

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

1.1. Product identifier

Product form : Mixture
 Product name : Ethyl Alcohol, 90% v/v
 Product code : VT240
 Other means of identification : Ethanol, Denatured, 90% v/v

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

Use of the substance/mixture : For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet

Val Tech Diagnostics, A Division of LabChem Inc
 Jackson's Pointe Commerce Park Building 1000
 1010 Jackson's Pointe Court
 Zelienople, PA 16063
 T 412-826-5230
 F 724-473-0647

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 2 H225
 Acute Tox. 4 (Oral) H302
 Skin Irrit. 2 H315
 Eye Irrit. 2A H319
 Repr. 2 H361
 STOT SE 3 H336
 STOT SE 1 H370

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS02

GHS07

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :

- H225 - Highly flammable liquid and vapour
- H302 - Harmful if swallowed
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H336 - May cause drowsiness or dizziness
- H361 - Suspected of damaging fertility or the unborn child
- H370 - Causes damage to organs (central nervous system, optic nerve) (oral, Dermal)

Precautionary statements (GHS-US) :

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
- P233 - Keep container tightly closed
- P240 - Ground/bond container and receiving equipment
- P241 - Use explosion-proof electrical, lighting, ventilating equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe mist, spray, vapours
- P264 - Wash exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P271 - Use only outdoors or in a well-ventilated area

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P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P235 - Keep cool
P330 - If swallowed, rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use carbon dioxide (CO₂), powder, alcohol-resistant foam for extinction
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

| Name | Product identifier | % | GHS-US classification |
|--------------------------------|--------------------|---------------|--|
| Ethanol | (CAS No) 64-17-5 | 74.55 - 80.55 | Flam. Liq. 2, H225 Carc. 1A, H350 Repr. 2, H361 |
| Water | (CAS No) 7732-18-5 | 9.63 - 14.45 | Not classified |
| Isopropyl Alcohol (2-Propanol) | (CAS No) 67-63-0 | 3.69 - 4.83 | Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336 |
| Methanol | (CAS No) 67-56-1 | 3.34 - 4.83 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370 |

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

Symptoms/injuries after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties. Central nervous system depression. Symptoms similar to those listed under ingestion.

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| | |
|--------------------------------------|---|
| Symptoms/injuries after skin contact | : Slight irritation. |
| Symptoms/injuries after eye contact | : Redness of the eye tissue. Lacrimation. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue. |
| Symptoms/injuries after ingestion | : AFTER ABSORPTION OF HIGH QUANTITIES: Risk of aspiration pneumonia. Red skin. Body temperature rise. Damp/clammy skin. Excited/restless. Accelerated heart action. Central nervous system depression. Dizziness. Narcosis. Headache. Drunkenness. Nausea. Vomiting. Disturbed motor response. Coordination disorders. Visual disturbances. Impaired concentration. Delusions. Disturbed sensation of pain. Disturbances of heart rate. Disturbances of consciousness. Tremor. Cramps/uncontrolled muscular contractions. Dilated pupils. |
| Chronic symptoms | : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Gastrointestinal complaints. Enlargement/affection of the liver. Change in the haemogramme/blood composition. Cardiac and blood circulation effects. High arterial pressure. Impairment of the nervous system. Behavioural disturbances. Mental confusion. Disturbed tactile sensibility. Tremor. Affection of the bone marrow. Affection of the endocrine system. Weakening of the immune system. |

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|---|
| Suitable extinguishing media | : Water spray. Alcohol-resistant foam. BC powder. Carbon dioxide. |
| Unsuitable extinguishing media | : Solid water jet ineffective as extinguishing medium. |

5.2. Special hazards arising from the substance or mixture

| | |
|------------------|--|
| Fire hazard | : DIRECT FIRE HAZARD. Highly flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard". |
| Explosion hazard | : DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard". |
| Reactivity | : Upon combustion: CO and CO ₂ are formed. Reacts violently with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) acids. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. |
| Protection during firefighting | : Heat/fire exposure: compressed air/oxygen apparatus. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|--|
| General measures | : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking. |
|------------------|--|

6.1.1. For non-emergency personnel

| | |
|----------------------|---|
| Protective equipment | : Gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. |
| Emergency procedures | : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes. |

6.1.2. For emergency responders

| | |
|----------------------|---|
| Protective equipment | : Equip cleanup crew with proper protection. Avoid breathing mist, spray, Vapors. |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

| | |
|-----------------|--|
| For containment | : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. |
|-----------------|--|

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- Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite or kieselguhr, powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.
- Hygiene measures : Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/... equipment.
- Storage conditions : Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep in fireproof place.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. water/moisture.
- Storage area : Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: stainless steel. aluminium. iron. copper. nickel. synthetic material. glass.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Ethanol (64-17-5) | | |
|--|------------------------|------------|
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 1900 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 1000 ppm |
| Isopropyl Alcohol (2-Propanol) (67-63-0) | | |
| USA ACGIH | ACGIH TWA (ppm) | 200 ppm |
| USA ACGIH | ACGIH STEL (ppm) | 200 ppm |
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 980 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 400 ppm |
| Methanol (67-56-1) | | |
| USA ACGIH | ACGIH TWA (ppm) | 200 ppm |
| USA ACGIH | ACGIH STEL (ppm) | 200 ppm |
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 260 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 200 ppm |

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8.2. Exposure controls

| | |
|-----------------------------------|--|
| Personal protective equipment | : Avoid all unnecessary exposure. |
| Materials for protective clothing | : GIVE EXCELLENT RESISTANCE: butyl rubber. viton. GIVE GOOD RESISTANCE: neoprene. tetrafluoroethylene. GIVE LESS RESISTANCE: nitrile rubber. polyethylene. GIVE POOR RESISTANCE: natural rubber. PVA. PVC. |
| Hand protection | : Gloves. |
| Eye protection | : Safety glasses. |
| Skin and body protection | : Protective clothing. |
| Respiratory protection | : Wear gas mask with filter type A if conc. in air > exposure limit. |
| Other information | : Do not eat, drink or smoke during use. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--|
| Physical state | : Liquid |
| Appearance | : Liquid. |
| Molecular mass | : 46.07 g/mol |
| Colour | : Colourless. |
| Odour | : Alcohol odour. Pleasant odour. |
| Odour threshold | : 100 ppm 188 mg/m ³ |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : 2.4 |
| Relative evaporation rate (ether=1) | : 8.3 |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : 25 °C |
| Self ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : 1.6 |
| Relative density | : No data available |
| Density | : 0.82 g/l |
| Solubility | : Soluble in water. Soluble in ether. Soluble in acetone. Soluble in chloroform. Soluble in oils/fats. Soluble in methanol. Soluble in acids. Water: Complete Ethanol: Not applicable Ether: Complete Acetone: Complete |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : 3.3 - 19.0 vol % 67 - 290 g/m ³ |

9.2. Other information

| | |
|------------------|--|
| Other properties | : Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Volatile. Substance has neutral reaction. |
|------------------|--|

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO₂ are formed. Reacts violently with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) acids.

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10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

| Ethanol (64-17-5) | |
|--------------------|---|
| LD50 oral rat | 10740 mg/kg (Rat; Experimental value,Rat; Experimental value) |
| LD50 dermal rabbit | > 16000 mg/kg (Rabbit) |

| Isopropyl Alcohol (2-Propanol) (67-63-0) | |
|--|--|
| LD50 oral rat | 5045 mg/kg (5840 mg/kg bodyweight; Rat; Rat; Experimental value,5840 mg/kg bodyweight; Rat; Rat; Experimental value) |
| LD50 dermal rabbit | 12870 mg/kg (16.4; Rabbit; Rabbit; Experimental value,16.4; Rabbit; Rabbit; Experimental value) |
| LC50 inhalation rat (mg/l) | 73 mg/l/4h (Rat) |

| Water (7732-18-5) | |
|-------------------|---------------|
| LD50 oral rat | ≥ 90000 mg/kg |

| Methanol (67-56-1) | |
|----------------------------|---|
| LD50 oral rat | > 5000 mg/kg (1187-2769 mg/kg bodyweight; Rat; Rat) |
| LD50 dermal rabbit | 15800 mg/kg (Rabbit) |
| LC50 inhalation rat (mg/l) | 85 mg/l/4h (Rat) |
| LC50 inhalation rat (ppm) | 64000 ppm/4h (Rat) |

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified

| Ethanol (64-17-5) | |
|-------------------|----------------------------|
| IARC group | 1 - Carcinogenic to humans |

| Isopropyl Alcohol (2-Propanol) (67-63-0) | |
|--|----------------------|
| IARC group | 3 - Not classifiable |

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness. Causes damage to organs (central nervous system, optic nerve) (oral, Dermal).
Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met
Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

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| | |
|---|---|
| Potential Adverse human health effects and symptoms | : Harmful if swallowed. Based on available data, the classification criteria are not met. |
| Symptoms/injuries after inhalation | : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties. Central nervous system depression. Symptoms similar to those listed under ingestion. |
| Symptoms/injuries after skin contact | : Slight irritation. |
| Symptoms/injuries after eye contact | : Redness of the eye tissue. Lacrimation. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue. |
| Symptoms/injuries after ingestion | : AFTER ABSORPTION OF HIGH QUANTITIES: Risk of aspiration pneumonia. Red skin. Body temperature rise. Damp/clammy skin. Excited/restless. Accelerated heart action. Central nervous system depression. Dizziness. Narcosis. Headache. Drunkenness. Nausea. Vomiting. Disturbed motor response. Coordination disorders. Visual disturbances. Impaired concentration. Delusions. Disturbed sensation of pain. Disturbances of heart rate. Disturbances of consciousness. Tremor. Cramps/uncontrolled muscular contractions. Dilated pupils. |
| Chronic symptoms | : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Gastrointestinal complaints. Enlargement/affection of the liver. Change in the haemogramme/blood composition. Cardiac and blood circulation effects. High arterial pressure. Impairment of the nervous system. Behavioural disturbances. Mental confusion. Disturbed tactile sensibility. Tremor. Affection of the bone marrow. Affection of the endocrine system. Weakening of the immune system. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-----------------|---|
| Ecology - water | : Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia). Slightly harmful to algae (EC50 (72h): 100 - 1000 mg/l). Not harmful to bacteria (EC50 >1000 mg/l). Inhibition of activated sludge. |
|-----------------|---|

| Ethyl Alcohol, 90% v/v | |
|---|---|
| Threshold limit other aquatic organisms 1 | 65 mg/l (72 h; Protozoa) |
| Threshold limit algae 1 | 1450 mg/l (192 h; Microcystis aeruginosa; Growth rate) |
| Threshold limit algae 2 | 5000 mg/l (168 h; Scenedesmus quadricauda; Growth rate) |

| Ethanol (64-17-5) | |
|---|---|
| LC50 fishes 1 | 14200 mg/l (96 h; Pimephales promelas; Nominal concentration) |
| EC50 Daphnia 1 | 9300 mg/l (48 h; Daphnia magna) |
| LC50 fish 2 | 13000 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss) |
| EC50 Daphnia 2 | 10800 mg/l (24 h; Daphnia magna) |
| Threshold limit other aquatic organisms 1 | 65 mg/l (72 h; Protozoa) |
| Threshold limit algae 1 | 1450 mg/l (192 h; Microcystis aeruginosa; Growth rate) |
| Threshold limit algae 2 | 5000 mg/l (168 h; Scenedesmus quadricauda; Growth rate) |

| Isopropyl Alcohol (2-Propanol) (67-63-0) | |
|--|---|
| LC50 fishes 1 | 4200 mg/l (96 h; Rasbora heteromorpha; Flow-through system) |
| EC50 Daphnia 1 | > 10000 mg/l (48 h; Daphnia magna) |
| LC50 fish 2 | 9640 mg/l (96 h; Pimephales promelas; Lethal) |
| EC50 Daphnia 2 | 13299 mg/l (48 h; Daphnia magna) |
| Threshold limit algae 1 | > 1000 mg/l (72 h; Scenedesmus subspicatus; Growth rate) |
| Threshold limit algae 2 | 1800 mg/l (72 h; Algae; Cell numbers) |

| Methanol (67-56-1) | |
|---|--|
| LC50 fishes 1 | 15400 mg/l (96 h; Lepomis macrochirus; Lethal) |
| EC50 Daphnia 1 | > 10000 mg/l (48 h; Daphnia magna; Lethal) |
| LC50 fish 2 | 10800 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss) |
| EC50 Daphnia 2 | 24500 mg/l (48 h; Daphnia magna) |
| Threshold limit other aquatic organisms 1 | 6600 mg/l (16 h; Pseudomonas putida) |
| Threshold limit algae 1 | 530 mg/l (192 h; Microcystis aeruginosa) |
| Threshold limit algae 2 | 8000 mg/l (168 h; Scenedesmus quadricauda) |

12.2. Persistence and degradability

| Ethyl Alcohol, 90% v/v | |
|-------------------------------|--|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available. |

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Ethanol (64-17-5)

| | |
|---------------------------------|--|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | 0.8 - 0.967 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.70 g O ₂ /g substance |
| ThOD | 2.10 g O ₂ /g substance |
| BOD (% of ThOD) | 0.43 % ThOD |

Isopropyl Alcohol (2-Propanol) (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 | 2.40 g O ₂ /g substance |
| BOD (% of ThOD) | 0.49 % ThOD |

Water (7732-18-5)

| | |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

Methanol (67-56-1)

| | |
|---------------------------------|--|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. |
| Biochemical oxygen demand (BOD) | 0.6 - 1.12 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.42 g O ₂ /g substance |
| ThOD | 1.5 g O ₂ /g substance |
| BOD (% of ThOD) | 0.8 % ThOD |

12.3. Bioaccumulative potential

Ethanol (64-17-5)

| | |
|---------------------------|--|
| Log Pow | -0.31 (Experimental value) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

Isopropyl Alcohol (2-Propanol) (67-63-0)

| | |
|---------------------------|--|
| Log Pow | 0.05 (Experimental value) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

Water (7732-18-5)

| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

Methanol (67-56-1)

| | |
|---------------------------|--|
| BCF fish 1 | < 10 (Leuciscus idus) |
| Log Pow | -0.77 (Experimental value; Other, Experimental value; Other) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

12.4. Mobility in soil

Ethanol (64-17-5)

| | |
|-----------------|-------------------|
| Surface tension | 0.022 N/m (20 °C) |
|-----------------|-------------------|

Isopropyl Alcohol (2-Propanol) (67-63-0)

| | |
|-----------------|-------------------|
| Surface tension | 0.021 N/m (25 °C) |
|-----------------|-------------------|

Methanol (67-56-1)

| | |
|-----------------|-------------------|
| Surface tension | 0.023 N/m (20 °C) |
|-----------------|-------------------|

12.5. Other adverse effects

Other information : Avoid release to the environment.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into surface water. May be discharged to wastewater treatment installation.
- Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.
- Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

- In accordance with DOT
- Transport document description : UN1987 Alcohols, n.o.s. (Ethanol, methanol), 3, III
- UN-No.(DOT) : 1987
- DOT NA no. : UN1987
- DOT Proper Shipping Name : Alcohols, n.o.s.
Ethanol, methanol
- Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
- Hazard labels (DOT) : 3 - Flammable liquid



- Packing group (DOT) : III - Minor Danger
- DOT Special Provisions (49 CFR 172.102) : 172 - This entry includes alcohol mixtures containing up to 5% petroleum products.
B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 4b;150
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
- DOT Packaging Bulk (49 CFR 173.xxx) : 242
- DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
- DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L
- DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

- Other information : No supplementary information available.
- State during transport (ADR-RID) : as liquid.

Ethyl Alcohol, 90% v/v

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ADR

| | |
|---|--|
| Transport document description | : UN 1170 ethanol (ethyl alcohol), 3, III, (D/E) |
| Packing group (ADR) | : III |
| Class (ADR) | : 3 - Flammable liquids |
| Hazard identification number (Kemler No.) | : 33 |
| Classification code (ADR) | : F1 |
| Danger labels (ADR) | : 3 - Flammable liquids |



| | |
|---------------|---|
| Orange plates | : |
|---------------|---|

| | |
|-------------------------|-------|
| Tunnel restriction code | : D/E |
|-------------------------|-------|

Transport by sea

| | |
|---------------|-------------------------|
| UN-No. (IMDG) | : 1170 |
| Class (IMDG) | : 3 - Flammable liquids |
| EmS-No. (1) | : F-E |
| EmS-No. (2) | : S-D |

Air transport

| | |
|----------------------|-------------------------|
| UN-No.(IATA) | : 1170 |
| Class (IATA) | : 3 - Flammable Liquids |
| Packing group (IATA) | : II - Medium Danger |

SECTION 15: Regulatory information

15.1. US Federal regulations

Ethyl Alcohol, 90% v/v

| | |
|-------------------------------------|-------------|
| SARA Section 311/312 Hazard Classes | Fire hazard |
|-------------------------------------|-------------|

Ethanol (64-17-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Isopropyl Alcohol (2-Propanol) (67-63-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :

5000 lb

SARA Section 311/312 Hazard Classes

Immediate (acute) health hazard
Fire hazard

15.2. International regulations

CANADA

Ethyl Alcohol, 90% v/v

| | |
|----------------------|---|
| WHMIS Classification | Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects |
|----------------------|---|

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Isopropyl Alcohol (2-Propanol) (67-63-0)

WHMIS Classification

Class B Division 2 - Flammable Liquid
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

Methanol (67-56-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Class B Division 2 - Flammable Liquid
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

No additional information available

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

Classification according to Directive 67/548/EEC or 1999/45/EC

F; R11

Full text of R-phrases: see section 16

15.2.2. National regulations

Ethanol (64-17-5)

Listed on IARC (International Agency for Research on Cancer)

Water (7732-18-5)

Not listed on the Canadian Ingredient Disclosure List

Methanol (67-56-1)

Listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

Methanol (67-56-1)

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
|---|---|---|---|-----------------------------------|
| | Yes | | | |

SECTION 16: Other information

Indication of changes

: Revision - See : *.

Other information

: None.

Full text of H-phrases: see section 16:

| | |
|---------------------------|--|
| Acute Tox. 3 (Dermal) | Acute toxicity (dermal), Category 3 |
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Carc. 1A | Carcinogenicity, Category 1A |
| Eye Irrit. 2A | Serious eye damage/eye irritation, Category 2A |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Repr. 2 | Reproductive toxicity, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |

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| | |
|-----------|--|
| STOT SE 1 | Specific target organ toxicity — single exposure, Category 1 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| H225 | Highly flammable liquid and vapour |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H311 | Toxic in contact with skin |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H336 | May cause drowsiness or dizziness |
| H350 | May cause cancer |
| H361 | Suspected of damaging fertility or the unborn child |
| H370 | Causes damage to organs |

NFPA health hazard

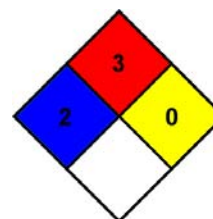
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 3 Serious Hazard

Physical

: 1 Slight Hazard

Personal Protection

: D

SDS US ValTech

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