

Application Fluid (Summer Solution)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
SDS Ref.: Periodic review of SDS 12/13/2022
Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

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

1.1. Product identifier

Product form : Mixture
Product name : Application Fluid (Summer Solution)
Product code : AFS
Type of product : Preparation based on solvents and surfactants
Product group : Blend

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only
Use of the substance/mixture : Air bubble free positioning of signs and graphics

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Signgeer Limited
Valhalla Business Park, Dobles Lane,
Holsworthy, Devon, EX22 6HN- UK
T 0044 1392 759787
hello@signgeer.com – www.signgeer.com

1.4. Emergency telephone number

Emergency number : 0044 1392 759787
Emergency Action : In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 3 H226
Serious eye damage/eye irritation, Category 2 H319

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.
H319 - Causes serious eye irritation.

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Precautionary statements (CLP) : 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 equipment.
P264 - Wash hands thoroughly after handling.
P280 - Wear eye protection, protective gloves.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin 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.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use carbon dioxide (CO₂), alcohol resistant foam, dry extinguishing powder to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|--|-------|---|
| ethanol; ethyl alcohol | (CAS-No.) 64-17-5 (EC-No.) 200-578-6 (EC Index-No.) 603-002-00-5 | >= 30 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 |
| methanol | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44-XXXX | 1 - 3 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:dust,mist), H331 STOT SE 1, H370 |
| Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., sodium salts | (CAS-No.) 127184-52-5 (EC-No.) 603-187-2 | < 0.1 | Acute Tox. 4 (Oral), H302 |
| alcohols, C12-14, ethoxylated (1-2.5 EO), sulphates, sodium salts <10% | (CAS-No.) 68891-38-3 (EC-No.) 500-234-8 (REACH-no) 01-2119488639-16 | < 0.1 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412 |
| Amides, C8-18 (even-numbered) and C18 (unsatd.), N,N-bis(hydroxyethyl) | (CAS-No.) 68155-07-7 (EC-No.) 931-329-6 (REACH-no) 01-2119490100-53-XXXX | < 0.1 | Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 |
| glycerol | (CAS-No.) 56-81-5 (EC-No.) 200-289-5 (REACH-no) 01-2119471987-18 | < 0.1 | Not classified |
| 2,2'-iminodiethanol; diethanolamine | (CAS-No.) 111-42-2 (EC-No.) 203-868-0 (EC Index-No.) 603-071-00-1 (REACH-no) 01-2119488930-28 | < 0.1 | Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Chronic 3, H412 |
| formaldehyde ...% (Note B)(Note D) | (CAS-No.) 50-00-0 (EC-No.) 200-001-8 (EC Index-No.) 605-001-00-5 (REACH-no) 01-2119488953-20-XXXX | < 0.1 | Carc. 1B, H350 Muta. 2, H341 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Skin Sens. 1, H317 |
| Citrella | | < 0.1 | Not classified |
| green dye | | < 0.1 | Not classified |
| Fluoresciene dye | | < 0.1 | Not classified |

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| Specific concentration limits: | | |
|--------------------------------|--|---|
| Name | Product identifier | Specific concentration limits |
| methanol | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44-XXXX | (3 =<C < 10) STOT SE 2, H371 (10 =<C < 100) STOT SE 1, H370 |
| formaldehyde ...% | (CAS-No.) 50-00-0 (EC-No.) 200-001-8 (EC Index-No.) 605-001-00-5 (REACH-no) 01-2119488953-20-XXXX | (0.2 =<C < 100) Skin Sens. 1, H317 (5 =<C < 100) STOT SE 3, H335 (5 =<C < 25) Eye Irrit. 2, H319 (5 =<C < 25) Skin Irrit. 2, H315 (25 =<C < 100) Skin Corr. 1B, H314 |

Note B : Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

Note D : Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest. |
| 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. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell. |

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

| | |
|------------------------------------|---|
| Symptoms/effects | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/effects after eye contact | : Eye irritation. |
| Symptoms/effects after ingestion | : This material contains methanol, which, when ingested, has cards acidosis, ocular toxicity ranging from diminished visual capacity to complete blindness, and death. Can enter the body by ingestion or inhalation or through the skin. |
| Chronic symptoms | : This material or its emissions may cause damage to kidney and liver and/or aggravate existing disorders. |

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 | : Sand. Alcohol resistant foam. Water spray. Dry powder. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|--|
| Fire hazard | : Flammable liquid and vapour. |
| Explosion hazard | : May form flammable/explosive vapour-air mixture. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent firefighting water from entering the environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |

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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 open flames. No smoking. |
| 6.1.1. For non-emergency personnel | |
| Emergency procedures | : Ventilate spillage area. Evacuate unnecessary personnel. 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. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection". |
| Emergency procedures | : Ventilate area. |

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|--|
| For containment | : In case of fire: Stop leak if safe to do so. |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. 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

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-----------------------------------|--|
| Additional hazards when processed | : Handle empty containers with care because residual vapours are flammable. |
| Precautions for safe handling | : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. 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 | : Proper grounding procedures to avoid static electricity should be followed. Use explosionproof electrical equipment. Ground/bond container and receiving equipment. |
| Storage conditions | : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight. Keep in fireproof place. Keep container tightly closed. |
| Incompatible products | : Strong bases. Strong acids. Strong oxidizing agents. |
| Incompatible materials | : Sources of ignition. Direct sunlight. Heat sources. |
| Storage temperature | : $\geq 5^{\circ}\text{C}$ |
| Information on mixed storage | : Do not store near oxidizing agents or acidic material. |

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| ethanol; ethyl alcohol (64-17-5) | |
|--|---|
| United Kingdom - Occupational Exposure Limits | |
| Local name | Ethanol |
| WEL TWA (mg/m ³) | 1920 mg/m ³ |
| WEL TWA (ppm) | 1000 ppm |
| Regulatory reference | EH40/2005 (Third edition, 2018). HSE |
| methanol (67-56-1) | |
| EU - Occupational Exposure Limits | |
| Local name | Methanol |
| IOELV TWA (mg/m ³) | 260 mg/m ³ |
| IOELV TWA (ppm) | 200 ppm |
| Notes | Skin |
| Regulatory reference | COMMISSION DIRECTIVE 2006/15/EC |
| United Kingdom - Occupational Exposure Limits | |
| Local name | Methanol |
| WEL TWA (mg/m ³) | 266 mg/m ³ |
| WEL TWA (ppm) | 200 ppm |
| WEL STEL (mg/m ³) | 333 mg/m ³ |
| WEL STEL (ppm) | 250 ppm |
| Remark (WEL) | Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity) |
| Regulatory reference | EH40/2005 (Third edition, 2018). HSE |
| formaldehyde ...% (50-00-0) | |
| EU - Occupational Exposure Limits | |
| Local name | Formaldehyde |
| IOELV TWA (mg/m ³) | 0.37 mg/m ³ |
| IOELV TWA (ppm) | 0.3 ppm |
| IOELV STEL (mg/m ³) | 0.74 mg/m ³ |
| IOELV STEL (ppm) | 0.6 ppm |
| Notes | Dermal sensitisation |
| Regulatory reference | DIRECTIVE (EU) 2019/983 (amending Directive 2004/37/EC) |
| United Kingdom - Occupational Exposure Limits | |
| Local name | Formaldehyde |
| WEL TWA (mg/m ³) | 2.5 mg/m ³ |
| WEL TWA (ppm) | 2 ppm |
| WEL STEL (mg/m ³) | 2.5 mg/m ³ |
| WEL STEL (ppm) | 2 ppm |
| Regulatory reference | EH40/2005 (Third edition, 2018). HSE |
| glycerol (56-81-5) | |
| United Kingdom - Occupational Exposure Limits | |
| Local name | Glycerol |
| WEL TWA (mg/m ³) | 10 mg/m ³ mist |
| Regulatory reference | EH40/2005 (Third edition, 2018). HSE |

8.2. Exposure controls

| | |
|---|---|
| Appropriate engineering controls: | Ensure good ventilation of the work station. |
| Personal protective equipment: | Avoid all unnecessary exposure. Gloves. Protective goggles. |
| Materials for protective clothing: | Wear suitable working clothes |
| Hand protection: | Wear protective gloves |
| Eye protection: | Chemical goggles or safety glasses |
| Skin and body protection: | Wear suitable protective clothing |
| Respiratory protection: | Where appropriate |

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Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4



Environmental exposure controls:
Other information:

Avoid release to the environment.
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 |
| Colour | : Clear |
| Odour | : Alcohol odour |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : ~ 25 °C |
| Auto ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Highly flammable liquid and vapour |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 0.93 g/cm ³ |
| Solubility | : soluble in water. |
| Log Pow | : 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 | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

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

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SDS Ref.: Periodic review of SDS 12/13/2022
Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral, dermal, inhalation) : Not classified

| ethanol; ethyl alcohol (64-17-5) | |
|---|---------------------------|
| LD50 oral rat | 10470 mg/kg |
| LD50 oral | 3450 mg/kg (Mouse) |
| LD50 dermal rat | 15800 mg/kg |
| LC50 inhalation rat (Vapours - mg/l/4h) | 124.7 mg/l/4h |
| methanol (67-56-1) | |
| LD50 oral | 300 mg/kg |
| LD50 dermal | 300 mg/kg |
| LC50 inhalation rat (Vapours - mg/l/4h) | 128.2 mg/l/4h |
| 2,2'-iminodiethanol; diethanolamine (111-42-2) | |
| LD50 oral rat | 1820 mg/kg bodyweight |
| Amides, C8-18(even-numbered) and C18(unsatd.), N,N-bis(hydroxyethyl) (68155-07-7) | |
| LD50 oral rat | > 2000 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |
| formaldehyde ...% (50-00-0) | |
| LD50 oral | 640 mg/kg bodyweight |
| LD50 dermal rabbit | 270 mg/kg |
| LC50 inhalation rat (ppm) | < 463 ppm/4h |
| alcohols, C12-14, ethoxylated (1-2.5 EO), sulphates, sodium salts <10% (68891-38-3) | |
| LD50 oral rat | 4100 mg/kg bodyweight |
| LD50 dermal rabbit | > 2000 mg/kg bodyweight |
| glycerol (56-81-5) | |
| LD50 oral rat | 12600 mg/kg |
| LD50 dermal | 45 ml/kg (In guinea pigs) |

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

| formaldehyde ...% (50-00-0) | |
|------------------------------------|--|
| IARC group | 1 - Carcinogenic to humans |
| Reproductive toxicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT (single exposure) | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT (repeated exposure) | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |

| methanol (67-56-1) | |
|-------------------------------|------------------------|
| LOAEL, subacute, oral, monkey | 2340 mg/kg bw (3 days) |

Aspiration hazard : Not classified
 Additional information : Based on available data, the classification criteria are not met
 Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met

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SDS Ref.: Periodic review of SDS 12/13/2022
Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

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; ethyl alcohol (64-17-5) | |
|---|---|
| LC50 fish 1 | 13000 mg/l <i>Oncorhynchus mykiss</i> (Rainbow trout) |
| LC50 fish 2 | 14200 mg/l <i>Pimephales promelas</i> (Fat-head Minnow) |
| EC50 Daphnia 1 | 12340 mg/l |
| EC50 72h algae (1) | 275 mg/l <i>Chlorella vulgaris</i> |
| NOEC chronic crustacea | 9.6 mg/l <i>Daphnia magna</i> |
| EC50, algae, <i>Selenastrum capricornutum</i> | > 100 mg/l (48 Hours) |
| methanol (67-56-1) | |
| LC50 fish 1 | 15400 mg/l <i>Lepomis macrochirus</i> (Bluegill) |
| LC50 fish 2 | > 100 mg/l <i>Pimephales promelas</i> (Fat-head Minnow) |
| EC50 Daphnia 1 | > 10000 mg/l |
| EC50 other aquatic organisms 1 | 2500 mg/l <i>Crangon Crangon</i> (Common sand shrimp) |
| EC50 96h algae (1) | 22000 mg/l <i>Selenastrum capricornutum</i> |
| EC50 96h algae (2) | 16.912 mg/l Marinewater algae <i>Ulva pertusa</i> |
| NOEC chronic fish | 15800 mg/l <i>Oryzias latipes</i> (Red killifish) |
| IC50, microorganisms, acute | 20000 mg/l (15 Hours) |
| IC50, microorganisms, acute | > 1000 mg/l (3 Hours) |
| 2,2'-iminodiethanol; diethanolamine (111-42-2) | |
| LC50 fish 1 | 460 - 5000 mg/l |
| EC50 Daphnia 1 | 55 mg/l |
| ErC50 (algae) | 9.5 mg/l |
| NOEC chronic crustacea | 0.78 mg/l |
| Amides, C8-18 (even-numbered) and C18 (unsatd.), N,N-bis(hydroxyethyl) (68155-07-7) | |
| LC50 fish 1 | 2.4 mg/l Rainbow trout (<i>Oncorhynchus mykiss</i>) |
| LC50 fish 2 | 4.9 mg/l Zebrafish (<i>Danio rerio</i>) |
| EC50 Daphnia 1 | 3.2 mg/l |
| EC50 72h algae (1) | 18.6 mg/l |
| NOEC chronic fish | 0.32 mg/l |
| NOEC chronic crustacea | 0.07 mg/l |
| formaldehyde ...% (50-00-0) | |
| LC50 fish 1 | 40 mg/l Rainbow trout (<i>Oncorhynchus mykiss</i>) |
| EC50 Daphnia 1 | 18.2 mg/l |
| EC50 72h algae (1) | 3.48 mg/l |
| alcohols, C12-14, ethoxylated (1-2.5 EO), sulphates, sodium salts <10% (68891-38-3) | |
| LC50 fish 1 | 7.1 mg/l Zebrafish (<i>Danio rerio</i>) |
| EC50 Daphnia 1 | 7.2 mg/l |
| EC50 72h algae (1) | 27 mg/l |
| NOEC chronic algae | 0.93 mg/l |
| glycerol (56-81-5) | |
| LC50 fish 1 | 54000 mg/l Rainbow trout (<i>Oncorhynchus mykiss</i>) |
| EC50 Daphnia 1 | 1955 mg/l |
| EC50 72h algae (1) | > 2900 mg/l |
| EC50, microorganisms, acute, activated sludge | > 1000 mg/l |

12.2. Persistence and degradability

| Application Fluid (Summer Solution) | |
|--|------------------|
| Persistence and degradability | Not established. |
| ethanol; ethyl alcohol (64-17-5) | |

Application Fluid (Summer Solution)

Safety Data Sheet

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| | |
|---|---|
| Persistence and degradability | Readily biodegradable. |
| Biochemical oxygen demand (BOD) | 0.8 - 0.967 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.7 g O ₂ /g substance |
| ThOD | 2.1 g O ₂ /g substance |
| BOD (% of ThOD) | 37.74 % ThOD |
| Biodegradation | 84 % 20 days |
| methanol (67-56-1) | |
| Persistence and degradability | Readily biodegradable. |
| 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 |
| Biodegradation | 95 % 20 days |
| 2,2'-iminodiethanol; diethanolamine (111-42-2) | |
| Persistence and degradability | Readily biodegradable. |
| Amides, C8-18(even-numbered) and C18(unsatd.), N,N-bis(hydroxyethyl) (68155-07-7) | |
| Persistence and degradability | Readily biodegradable. |
| Biodegradation | 92.5 % (28 days) |
| green dye | |
| Persistence and degradability | Not established. |
| formaldehyde ...% (50-00-0) | |
| Persistence and degradability | Readily biodegradable. |
| alcohols, C12-14, ethoxylated (1-2.5 EO), sulphates, sodium salts <10% (68891-38-3) | |
| Persistence and degradability | Readily biodegradable. |
| glycerol (56-81-5) | |
| Persistence and degradability | Readily biodegradable. |

12.3. Bioaccumulative potential

| | |
|---|--|
| Application Fluid (Summer Solution) | |
| Bioaccumulative potential | Not established. |
| ethanol; ethyl alcohol (64-17-5) | |
| Log Pow | -0.32 |
| Bioaccumulative potential | Low. |
| methanol (67-56-1) | |
| BCF fish 1 | < 10 Leuciscus idus (Golden orfe) |
| Log Pow | -0.74 |
| Log Kow | -0.82 - -0.64 |
| Bioaccumulative potential | Low. Not expected to bioaccumulate due to the low log Kow (log Kow < 4). |
| 2,2'-iminodiethanol; diethanolamine (111-42-2) | |
| Bioaccumulative potential | Not established. |
| Amides, C8-18(even-numbered) and C18(unsatd.), N,N-bis(hydroxyethyl) (68155-07-7) | |
| Log Pow | 3.75 |
| Bioaccumulative potential | Not established. |
| green dye | |
| Bioaccumulative potential | Not established. |
| formaldehyde ...% (50-00-0) | |
| Log Pow | 0.35 |
| Bioaccumulative potential | No bioaccumulation. |
| alcohols, C12-14, ethoxylated (1-2.5 EO), sulphates, sodium salts <10% (68891-38-3) | |
| Bioaccumulative potential | Bioaccumulation unlikely. |
| glycerol (56-81-5) | |
| Log Kow | -1.75 |
| Bioaccumulative potential | Not established. |

Application Fluid (Summer Solution)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 SDS Ref.: Periodic review of SDS 12/13/2022
 Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

12.4. Mobility in soil

| Application Fluid (Summer Solution) | |
|-------------------------------------|--|
| Ecology - soil | Mobile. |
| ethanol; ethyl alcohol (64-17-5) | |
| Surface tension | 24.5 mN/m |
| Ecology - soil | Product evaporates when in contact with the air. |
| methanol (67-56-1) | |
| Ecology - soil | Product adsorbs onto the soil. |

12.5. Results of PBT and vPvB assessment

| Component | |
|----------------------------------|---|
| ethanol; ethyl alcohol (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 |
| methanol (67-56-1) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Additional information : Handle empty containers with care because residual vapours are flammable. Flammable vapours may accumulate in the container.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

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

14.1. UN number

| | |
|---------------|--------|
| UN-No. (ADR) | : 1170 |
| UN-No. (IMDG) | : 1170 |
| UN-No.(IATA) | : 1170 |
| UN-No.(ADN) | : 1170 |
| UN-No. (RID) | : 1170 |

14.2. UN proper shipping name

| | |
|---------------------------------------|--|
| Proper Shipping Name (ADR) | : Not applicable |
| Proper Shipping Name (IMDG) | : ETHANOL (ETHYL ALCOHOL) |
| Proper Shipping Name (IATA) | : Ethanol solution |
| Proper Shipping Name (ADN) | : ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| Proper Shipping Name (RID) | : ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| Transport document description (ADR) | : Not applicable |
| Transport document description (IMDG) | : UN 1170 ETHANOL (ETHYL ALCOHOL), 3, III |
| Transport document description (IATA) | : UN 1170 Ethanol solution, 3, III |
| Transport document description (ADN) | : UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3,III |
| Transport document description (RID) | : UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3,III |

Application Fluid (Summer Solution)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
SDS Ref.: Periodic review of SDS 12/13/2022
Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable



IMDG

Transport hazard class(es) (IMDG) : 3



IATA

Transport hazard class(es) (IATA) : 3



ADN

Transport hazard class(es) (ADN) : 3



RID

Transport hazard class(es) (RID) : 3



14.4. Packing group

Packing group (ADR) : Not applicable
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards

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

14.6. Special precautions for user

- Overland transport
Not applicable.

- Transport by sea

Special provisions (IMDG) : 144, 223
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T2
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : A
Properties and observations (IMDG) : Colourless, volatile liquids. Pure ETHANOL: flashpoint 13°C c.c. Explosive limits: 3.3% to 19% Miscible with water

Application Fluid (Summer Solution)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 SDS Ref.: Periodic review of SDS 12/13/2022
 Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

- Air transport

| | |
|--|-----------------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y344 |
| PCA limited quantity max net quantity (IATA) | : 10L |
| PCA packing instructions (IATA) | : 355 |
| PCA max net quantity (IATA) | : 60L |
| CAO packing instructions (IATA) | : 366 |
| CAO max net quantity (IATA) | : 220L |
| Special provisions (IATA) | : A3, A58, A180 |
| ERG code (IATA) | : 3L |

- Inland waterway transport

| | |
|-----------------------------------|-------------|
| Classification code (ADN) | : F1 |
| Special provisions (ADN) | : 144, 601 |
| Limited quantities (ADN) | : 5 L |
| Excepted quantities (ADN) | : E1 |
| Carriage permitted (ADN) | : T |
| Equipment required (ADN) | : PP, EX, A |
| Ventilation (ADN) | : VE01 |
| Number of blue cones/lights (ADN) | : 0 |

- Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : F1 |
| Special provisions (RID) | : 144, 601 |
| Limited quantities (RID) | : 5L |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID) | : MP19 |
| Portable tank and bulk container instructions (RID) | : T2 |
| Portable tank and bulk container special provisions (RID) | : TP1 |
| Tank codes for RID tanks (RID) | : LGBF |
| Transport category (RID) | : 3 |
| Special provisions for carriage – Packages (RID) | : W12 |
| Colis express (express parcels) (RID) | : CE4 |
| Hazard identification number (RID) | : 30 |

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
 Contains no substance on the REACH candidate list
 Contains no REACH Annex XIV substances
 Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.
 Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

Application Fluid (Summer Solution)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
SDS Ref.: Periodic review of SDS 12/13/2022
Date of issue: 4/7/2014 Revision date: 12/13/2019 Supersedes: 11/21/2016 Version: 1.4

SECTION 16: Other information

Abbreviations and acronyms:

| | |
|-------|---|
| 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 |
| BCF | Bioconcentration factor |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| EC50 | Median effective concentration |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOEC | No-Observed Effect Concentration |
| PBT | Persistent Bioaccumulative Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| vPvB | Very Persistent and Very Bioaccumulative |

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H- and EUH-statements:

| | |
|-------------------------------------|--|
| Acute Tox. 3 (Dermal) | Acute toxicity (dermal), Category 3 |
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3 |
| Acute Tox. 3 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Chronic 2 | Hazardous to the aquatic environment — Chronic Hazard, Category 2 |
| Aquatic Chronic 3 | Hazardous to the aquatic environment — Chronic Hazard, Category 3 |
| Carc. 1B | Carcinogenicity, Category 1B |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Muta. 2 | Germ cell mutagenicity, Category 2 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| Skin Sens. 1 | Skin sensitisation, Category 1 |
| STOT RE 2 | Specific target organ toxicity — Repeated exposure, Category 2 |
| STOT SE 1 | Specific target organ toxicity — Single exposure, Category 1 |
| STOT SE 2 | Specific target organ toxicity — Single exposure, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H370 | Causes damage to organs. |
| H371 | May cause damage to organs. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

SDS EU (REACH Annex II)

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