.: 606-002-00-3 REACH-no: 01-2119457290-43-xxxx | 3 – 5 |
| Isopropylalcohol | CAS-No.: 67-63-0 EC-No.: 200-661-7 EC Index-No.: 603-117-00-0 REACH-no: 01-2119457558-25-xxxx | 3 – 5 |
| Water | - | 3.1 – 4.9 |
| denatonium benzoate (Bitrex) | CAS-No.: 3734-33-6 EC-No.: 223-095-2 REACH-no: 01-2120102843-65-xxxx | 0.001 – 1 |

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Victim conscious with laboured breathing: half-seated. Respiratory arrest: artificial respiration or oxygen. Keep watching the victim. Check the vital functions. Never give alcohol to drink. Keep the victim calm, avoid physical strain. Never give anything by mouth to an unconscious person. Call a physician immediately. Prevent cooling by covering the victim (no warming up). |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. |
| First-aid measures after skin contact | : Rinse skin with water/shower. Take off immediately all contaminated clothing. |
| First-aid measures after eye contact | : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion | : Call a poison center or a doctor if you feel unwell. |

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

| | |
|------------------------------------|-------------------|
| Symptoms/effects after eye contact | : Eye irritation. |
|------------------------------------|-------------------|

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|---|
| Suitable extinguishing media | : Water spray. Dry powder. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | : Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|--|
| Fire hazard | : Highly flammable liquid and vapour. |
| Explosion hazard | : Vapours may form explosive mixture with air. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Pressurised container: May burst if heated. Prolonged exposure to fire may cause containers to rupture/explode. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

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5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Precautionary measures fire | : Eliminate all ignition sources if safe to do so. Keep container closed when not in use. This product is not to be used under conditions of poor ventilation. Stop leak if safe to do so. Keep container tightly closed and away from heat, sparks and flame. Keep cool. Protect from sunlight. |
| Firefighting instructions | : Eliminate all ignition sources if safe to do so. Do not enter fire area without proper protective equipment, including respiratory protection. Take account of environmentally hazardous firefighting water. Contain the extinguishing fluids by bunding. Keep people away. Isolate the area where it burns and do not stand unnecessary entrance. Use water spray around containers that have been exposed to fire and put it on the fire cool the affected area until the fire is extinguished and the danger of re-ignition has passed. Fight fire from protected place or at a safe distance. Consider using unmanned water cannons. Immediately remove all personnel from the area upon detection the safety valve or discoloration of the container. Burning liquids can be extinguished by diluting with water. Do not use a direct water jet. This can spread the fire. Move container away from fire area, if this can be done without danger. Burning liquids may be removed with running water to protect personnel and damage to minimize property. |
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| General measures | : If leakage cannot be stopped, evacuate the area. Ensure adequate ventilation. Avoid breathing vapors / spray and contact with skin and eyes. Not spilled material touch or walk in. Eliminate all sources of ignition. Keep away from heat, sparks and open fire. Wear protective clothing as described in Section 8 of this Safety Data Sheet. Avoid contact with skin and eyes. Eliminate every possible source of ignition. No flames, no sparks. Eliminate all sources of ignition. Stop leak if safe to do so. |
| 6.1.1. For non-emergency personnel | |
| Protective equipment | : Wear recommended personal protective equipment. |
| Emergency procedures | : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. |
| 6.1.2. For emergency responders | |
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|---|
| For containment | : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Do not touch or walk on the spilled product. Try to reduce evaporation. Provide adequate ventilation. |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.
- Incompatible materials : Sources of ignition. Heat sources.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: ignition sources. heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. (strong) acids. ignition sources. oxidizing agents.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

| Methyl ethyl ketone (78-93-3) | |
|---|---|
| EU - Indicative Occupational Exposure Limit (IOEL) | |
| Local name | Butanone |
| IOEL TWA | 600 mg/m ³ |
| IOEL STEL | 900 mg/m ³ |
| IOEL STEL [ppm] | 300 ppm |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |
| Netherlands - Occupational Exposure Limits | |
| Local name | 2-Butanon |
| TGG-8u (OEL TWA) | 590 mg/m ³ |
| TGG-8u (OEL TWA) [ppm] | 197 ppm |
| TGG-15min (OEL STEL) | 900 mg/m ³ |
| TGG-15min (OEL STEL) [ppm] | 300 ppm |
| Remark | H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een H-aanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen. |
| Regulatory reference | Arbeidsomstandighedenregeling 2023 |

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

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8.1.4. DNEL and PNEC

| Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5) | |
|--|--------------------------|
| DNEL/DMEL (Workers) | |
| Long-term - systemic effects, dermal | 343 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 950 mg/m ³ |
| Long-term - local effects, inhalation | 1900 mg/m ³ |
| DNEL/DMEL (General population) | |
| Long-term - systemic effects, oral | 87 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 114 mg/m ³ |
| Long-term - systemic effects, dermal | 206 mg/kg bodyweight/day |
| Long-term - local effects, inhalation | 950 mg/m ³ |
| PNEC (Water) | |
| PNEC aqua (freshwater) | 0.96 mg/l |
| PNEC aqua (marine water) | 0.79 mg/l |
| PNEC (Sediment) | |
| PNEC sediment (freshwater) | 3.6 mg/kg dwt |
| PNEC sediment (marine water) | 2.9 mg/kg dwt |
| PNEC (Soil) | |
| PNEC soil | 0.38 mg/kg dwt |
| PNEC (STP) | |
| PNEC sewage treatment plant | 580 mg/l |

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

| Eye protection | | | |
|----------------|----------------------|-------------------|----------|
| Type | Field of application | Characteristics | Standard |
| Safety glasses | | With side shields | EN 166 |

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8.2.2.2. Skin protection

Skin and body protection:

Wear fire/flammable resistant/retardant clothing.

Hand protection:

Protective gloves

| Hand protection | | | | | |
|-----------------|-----------------------|-------------------|----------------|-------------|------------|
| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
| Reusable gloves | Butyl rubber | 6 (> 480 minutes) | 0.5 | | EN ISO 374 |
| Reusable gloves | Fluoroelastomer (FKM) | 6 (> 480 minutes) | 0.4 | | EN ISO 374 |

Other skin protection

Materials for protective clothing:

Excellent resistance: Butyl rubber. Less resistance: Chloroprene rubber

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear gas mask with filter type A if conc. in air > exposure limit

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Liquid |
| Colour | : Colourless. |
| Appearance | : Clear liquid. |
| Odour | : Alcohol odour. Pleasant odour. |
| Odour threshold | : 100 ppm 188 mg/m ³ |
| Melting point | : -114 °C |
| Freezing point | : Not available |
| Boiling point | : 78.2 °C |
| Flammability | : Not applicable |
| Explosive properties | : Vapours can form explosive mixtures with air. |
| Oxidising properties | : the study does not need to be conducted because there are no chemical groups present in the molecule which are associated with oxidising properties and hence, the classification procedure does not need to be applied. |
| Explosive limits | : Not available |
| Lower explosion limit | : 3.3 vol % |
| Upper explosion limit | : 22.7 vol % |
| Flash point | : 11.8 °C |
| Auto-ignition temperature | : 363 °C |
| Decomposition temperature | : Not available |
| pH | : 6 – 9 |
| pH solution | : 10 g/l |
| Viscosity, kinematic | : 1.516 mm ² /s |
| Viscosity, dynamic | : 1.19 mPa·s |
| Solubility | : Soluble in water. Soluble in acetone. Soluble in ether. Soluble in chloroform. Soluble in oils/fats. Soluble in methanol. Soluble in acids. Water: Full |
| Partition coefficient n-octanol/water (Log Kow) | : Not available |

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| | |
|---|-----------------------------------|
| Partition coefficient n-octanol/water (Log Pow) | : 0.35 |
| Vapour pressure | : 59 hPa |
| Vapour pressure at 50°C | : 78.7 hPa |
| Critical pressure | : 63840 hPa |
| Density | : 0.785 g/cm ³ @ 25 °C |
| Relative density | : 0.79 |
| Relative vapour density at 20°C | : 1.043 |
| Particle characteristics | : Not applicable |

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

| | |
|--|---|
| Relative evaporation rate (butylacetate=1) | : 2.4 |
| Relative evaporation rate (ether=1) | : 8.3 |
| VOC content | : 785 g/l |
| Other properties | : Gas/vapour heavier than air at 20°C, Clear, Hygroscopic, Volatile |

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

| | |
|-----------------------------|------------------|
| Acute toxicity (oral) | : Not classified |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

| Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5) | |
|--|---------------|
| LD50 oral rat | 10740 mg/kg |
| LD50 dermal rabbit | 16000 mg/kg |
| Ethanol (64-17-5) | |
| LD50 oral rat | 10470 mg/kg |
| LD50 dermal rabbit | 17100 mg/kg |
| LC50 Inhalation - Rat (Vapours) | 124.7 mg/l/4h |

Ethanol 96% denatured with IPA, MEK and Bitrex

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| Methyl ethyl ketone (78-93-3) | |
|---|---|
| LD50 oral rat | 2054 mg/kg |
| LD50 dermal rabbit | > 10 ml/kg |
| Isopropylalcohol (67-63-0) | |
| LD50 oral rat | 5840 mg/kg |
| LD50 dermal rabbit | 16.4 ml/kg |
| LC50 Inhalation - Rat [ppm] | 5000 ppm/4h |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| LD50 oral rat | 584 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |
| Skin corrosion/irritation | : Not classified pH: 6 – 9 |
| Ethanol (64-17-5) | |
| pH | 7 |
| Methyl ethyl ketone (78-93-3) | |
| pH | 7 |
| Isopropylalcohol (67-63-0) | |
| pH | 7.5 |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| pH | 6.5 – 7.5 |
| Water | |
| pH | 7 (7 – 8.5) |
| Serious eye damage/irritation | : Causes serious eye irritation. pH: 6 – 9 |
| Ethanol (64-17-5) | |
| pH | 7 |
| Methyl ethyl ketone (78-93-3) | |
| pH | 7 |
| Isopropylalcohol (67-63-0) | |
| pH | 7.5 |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| pH | 6.5 – 7.5 |
| Water | |
| pH | 7 (7 – 8.5) |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : Not classified |

Ethanol 96% denatured with IPA, MEK and Bitrex

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| Methyl ethyl ketone (78-93-3) | |
|---|------------------------------------|
| STOT-single exposure | May cause drowsiness or dizziness. |
| Isopropylalcohol (67-63-0) | |
| STOT-single exposure | May cause drowsiness or dizziness. |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5) | |
| Viscosity, kinematic | 1.516 mm ² /s |
| Ethanol (64-17-5) | |
| Viscosity, kinematic | 1.516 mm ² /s |
| Methyl ethyl ketone (78-93-3) | |
| Viscosity, kinematic | 0.5 mm ² /s |
| Isopropylalcohol (67-63-0) | |
| Viscosity, kinematic | 2.675 mm ² /s |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| Viscosity, kinematic | Not applicable |

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : Endocrine disrupting properties
The substance has not been identified as having endocrine disrupting properties in accordance with Regulation (EU) 2017/2100 or Regulation 2018/605, nor has it been included in the Candidate List of Substances of Very High Concern under EU REACH Article 59 due to this property.

11.2.2. Other information

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

| Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5) | |
|---|-----------------------------|
| LC50 - Fish [1] | 11200 mg/l Fresh water fish |
| EC50 - Crustacea [1] | 5012 mg/l Fresh water |
| EC50 - Crustacea [2] | 857 mg/l Marine water |
| EC50 72h - Algae [1] | 275 mg/l Fresh water |
| EC50 72h - Algae [2] | 1900 mg/l Marine water |
| Ethanol (64-17-5) | |
| LC50 - Fish [1] | 14200 mg/l |

Ethanol 96% denatured with IPA, MEK and Bitrex

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Ethanol (64-17-5) | |
|---|------------|
| EC50 - Crustacea [1] | 5012 mg/l |
| EC50 72h - Algae [1] | 275 mg/l |
| Methyl ethyl ketone (78-93-3) | |
| LC50 - Fish [1] | 2993 mg/l |
| EC50 - Crustacea [1] | 308 mg/l |
| EC50 72h - Algae [1] | 2029 mg/l |
| Isopropylalcohol (67-63-0) | |
| LC50 - Fish [1] | 9640 mg/l |
| EC50 - Crustacea [1] | 10000 mg/l |
| EC50 72h - Algae [1] | 1800 mg/l |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| LC50 - Fish [1] | 1000 mg/l |
| EC50 - Crustacea [1] | 13 mg/l |

12.2. Persistence and degradability

| Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5) | |
|---|--|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. |
| Chemical oxygen demand (COD) | 1.7 g O ₂ /g substance |
| ThOD | 2.1 g O ₂ /g substance |
| Biodegradation | 75 % in 20 days |
| Ethanol (64-17-5) | |
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available. |
| Chemical oxygen demand (COD) | 1.7 g O ₂ /g substance |
| ThOD | 2.1 g O ₂ /g substance |
| Biodegradation | 60 % in 5 days |
| Methyl ethyl ketone (78-93-3) | |
| Persistence and degradability | Readily biodegradable in water. |
| Biodegradation | > 60 % in 14 days |
| Isopropylalcohol (67-63-0) | |
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | 1.19 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 2.23 g O ₂ /g substance |
| ThOD | 2.4 g O ₂ /g substance |
| denatonium benzoate (Bitrex) (3734-33-6) | |
| Persistence and degradability | Biodegradability in water: no data available. No (test)data on mobility of the substance available. |

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12.3. Bioaccumulative potential

Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5)

| | |
|---|--|
| Partition coefficient n-octanol/water (Log Pow) | 0.35 |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

Ethanol (64-17-5)

| | |
|---|------|
| Partition coefficient n-octanol/water (Log Pow) | 0.35 |
|---|------|

Methyl ethyl ketone (78-93-3)

| | |
|---|--|
| Partition coefficient n-octanol/water (Log Pow) | 0.3 |
| Bioaccumulative potential | In accordance with column 2 of REACH Annex IX, the aquatic / sediment bioaccumulation study (required in section 9.3.2) does not need to be conducted as the substance is expected to have a low potential for bioaccumulation because it has a low octanol water partition coefficient. |

denatonium benzoate (Bitrex) (3734-33-6)

| | |
|---|------|
| Partition coefficient n-octanol/water (Log Pow) | 1.78 |
| Partition coefficient n-octanol/water (Log Kow) | 0.9 |

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Ethanol 96% denatured with IPA, MEK and Bitrex (64-17-5)

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

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

Component

| | |
|--|---|
| Ethanol (64-17-5) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| Isopropylalcohol (67-63-0) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| denatonium benzoate (Bitrex) (3734-33-6) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| Water | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : See 2.3 and 11.2.

12.7. Other adverse effects

Additional information : No other effects known. Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

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| | |
|--|--|
| Product/Packaging disposal recommendations | : Beware of residues or vapours which remain in the drums. Do not burn empty packaging. Do not cut using a blowtorch. |
| Additional information | : Flammable vapours may accumulate in the container. |

SECTION 14: Transport information

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

| ADR | IMDG | IATA | ADN | RID |
|--|--|---|--|--|
| 14.1. UN number or ID number | | | | |
| UN 1987 | UN 1987 | UN 1987 | UN 1987 | UN 1987 |
| 14.2. UN proper shipping name | | | | |
| ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol) | ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol) | Alcohols, n.o.s. (Ethanol, Methylethylketon, Isopropylalcohol) | ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol) | ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol) |
| Transport document description | | | | |
| UN 1987 ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol), 3, II, (D/E) | UN 1987 ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol), 3, II | UN 1987 Alcohols, n.o.s. (Ethanol, Methylethylketon, Isopropylalcohol), 3, II | UN 1987 ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol), 3, II | UN 1987 ALCOHOLS, N.O.S. (Ethanol, Methylethylketon, Isopropylalcohol), 3, II |
| 14.3. Transport hazard class(es) | | | | |
| 3 | 3 | 3 | 3 | 3 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| II | II | II | II | II |
| 14.5. Environmental hazards | | | | |
| Dangerous for the environment: No | Dangerous for the environment: No Marine pollutant: No | Dangerous for the environment: No | Dangerous for the environment: No | Dangerous for the environment: No |
| No supplementary information available | | | | |

14.6. Special precautions for user

Overland transport

| | |
|---|---------------------|
| Classification code (ADR) | : F1 |
| Special provisions (ADR) | : 274, 601, 640D |
| Limited quantities (ADR) | : 1I |
| Excepted quantities (ADR) | : E2 |
| Packing instructions (ADR) | : P001, IBC02, R001 |
| Mixed packing provisions (ADR) | : MP19 |
| Portable tank and bulk container instructions (ADR) | : T7 |
| Portable tank and bulk container special provisions (ADR) | : TP1, TP8, TP28 |
| Tank code (ADR) | : LGBF |
| Vehicle for tank carriage | : FL |
| Transport category (ADR) | : 2 |
| Special provisions for carriage - Operation (ADR) | : S2, S20 |
| Hazard identification number (Kemler No.) | : 33 |

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| | | |
|-------------------------------|---|---|
| Orange plates | : |  |
| Tunnel restriction code (ADR) | : | D/E |
| EAC code | : | •3YE |

Transport by sea

| | | |
|---------------------------------|---|----------------|
| Special provisions (IMDG) | : | 274 |
| Limited quantities (IMDG) | : | 1 L |
| Excepted quantities (IMDG) | : | E2 |
| Packing instructions (IMDG) | : | P001 |
| IBC packing instructions (IMDG) | : | IBC02 |
| Tank instructions (IMDG) | : | T7 |
| Tank special provisions (IMDG) | : | TP1, TP8, TP28 |
| EmS-No. (Fire) | : | F-E |
| EmS-No. (Spillage) | : | S-D |
| Stowage category (IMDG) | : | B |

Air transport

| | | |
|--|---|----------|
| PCA Excepted quantities (IATA) | : | E2 |
| PCA Limited quantities (IATA) | : | Y341 |
| PCA limited quantity max net quantity (IATA) | : | 1L |
| PCA packing instructions (IATA) | : | 353 |
| PCA max net quantity (IATA) | : | 5L |
| CAO packing instructions (IATA) | : | 364 |
| CAO max net quantity (IATA) | : | 60L |
| Special provisions (IATA) | : | A3, A180 |
| ERG code (IATA) | : | 3L |

Inland waterway transport

| | | |
|-----------------------------------|---|----------------|
| Classification code (ADN) | : | F1 |
| Special provisions (ADN) | : | 274, 601, 640D |
| Limited quantities (ADN) | : | 1 L |
| Excepted quantities (ADN) | : | E2 |
| Equipment required (ADN) | : | PP, EX, A |
| Ventilation (ADN) | : | VE01 |
| Number of blue cones/lights (ADN) | : | 1 |

Rail transport

| | | |
|---|---|-------------------|
| Classification code (RID) | : | F1 |
| Special provisions (RID) | : | 274, 601, 640D |
| Limited quantities (RID) | : | 1L |
| Excepted quantities (RID) | : | E2 |
| Packing instructions (RID) | : | P001, IBC02, R001 |
| Mixed packing provisions (RID) | : | MP19 |
| Portable tank and bulk container instructions (RID) | : | T7 |
| Portable tank and bulk container special provisions (RID) | : | TP1, TP8, TP28 |
| Tank codes for RID tanks (RID) | : | LGBF |
| Transport category (RID) | : | 2 |
| Colis express (express parcels) (RID) | : | CE7 |
| Hazard identification number (RID) | : | 33 |

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

| EU restriction list (REACH Annex XVII) | |
|--|---|
| Reference code | Applicable on |
| 3(a) | Ethanol 96% denatured with IPA, MEK and Bitrex ; Ethanol ; Methyl ethyl ketone ; Isopropylalcohol |
| 3(b) | Ethanol 96% denatured with IPA, MEK and Bitrex ; Ethanol ; Methyl ethyl ketone ; Isopropylalcohol |
| 40. | Ethanol 96% denatured with IPA, MEK and Bitrex ; Ethanol ; Methyl ethyl ketone ; Isopropylalcohol |

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)

VOC content : 785 g/l

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

| Name | CN designation | CAS-No. | CN code | Category | Threshold | Annex |
|-------------------|----------------|---------|------------|------------|-----------|---------|
| Methylethylketone | Butanone | 78-93-3 | 2914 12 00 | Category 3 | | Annex I |

15.1.2. National regulations

France

| Occupational diseases | |
|-----------------------|---|
| Code | Description |
| RG 84 | Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide |

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 96).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

ABM category : A(4) - low hazard for aquatic organisms, may have longterm hazardous effects in aquatic environment

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| | |
|---|--|
| SZW-lijst van kankerverwekkende stoffen | : Ethanol 96% denatured with IPA, MEK and Bitrex is listed |
| SZW-lijst van mutagene stoffen | : The substance is not listed |
| SZW-lijst van reprotoxische stoffen – Borstvoeding | : Ethanol 96% denatured with IPA, MEK and Bitrex is listed |
| SZW-lijst van reprotoxische stoffen – Vruchtbaarheid | : Ethanol 96% denatured with IPA, MEK and Bitrex is listed |
| SZW-lijst van reprotoxische stoffen – Ontwikkeling | : Ethanol 96% denatured with IPA, MEK and Bitrex is listed |

Denmark

| | |
|------------------------|---|
| Class for fire hazard | : Class I-1 |
| Store unit | : 1 liter |
| Classification remarks | : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed |

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

| Indication of changes | | | |
|-----------------------|--|----------|----------|
| Section | Changed item | Change | Comments |
| | Supersedes | Added | |
| | Adverse health effects caused by endocrine disrupting properties | Added | |
| | Revision date | Added | |
| 1.1 | Chemical structure | Added | |
| 1.1 | Name | Modified | |
| 1.2 | Use of the substance/mixture | Modified | |
| 4.1 | First-aid measures general | Added | |
| 4.1 | First-aid measures after eye contact | Modified | |
| 5.1 | Unsuitable extinguishing media | Added | |
| 5.2 | Explosion hazard | Added | |
| 5.3 | Precautionary measures fire | Added | |
| 5.3 | Firefighting instructions | Added | |
| 6.1 | Protective equipment | Added | |
| 6.1 | General measures | Added | |
| 6.2 | Environmental precautions | Modified | |
| 6.3 | For containment | Added | |
| 6.4 | Reference to other sections (8, 13) | Modified | |
| 7.2 | Heat and ignition sources | Added | |
| 7.2 | Incompatible materials | Added | |
| 7.2 | Information on mixed storage | Added | |
| 8.2 | Personal protective equipment | Added | |
| 8.2 | Skin and body protection | Modified | |
| 9.1 | Melting point | Modified | |
| 12.3 | Bioaccumulative potential | Added | |

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| Indication of changes | | | |
|-----------------------|--|--------|----------|
| Section | Changed item | Change | Comments |
| 12.6 | Adverse effects on the environment caused by endocrine disrupting properties | Added | |

| Abbreviations and acronyms: | |
|-----------------------------|---|
| CAS-No. | Chemical Abstract Service number |
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BLV | Biological limit value |
| BOD | Biochemical oxygen demand (BOD) |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| COD | Chemical oxygen demand (COD) |
| DMEL | Derived Minimal Effect level |
| DNEL | Derived-No Effect Level |
| EC50 | Median effective concentration |
| EC-No. | European Community number |
| EN | European Standard |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| IOELV | Indicative Occupational Exposure Limit Value |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| N.O.S. | Not Otherwise Specified |
| NOAEC | No-Observed Adverse Effect Concentration |
| NOAEL | No-Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational Exposure Limit |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| STP | Sewage treatment plant |
| ThOD | Theoretical oxygen demand (ThOD) |
| TLM | Median Tolerance Limit |

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Abbreviations and acronyms:

| | |
|------|--|
| TRGS | Technical Rules for Hazardous Substances |
| SDS | Safety Data Sheet |
| VOC | Volatile Organic Compounds |
| WGK | Water Hazard Class |
| vPvB | Very Persistent and Very Bioaccumulative |

Training advice

: Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H- and EUH-statements:

| | |
|--------------|---|
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |

Safety Data Sheet (SDS), EU

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