

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

1.1. Product identifier

Product form : Mixture
Product name : CircoGreen AFM

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Use of the substance/mixture : Disinfectant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

GEA Farm Technologies GmbH
Siemensstraße 25-27
59199 Bönen - Germany
T + 49 (0) 23839370

E-mail address of competent person responsible for the SDS: sds@gbk-ingelheim.de

Distributor

GEA Farm Technologies (UK) Ltd.
Wylle Works, Watery Lane, Bishopstrow,
Warminster, Wiltshire BA12 9HT - United Kingdom
T + 44 (0)1985 216444

1.4. Emergency telephone number

Emergency number : 24 Hour Emergency Telephone No. for advice on chemical emergencies, spillages, fires or
First Aid: +44 (0) 870 1906777 (GEA Farm Technologies)
NATIONAL: In England and Wales: 111, In Scotland: 111
INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Corrosive to metals, Category 1 H290
Skin corrosion/irritation, Category 1A H314
Serious eye damage/eye irritation, Category 1 H318
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May be corrosive to metals. Causes severe skin burns and eye damage.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

Signal word (CLP) :

Danger

Hazardous ingredients

: Sodium hydroxide; 2-Ethylhexanol ethoxylate; Hexyl D-glucoside; Sodium N-(2-carboxyethyl)-N-(2-ethylhexyl)-.beta.-alaninate

Hazard statements (CLP)

: H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP)

: P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P406 - Store in a corrosion-resistant container with a resistant inner liner.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

PBT : Not applicable.
vPvB : Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments : Aqueous solution

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|---|------|---|
| Sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 (REACH-no) 01-2119457892-27 | < 10 | Met. Corr. 1, H290 Skin Corr. 1A, H314 |
| 2-Ethylhexanol ethoxylate | (CAS-No.) 26468-86-0 (EC-No.) 607-943-2 | < 5 | Eye Dam. 1, H318 |
| Hexyl D-glucoside | (CAS-No.) 54549-24-5 (EC-No.) 259-217-6 (REACH-no) 01-2119492545-29 | < 5 | Eye Dam. 1, H318 |
| didecyltrimethylammonium chloride | (CAS-No.) 7173-51-5 (EC-No.) 230-525-2 (EC Index-No.) 612-131-00-6 (REACH-no) 01-2119945987-15 | < 5 | Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411 |
| Propan-2-ol substance with national workplace exposure limit(s) (GB) | (CAS-No.) 67-63-0 (EC-No.) 200-661-7 (REACH-no) 01-2119457558-25 | < 1 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 |

Specific concentration limits:

| Name | Product identifier | Specific concentration limits |
|------------------|---|--|
| Sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 (REACH-no) 01-2119457892-27 | (0.5 =<C < 2) Eye Irrit. 2, H319 (0.5 =<C < 2) Skin Irrit. 2, H315 (2 =<C < 5) Skin Corr. 1B, H314 (C >= 5) Skin Corr. 1A, H314 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Remove and wash contaminated clothing before re-use. Call a physician immediately. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor. |
| First-aid measures after skin contact | : Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately. |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. |
| First-aid measures after ingestion | : Rinse mouth. Do not induce vomiting. Call a physician immediately. Drink plenty of water or milk. |

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

| | |
|-------------------------------------|---------------------------|
| Symptoms/effects after skin contact | : Burns. |
| Symptoms/effects after eye contact | : Serious damage to eyes. |
| Symptoms/effects after ingestion | : Burns. |

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 | : Product does not burn, fire-extinguishing activities according to surrounding. |
| Unsuitable extinguishing media | : high volume water jet. |

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released. Chlorine compounds.

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |
| Other information | : Cool containers at risk with water spray jet. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

| | |
|----------------------|--|
| Emergency procedures | : Ventilate spillage area. Ensure adequate air ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe dust/fume/gas/mist/vapours/spray. |
|----------------------|--|

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.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|---|
| For containment | : Collect spillage. |
| Methods for cleaning up | : Take up liquid spill into absorbent material. |
| 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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-------------------------------|---|
| Precautions for safe handling | : Ensure good ventilation of the work station. Do not breathe Do not breathe vapour/aerosol. Avoid contact with skin and eyes. Wear personal protective equipment. Keep container tightly closed. |
| Hygiene measures | : Wash contaminated clothing before reuse. 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

| | |
|------------------------------|---|
| Storage conditions | : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep cool. |
| Incompatible materials | : Bases. Metals. |
| Information on mixed storage | : Keep away from food, drink and animal feeding stuffs. |
| Storage area | : Incompatible with strong acids and oxidizing agents. |

7.3. Specific end use(s)

Disinfectant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Sodium hydroxide (1310-73-2) | | |
|------------------------------|-------------------------------|---------------------|
| United Kingdom | Local name | Sodium hydroxide |
| United Kingdom | WEL STEL (mg/m ³) | 2 mg/m ³ |
| United Kingdom | Regulatory reference | EH40. HSE |

| Propan-2-ol (67-63-0) | | |
|-----------------------|-------------------------------|------------------------|
| United Kingdom | Local name | Propan-2-ol |
| United Kingdom | WEL TWA (mg/m ³) | 999 mg/m ³ |
| United Kingdom | WEL TWA (ppm) | 400 ppm |
| United Kingdom | WEL STEL (mg/m ³) | 1250 mg/m ³ |
| United Kingdom | WEL STEL (ppm) | 500 ppm |
| United Kingdom | Regulatory reference | EH40. HSE |

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
|--|----------------|-------------------|----------------|-------------|----------|
| Chemically resistant protective gloves | Nitrile rubber | 6 (> 480 minutes) | 0,7 | 2 (< 1.5) | EN 374 |

Eye protection:

Eye wash bottle with pure water (EN 15154). Safety glasses

| Type | Use | Characteristics | Standard |
|----------------|---------------------------|-------------------|----------|
| Safety goggles | Liquid splashes may occur | With side shields | EN 166 |

Skin and body protection:

Wear suitable protective clothing

| Type | Standard |
|----------------------------------|----------|
| Long sleeved protective clothing | EN 368 |

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. No personal breathing protective equipment is normally required

Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not breathe gas/vapour/aerosol.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|------------------------------|
| Physical state | : Liquid |
| Colour | : orange. Yellow-brown |
| Odour | : characteristic |
| Odour threshold | : No data available |
| pH | : > 13 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : Not applicable |
| Auto-ignition temperature | : Not applicable |
| Decomposition temperature | : Not applicable |
| Flammability (solid, gas) | : Not applicable |
| | : Not applicable |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 1.1 - 1.13 g/cm³ |
| Solubility | : Water: completely miscible |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |

Explosive properties : Not applicable.
Oxidising properties : Product is not explosive.
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas. Exothermic reaction on contact with : Strong acids.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Acids.

10.6. Hazardous decomposition products

By contact with acids poisonous chloric gases can be released under heat development.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Propan-2-ol (67-63-0)

| | |
|---|-------------|
| LD50 oral rat | 5840 mg/kg |
| LD50 dermal rabbit | 13900 mg/kg |
| LC50 inhalation rat (mg/l) | 4750 mg/kg |
| LC50 inhalation rat (Vapours - mg/l/4h) | 30 mg/l/4h |

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: > 13
Serious eye damage/irritation : Causes serious eye damage.
pH: > 13
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Propan-2-ol (67-63-0)

| | |
|------------|----------------------|
| IARC group | 3 - Not classifiable |
|------------|----------------------|

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Propan-2-ol (67-63-0)

| | |
|----------------|------------|
| LC50 fish 1 | 9640 mg/l |
| EC50 Daphnia 1 | 13299 mg/l |

| | |
|------------------------------|------------|
| ErC50 (other aquatic plants) | > 100 mg/l |
|------------------------------|------------|

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Hexyl D-glucoside (54549-24-5)

| | |
|---------|-------------|
| Log Pow | 1.72 - 1.77 |
|---------|-------------|

Propan-2-ol (67-63-0)

| | |
|---------|------|
| Log Pow | 0.05 |
|---------|------|

12.4. Mobility in soil

Propan-2-ol (67-63-0)

| | |
|---------|-----|
| Log Koc | 1.1 |
|---------|-----|

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available






SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--|--|
| Waste treatment methods | : Disposal in accordance with local regulations. Should not be disposed of with household waste. Dispose of contents/container in accordance with licensed collector's sorting instructions. |
| Sewage disposal recommendations | : Do not discharge into drains. |
| Product/Packaging disposal recommendations | : Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. |
| Additional information | : Recommended cleaning agent: Water with detergents. |
| Ecology - waste materials | : Avoid release to the environment. |
| European List of Waste (LoW) code | : 02 01 08* - agrochemical waste containing dangerous substances |

SECTION 14: Transport information

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

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| 14.1. UN number | | | | |
| 1824 | 1824 | 1824 | 1824 | 1824 |
| 14.2. UN proper shipping name | | | | |
| SODIUM HYDROXIDE SOLUTION | SODIUM HYDROXIDE SOLUTION | Sodium hydroxide solution | SODIUM HYDROXIDE SOLUTION | SODIUM HYDROXIDE SOLUTION |
| Transport document description | | | | |
| UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II, (E) | UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II | UN 1824 Sodium hydroxide solution, 8, II | UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II | UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II |
| 14.3. Transport hazard class(es) | | | | |
| 8 | 8 | 8 | 8 | 8 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| II | II | II | II | II |

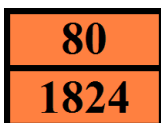
14.5. Environmental hazards

| | | | | |
|--|---|------------------------------------|------------------------------------|------------------------------------|
| 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) | : C5 |
| Limited quantities (ADR) | : 1I |
| Excepted quantities (ADR) | : E2 |
| Packing instructions (ADR) | : P001, IBC02 |
| Mixed packing provisions (ADR) | : MP15 |
| Transport category (ADR) | : 2 |
| Hazard identification number (Kemler No.) | : 80 |
| Orange plates | : |



| | |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : E |
| EAC code | : 2R |

Transport by sea

| | |
|------------------------------------|---|
| Packing instructions (IMDG) | : P001 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-B |
| Segregation (IMDG) | : SG35 |
| Properties and observations (IMDG) | : Colourless liquid. Colourless liquid. Reacts with ammonium salts, evolving ammonia gas. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids. |

Air transport

| | |
|--|--------|
| PCA Excepted quantities (IATA) | : E2 |
| PCA Limited quantities (IATA) | : Y840 |
| PCA limited quantity max net quantity (IATA) | : 0.5L |
| PCA packing instructions (IATA) | : 851 |
| PCA max net quantity (IATA) | : 1L |
| CAO packing instructions (IATA) | : 855 |
| CAO max net quantity (IATA) | : 30L |
| Special provisions (IATA) | : A3 |
| ERG code (IATA) | : 8L |

Inland waterway transport

| | |
|-----------------------------------|----------|
| Classification code (ADN) | : C5 |
| Limited quantities (ADN) | : 1 L |
| Excepted quantities (ADN) | : E2 |
| Carriage permitted (ADN) | : T |
| Equipment required (ADN) | : PP, EP |
| Number of blue cones/lights (ADN) | : 0 |

Rail transport

| | |
|------------------------------------|---------------|
| Classification code (RID) | : C5 |
| Limited quantities (RID) | : 1L |
| Excepted quantities (RID) | : E2 |
| Packing instructions (RID) | : P001, IBC02 |
| Transport category (RID) | : 2 |
| Hazard identification number (RID) | : 80 |

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

Seveso Additional information : Not subject to the Seveso III Directive

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

All chapters have been modified since the previous version.

Abbreviations and acronyms:

| | |
|--------------|---|
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| DOT | Department of Transport |
| TDG | Transportation of Dangerous Goods |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| GHS | Globally Harmonized System of Classification, Labelling and Packaging of Chemicals |
| IARC | International Agency for Research on Cancer |
| vPvB | Very Persistent and Very Bioaccumulative |
| PBT | Persistent Bioaccumulative Toxic |
| PNEC | Predicted No-Effect Concentration |
| CAS | CAS (Chemical Abstracts Service) number |
| IBC-Code | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| ATE | Acute Toxicity Estimate |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| BCF | Bioconcentration factor |
| MARPOL 73/78 | MARPOL 73/78: International Convention for the Prevention of Pollution From Ships |

Data sources : Raw material supplier's SDS. 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 : Data of sections 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. The delivery specifications are contained in the corresponding product sheet. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

Full text of H- and EUH-statements:

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 2 | Hazardous to the aquatic environment — Chronic Hazard, Category 2 |
| 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 |
| Met. Corr. 1 | Corrosive to metals, Category 1 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| H225 | Highly flammable liquid and vapour |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness |
| H400 | Very toxic to aquatic life. |
| H411 | Toxic to aquatic life with long lasting effects. |

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

| | | |
|---------------|------|-----------------|
| Met. Corr. 1 | H290 | Expert judgment |
| Skin Corr. 1A | H314 | Expert judgment |
| Eye Dam. 1 | H318 | Expert judgment |

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