










QuickGene-AutoS DNA FFPE Kit

AS-DF

Composition/Information on Ingredients

| Name of substance | Article number | Classification acc. to GHS | Pictograms | Page |
|-------------------|----------------|---|---|-----------|
| EDF(EDF-01) | kurabo076 | Resp. Sens. 1 / H334 Skin Sens. 1 / H317 |  | 2 – 15 |
| LDF(LDF-S1) | kurabo077 | Acute Tox. 4 / H302 Acute Tox. 4 / H332 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Aquatic Chronic 3 / H412 |   | 16 – 37 |
| MDF(MDF-01) | kurabo078 | Acute Tox. 4 / H332 Eye Irrit. 2 / H319 |  | 38 – 55 |
| WDF(WDF-S1) | kurabo079 | Flam. Liq. 3 / H226 Eye Irrit. 2 / H319 |   | 56 – 75 |
| CDF(CDF-S1) | kurabo080 | | | 76 – 86 |
| DDF (DDF-01) | kurabo081 | Asp. Tox. 1 / H304 Aquatic Chronic 4 / H413 |  | 87 – 100 |
| Ethanol | kurabo041 | Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 |   | 101 – 120 |

EDF(EDF-01)

AS-DF

Version number: 2.0
Replaces version of: 2023-01-04 (1)

Revision: 2023-01-04
First version: 2015-07-21

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

1.1 Product identifier

| | |
|-----------------------|---------------------------|
| Trade name | <u>EDF(EDF-01)</u> |
| Product number | AS-DF |
| CAS number | Not relevant (mixture) |

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

| | |
|---------------------------------|----------------------|
| Relevant identified uses | In vitro diagnostics |
|---------------------------------|----------------------|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
|---|--|

| | |
|----------------------------------|------------------------|
| e-mail (competent person) | sdb@csb-compliance.com |
|----------------------------------|------------------------|

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD.

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (acc. to GB CLP)

| Classification | | | | |
|----------------|---------------------------|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 3.4R | respiratory sensitisation | 1 | Resp. Sens. 1 | H334 |
| 3.4S | skin sensitisation | 1 | Skin Sens. 1 | H317 |

For full text of abbreviations: see SECTION 16

2.2 Label elements

EDF(EDF-01)

Labelling (acc. to GB CLP)

Signal word danger

Pictograms

GHS08



Hazard statements

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

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

Hazardous ingredients for labelling

Proteinase, Tritirachium album serine

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Endocrine disrupting properties

None of the ingredients are listed.



SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

| Hazardous ingredients | | | | |
|---------------------------------------|--|---------|--|---|
| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms |
| Proteinase, Tritirachium album serine | CAS No 39450-01-6 EC No 254-457-8 Index No 647-014-00-9 | 1 – < 5 | Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 STOT SE 3 / H335 |   |

For full text of H-phrases: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Cough, pain, choking, and breathing difficulties.

May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO₂), hydrogen chloride (HCl)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Avoid contact with skin and eyes.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Keep away from sources of ignition - No smoking.

Specific notes/details

None.

Handling of incompatible substances or mixtures

Do not mix with oxidiser

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.
Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, frost

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Occupational exposure limit values (Workplace Exposure Limits) | | | | | | | |
|--|---------------|---------|------------|--------------------------|---------------------------|----------|-----------|
| Country | Name of agent | CAS No | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Notation | Source |
| GB | glycerol | 56-81-5 | WEL | 10 | - | mist | EH40/2005 |

Notation

mist as mists

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)**Eye/face protection**

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves | |
|--------------------------|--|
| Material | |
| no information available | |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined (100 °C, CAS 7732-18-5) |
| Flammability | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit | not determined |
| Flash point | not determined (177 – 199 °C, CAS 56-81-5) |
| Auto-ignition temperature | not determined (390 °C, CAS 56-81-5) |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Dynamic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | not miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not determined |
| Vapour pressure | not determined (23 hPa, CAS 7732-18-5) |
| Density and/or relative density | |
| Density | not determined |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |

9.2 Other information

| | |
|---|--|
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
|---|--|

Other safety characteristics

Temperature class (EU, acc. to ATEX)

T2

(maximum permissible surface temperature on the equipment: 300°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure

If not otherwise specified the classification is based on:

Ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Test data are not available for the complete mixture.

Skin corrosion/irritation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

None of the ingredients are listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

12.2 Persistence and degradability

Biodegradation

No data available.

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|-------------|--|--------------|
| 14.1 | UN number | not assigned |
| 14.2 | UN proper shipping name | - |
| 14.3 | Transport hazard class(es) | - |
| 14.4 | Packing group | - |
| 14.5 | Environmental hazards | - |
| 14.6 | Special precautions for user | - |
| 14.7 | Maritime transport in bulk according to IMO instruments | - |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**Relevant provisions of the European Union (EU)****Seveso Directive**

Not assigned.

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

National regulations (GB)**List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list**

None of the ingredients are listed

Restrictions according to GB REACH, Annex 17

None of the ingredients are listed

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| EDF(EDF-01) | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |

Legend

R3

1. Shall not be used in:

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,

Legend

2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
- can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
5. Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
- (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil
- or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
- (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';
- (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information**Indication of changes (revised safety data sheet)**

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 1.1 | Registration number (REACH): Not relevant (mixture). | - |
| 1.3 | e-mail (competent person): sdb@csb-online.de Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. | e-mail (competent person): sdb@csb-compliance.com Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. |
| 3.2 | - | Hazardous ingredients: change in the listing (table) |

Abbreviations and acronyms

EDF(EDF-01)

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| GB CLP | The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended) |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| IMDG | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| Resp. Sens. | Respiratory sensitisation |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| STEL | Short-term exposure limit |
| STOT SE | Specific target organ toxicity - single exposure |
| TWA | Time-weighted average |
| vPvB | Very Persistent and very Bioaccumulative |

EDF(EDF-01)

| Abbr. | Descriptions of used abbreviations |
|-------|------------------------------------|
| WEL | Workplace exposure limit |

Key literature references and sources for data

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended).
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended).
GB mandatory classification and labelling.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |

Responsible for the safety data sheet

C.S.B. GmbH
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47829 Krefeld, Germany

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Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.

LDF(LDF-S1)

AS-DF

QuickGene-AutoS DNA FFPE Kit

Version number: 3.0
Replaces version of: 2020-10-29 (2)

Revision: 2023-05-31
First version: 2020-10-29

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

1.1 Product identifier

| | |
|-----------------------------|------------------------|
| Trade name | <u>LDF(LDF-S1)</u> |
| Product number | AS-DF |
| Registration number (REACH) | Not relevant (mixture) |
| CAS number | Not relevant (mixture) |

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

| | |
|--------------------------|--|
| Relevant identified uses | In vitro diagnostics |
| Uses advised against | Do not use for products which come into direct contact with the skin |

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
| e-mail (competent person) KURABO INDUSTRIES LTD. | sdb@csb-compliance.com |

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Classification | | | | |
|----------------|-------------------------|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 3.10 | acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.11 | acute toxicity (inhal.) | 4 | Acute Tox. 4 | H332 |

LDF(LDF-S1)

| Classification | | | | |
|----------------|---|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 3.2 | skin corrosion/irritation | 1C | Skin Corr. 1C | H314 |
| 3.3 | serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |
| 4.1C | hazardous to the aquatic environment - chronic hazard | 3 | Aquatic Chronic 3 | H412 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

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

Signal word danger

Pictograms

GHS05, GHS07



Hazard statements

H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P310 Immediately call a POISON CENTER/doctor.

Supplemental hazard information

EUH032 Contact with acids liberates very toxic gas.
EUH071 Corrosive to the respiratory tract.
EUH208 Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.

LDF(LDF-S1)

Hazardous ingredients for labelling

guanidinium thiocyanate
2-[bis(2-hydroxyethyl)amino]-2-
(hydroxymethyl)propane-1,3-diol

2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.




SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

| Hazardous ingredients | | | | | |
|--|--|-----------|--|---|-------|
| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
| guanidinium thiocyanate | CAS No 593-84-0 EC No 209-812-1 Index No 615-004-00-3 | 25 – < 50 | Acute Tox. 4 / H302 Acute Tox. 4 / H312 Acute Tox. 4 / H332 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Aquatic Chronic 3 / H412 EUH032 EUH071 |  | - |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | CAS No 6976-37-0 EC No 230-237-7 | 1 – < 3 | Eye Dam. 1 / H318 |  | - |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | CAS No 126-86-3 EC No 204-809-1 | 0.3 – < 1 | Acute Tox. 4 / H302 Eye Dam. 1 / H318 Skin Sens. 1B / H317 Aquatic Chronic 3 / H412 |  | - |

| Name of substance | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-------------------------|-----------------------|-----------|---|---|
| guanidinium thiocyanate | - | - | 593 mg/kg 1,100 mg/kg 1.5 mg/l/4h | oral dermal inhalation: dust/ mist |

LDF(LDF-S1)

| Name of substance | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|---------------------------------------|-----------------------|-----------|-----------|----------------|
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | - | - | 500 mg/kg | oral |

For full text of H-phrases: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Self-protection of the first aider.

Remove affected person from the danger area and lay down.

Do not leave affected person unattended.

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

In case of respiratory tract irritation, consult a physician.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

Causes poorly healing wounds.

Get immediate medical advice/attention.

Following eye contact

Rinse immediately carefully and thoroughly with eye shower or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

Get immediate medical advice/attention.

Following ingestion

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting.

Get immediate medical advice/attention.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

This information is not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible.

Hazardous decomposition products: Section 10.

Hazardous combustion products

nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), sulphur oxides (SO_x), hydrogen cyanide (HCN, prussic acid)

5.3 Advice for firefighters

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

chemical protection suit, Wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Do not breathe mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Specific notes/details

None.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Remove contaminated clothing and protective equipment before entering eating areas.

Do not breathe mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, frost, humidity, UV-radiation/sunlight

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Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

In vitro diagnostics.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available

| Relevant DNELs of components of the mixture | | | | | | |
|--|-----------|-----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| guanidinium thiocyanate | 593-84-0 | DNEL | 1.092 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| guanidinium thiocyanate | 593-84-0 | DNEL | 0.31 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | DNEL | 4.93 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | DNEL | 1.4 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | DNEL | 1.76 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | DNEL | 0.5 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

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| Relevant PNECs of components of the mixture | | | | |
|---|----------|----------|-----------------|------------------------------|
| Name of substance | CAS No | Endpoint | Threshold level | Environmental compartment |
| guanidinium thiocyanate | 593-84-0 | PNEC | 194 µg/l | freshwater |
| guanidinium thiocyanate | 593-84-0 | PNEC | 19.4 µg/l | marine water |
| guanidinium thiocyanate | 593-84-0 | PNEC | 20 mg/l | sewage treatment plant (STP) |
| guanidinium thiocyanate | 593-84-0 | PNEC | 750 µg/kg | freshwater sediment |
| guanidinium thiocyanate | 593-84-0 | PNEC | 75 µg/kg | marine sediment |
| guanidinium thiocyanate | 593-84-0 | PNEC | 37 µg/kg | soil |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.04 mg/l | freshwater |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.004 mg/l | marine water |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.4 mg/l | water |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 7 mg/l | sewage treatment plant (STP) |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.32 mg/kg | freshwater sediment |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.032 mg/kg | marine sediment |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | PNEC | 0.028 mg/kg | soil |

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves | | |
|--------------------------|--------------------------|--|
| Material | Material thickness | Breakthrough times of the glove material |
| no information available | no information available | no information available |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing against liquid chemicals (EN 13034, EN 14605).

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

During spraying wear suitable respiratory equipment.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined |
| Flammability | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit | not determined |
| Flash point | not determined |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Dynamic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | not miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not determined |

| | |
|---|--|
| Vapour pressure | not determined |
| Density and/or relative density | |
| Density | not determined |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |
| 9.2 Other information | |
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

acids, oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)**Acute toxicity**

Test data are not available for the complete mixture.
Harmful if swallowed.
Harmful if inhaled.

Acute toxicity of components of the mixture

| Name of substance | CAS No | Exposure route | ATE |
|---------------------------------------|----------|-----------------------|-------------|
| guanidinium thiocyanate | 593-84-0 | oral | 593 mg/kg |
| guanidinium thiocyanate | 593-84-0 | dermal | 1,100 mg/kg |
| guanidinium thiocyanate | 593-84-0 | inhalation: dust/mist | 1.5 mg/l/4h |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | oral | 500 mg/kg |

| Name of substance | CAS No | Exposure route | End-point | Value | Species | Method | Source |
|---|-----------|----------------|-----------|--------------|-------------|--------------------|--------|
| guanidinium thiocyanate | 593-84-0 | oral | LD50 | 593 mg/kg | rat, female | OECD Guideline 401 | ECHA |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | oral | LD50 | >2,000 mg/kg | rat | OECD Guideline 423 | ECHA |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | oral | LD50 | >500 mg/kg | rat | - | ECHA |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | dermal | LD50 | >2,000 mg/kg | rat | OECD Guideline 402 | ECHA |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol: LC0: ~20 mg/l (1h, Nebel, Ratte) | | | | | | | |

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.

Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Corrosive to the respiratory tract.

11.2 Information on other hazards**Endocrine disrupting properties**

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity (acute)**

Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Method | Source | Exposure time |
|-------------------------|----------|----------|-----------|---------------|--------------------|--------|---------------|
| guanidinium thiocyanate | 593-84-0 | EC50 | 42.4 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 48 h |

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| Name of sub-stance | CAS No | Endpoint | Value | Species | Method | Source | Expos-ure time |
|--|-----------|----------|-----------|---|--------------------|--------|----------------|
| guanidinium thiocyanate | 593-84-0 | LC50 | 89.1 mg/l | guppy (Poecilia reticulata) | OECD Guideline 203 | ECHA | 96 h |
| guanidinium thiocyanate | 593-84-0 | ErC50 | 130 mg/l | algae (Desmod-esmus sub-spicatus) | - | ECHA | 72 h |
| 2-[bis(2-hy-droxyethyl)ami no]-2-(hydroxy-methyl)pro-pane-1,3-diol | 6976-37-0 | LC50 | >100 mg/l | zebra fish (Danio rerio) | OECD Guideline 203 | ECHA | 96 h |
| 2-[bis(2-hy-droxyethyl)ami no]-2-(hydroxy-methyl)pro-pane-1,3-diol | 6976-37-0 | EC50 | >100 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 48 h |
| 2-[bis(2-hy-droxyethyl)ami no]-2-(hydroxy-methyl)pro-pane-1,3-diol | 6976-37-0 | ErC50 | >100 mg/l | algae (pseudokirch-neriella subcap-itata) | OECD Guideline 201 | ECHA | 72 h |
| 2,4,7,9-tetra-methyldec-5-yne-4,7-diol | 126-86-3 | EC50 | 91 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 48 h |
| 2,4,7,9-tetra-methyldec-5-yne-4,7-diol | 126-86-3 | LC50 | 36 mg/l | fathead min-now (Pimephales promelas) | OECD Guideline 203 | ECHA | 96 h |

Aquatic toxicity (chronic)

Harmful to aquatic life with long lasting effects.

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

| Name of sub-stance | CAS No | Endpoint | Value | Species | Method | Source | Expos-ure time |
|-------------------------|----------|----------|-----------|---------------------------------------|--------------------|--------|----------------|
| guanidinium thiocyanate | 593-84-0 | NOEC | 1.84 mg/l | fathead min-now (Pimephales promelas) | OECD Guideline 215 | ECHA | 124 d |
| guanidinium thiocyanate | 593-84-0 | NOEC | 1.25 mg/l | daphnia magna | OECD Guideline 211 | ECHA | 21 d |

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| Name of substance | CAS No | Endpoint | Value | Species | Method | Source | Exposure time |
|--|-----------|------------------------|-----------|---|--------------------|--------|---------------|
| guanidinium thiocyanate | 593-84-0 | LOEC | 12.2 mg/l | fathead minnow (Pimephales promelas) | OECD Guideline 215 | ECHA | 124 d |
| guanidinium thiocyanate | 593-84-0 | LOEC | 2.5 mg/l | daphnia magna | OECD Guideline 211 | ECHA | 21 d |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | NOEC | ≥100 mg/l | algae (pseudokirchneriella subcapitata) | OECD Guideline 201 | ECHA | 72 h |
| 2,4,7,9-tetramethyldec-5-ene-4,7-diol | 126-86-3 | growth rate (ErCx) 10% | 1.8 mg/l | algae (pseudokirchneriella subcapitata) | OECD Guideline 201 | ECHA | 72 min |

12.2 Persistence and degradability

Biodegradation

No data available.

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
|--|-----------|---------------------------|------------------|------|----------------------|--------|
| guanidinium thiocyanate | 593-84-0 | DOC removal | 46 % | 28 d | OECD Guideline 302B | ECHA |
| guanidinium thiocyanate | 593-84-0 | carbon dioxide generation | 32 % | 28 d | OECD Guideline 302B | ECHA |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | carbon dioxide generation | 11.89 % | 28 d | OECD Guideline 301 B | ECHA |
| 2,4,7,9-tetramethyldec-5-ene-4,7-diol | 126-86-3 | carbon dioxide generation | 5 % | 29 d | OECD Guideline 301 | ECHA |

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

Bioaccumulative potential of components of the mixture

| Name of substance | CAS No | Log KOW |
|--|-----------|------------------------------|
| guanidinium thiocyanate | 593-84-0 | -1.11 (pH value: 5.1, 25 °C) |
| 2-[bis(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol | 6976-37-0 | -2.26 (20 °C) |
| 2,4,7,9-tetramethyldec-5-yne-4,7-diol | 126-86-3 | 2.64 |

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 2 Keep away from drains, surface and ground water.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

This material and its container must be disposed of as hazardous waste.

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

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-------------|--------|
| ADR/RID | UN1760 |
| ADR/RID/ADN | UN1760 |
| IMDG-Code | UN1760 |
| ICAO-TI | UN1760 |

14.2 UN proper shipping name

| | |
|--|--------------------------|
| ADR/RID | CORROSIVE LIQUID, N.O.S. |
| ADR/RID/ADN | CORROSIVE LIQUID, N.O.S. |
| IMDG-Code | CORROSIVE LIQUID, N.O.S. |
| ICAO-TI | Corrosive liquid, n.o.s. |
| Technical name (hazardous ingredients) | guanidinium thiocyanate |

14.3 Transport hazard class(es)

| | |
|-------------|---|
| ADR/RID | 8 |
| ADR/RID/ADN | 8 |
| IMDG-Code | 8 |
| ICAO-TI | 8 |

14.4 Packing group

| | |
|-------------|-----|
| ADR/RID | III |
| ADR/RID/ADN | III |
| IMDG-Code | III |
| ICAO-TI | III |

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

-


14.7 Maritime transport in bulk according to IMO instruments

-


14.8 Information for each of the UN Model Regulations

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Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) Additional information Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). Additional information

| | |
|---|--|
| Particulars in the transport document | UN1760, CORROSIVE LIQUID, N.O.S., (guanidinium thiocyanate), 8, III, (E) |
| Classification code | C9 |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 274 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | E |
| Hazard identification No | 80 |
| Emergency Action Code | 2X |

International Maritime Dangerous Goods Code (IMDG) Additional information

| | |
|---|----------|
| Marine pollutant | - |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 223, 274 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| EmS | F-A, S-B |
| Stowage category | A |

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

| | |
|---|-----|
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 1 L |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**Relevant provisions of the European Union (EU)****Restrictions according to REACH, Annex XVII**

Not listed.

Seveso Directive

Not assigned.

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

National regulations (GB)**List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list**

None of the ingredients are listed

Restrictions according to GB REACH, Annex 17

None of the ingredients are listed

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| LDF(LDF-S1) | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |

Legend

R3

1. Shall not be used in:

— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,

Legend

- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
- 2. Articles not complying with paragraph 1 shall not be placed on the market.
- 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
- 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
- 5. Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil'
 - or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
- 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information**Indication of changes (revised safety data sheet)**

Indication of changes: Section 2, 3, 4, 7. 8. 11, 12, 14, 15

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------------|---|
| Acute Tox. | Acute toxicity |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ADR/RID/ADN | Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN) |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic hazard |
| ATE | Acute Toxicity Estimate |

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| Abbr. | Descriptions of used abbreviations |
|------------|---|
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| LOEC | Lowest Observed Effect Concentration |
| log KOW | n-Octanol/water |
| NLP | No-Longer Polymer |
| NOEC | No Observed Effect Concentration |

LDF(LDF-S1)

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H332 | Harmful if inhaled. |
| H412 | Harmful to aquatic life with long lasting effects. |

Responsible for the safety data sheet

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47829 Krefeld, Germany

Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-compliance.com
Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.

MDF(MDF-01)

AS-DF

QuickGene-AutoS DNA FFPE Kit

Version number: 3.0
Replaces version of: 2020-10-29 (2)

Revision: 2023-05-31
First version: 2020-10-29

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

1.1 Product identifier

| | |
|-----------------------------|------------------------|
| Trade name | <u>MDF(MDF-01)</u> |
| Product number | AS-DF |
| Registration number (REACH) | Not relevant (mixture) |
| CAS number | Not relevant (mixture) |

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

| | |
|--------------------------|----------------------|
| Relevant identified uses | In vitro diagnostics |
|--------------------------|----------------------|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
| e-mail (competent person) KURABO INDUSTRIES LTD. | sdb@csb-compliance.com |

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Classification | | | | |
|----------------|-----------------------------------|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 3.1I | acute toxicity (inhal.) | 4 | Acute Tox. 4 | H332 |
| 3.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |

For full text of abbreviations: see SECTION 16

2.2 Label elements

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

Signal word warning

Pictograms

GHS07



Hazard statements

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P304+P340 IF INHALED: Remove person to fresh air and keep 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.

P312 Call a POISON CENTRE/doctor if you feel unwell.

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

Hazardous ingredients for labelling

sodium N-lauroylsarcosinate
ethylenediaminetetraacetic acid

2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.



SECTION 3: Composition/information on ingredients

3.1 Substances



Not relevant (mixture).

3.2 Mixtures

Description of the mixture

| Hazardous ingredients | | | | | |
|-----------------------------|-----------------|-------|---|---|-------|
| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
| sodium N-lauroylsarcosinate | CAS No 137-16-6 | 1 – 5 | Acute Tox. 2 / H330 Skin Irrit. 2 / H315 |   | - |

MDF(MDF-01)

| Hazardous ingredients | | | | | |
|---------------------------------|---|-------|--|---|--------|
| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
| | EC No 205-281-5 | | Eye Dam. 1 / H318 | | |
| ethylenediaminetetraacetic acid | CAS No 60-00-4 EC No 200-449-4 Index No 607-429-00-8 | 1 – 5 | Acute Tox. 4 / H332 Eye Irrit. 2 / H319 STOT RE 2 / H373 |   | GHS-HC |

Notes

GHS- Harmonised classification (the classification of the substance corresponds to the entry in the list according to
 HC: 1272/2008/EC, Annex VI)

| Name of substance | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|---------------------------------|---|-----------|---------------|---------------------------|
| ethylenediaminetetraacetic acid | - | - | 1.5 mg/l/4h | inhalation: dust/ mist |
| sodium N-lauroylsarcosinate | Skin Irrit. 2; H315: C ≥ 30 % Eye Dam. 1; H318: C ≥ 30 % Eye Irrit. 2; H319: 1 % ≤ C < 30 % | - | >0.05 mg/l/4h | inhalation: dust/ mist |

For full text of H-phrases: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Self-protection of the first aider.
 Remove affected person from the danger area and lay down.
 Do not leave affected person unattended.
 Take off immediately all contaminated clothing.
 In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.
 Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.
 If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

This information is not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible.
Hazardous decomposition products: Section 10.

Hazardous combustion products

nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

Keep containers cool with water spray.
In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

chemical protection suit, Wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Do not breathe mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Specific notes/details

None.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.
Do not breathe mist/vapours/spray.
Do not get in eyes, on skin, or on clothing.
Wash hands thoroughly after handling.
Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, frost, humidity, UV-radiation/sunlight

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.
Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.

Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

In vitro diagnostics.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available

| Relevant DNELs of components of the mixture | | | | | | |
|---|---------|-----------|-----------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| ethylenediamine-tetraacetic acid | 60-00-4 | DNEL | 1.5 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |

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| Relevant DNELs of components of the mixture | | | | | | |
|---|----------|-----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| ethylenediamine-tetraacetic acid | 60-00-4 | DNEL | 1.5 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| sodium N-lauroylsarcosinate | 137-16-6 | DNEL | 70.53 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| sodium N-lauroylsarcosinate | 137-16-6 | DNEL | 20 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

| Relevant PNECs of components of the mixture | | | | |
|---|----------|----------|-----------------|------------------------------|
| Name of substance | CAS No | Endpoint | Threshold level | Environmental compartment |
| ethylenediaminetetraacetic acid | 60-00-4 | PNEC | 2.17 mg/l | freshwater |
| ethylenediaminetetraacetic acid | 60-00-4 | PNEC | 0.217 mg/l | marine water |
| ethylenediaminetetraacetic acid | 60-00-4 | PNEC | 50 mg/l | sewage treatment plant (STP) |
| ethylenediaminetetraacetic acid | 60-00-4 | PNEC | 1.11 mg/kg | soil |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 0.009 mg/l | freshwater |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 0.001 mg/l | marine water |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 3 mg/l | sewage treatment plant (STP) |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 0.064 mg/kg | freshwater sediment |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 0.006 mg/kg | marine sediment |
| sodium N-lauroylsarcosinate | 137-16-6 | PNEC | 0.008 mg/kg | soil |

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. (EN 166).

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Hand protection

| Protective gloves | | |
|--------------------------|--------------------------|--|
| Material | Material thickness | Breakthrough times of the glove material |
| no information available | no information available | no information available |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing against liquid chemicals (EN 13034, EN 14605).

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

During spraying wear suitable respiratory equipment.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | 100 °C |
| Flammability | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit | not determined |
| Flash point | not determined |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |

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| | |
|--|-----------------------------------|
| Dynamic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | not miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not determined |
| Vapour pressure | 23 hPa |
| Density and/or relative density | |
| Density | not determined |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |

9.2 Other information

| | |
|---|--|
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)**Acute toxicity**

Test data are not available for the complete mixture.
Harmful if inhaled.

Acute toxicity of components of the mixture

| Name of substance | CAS No | Exposure route | End-point | Value | Species | Method | Source |
|---------------------------------|----------|-----------------------|-----------|-----------------------|---------|--------------------|--------|
| ethylenediaminetetraacetic acid | 60-00-4 | oral | LD50 | 4,500 mg/kg | rat | OECD Guideline 401 | ECHA |
| sodium N-lauroylsarcosinate | 137-16-6 | oral | LD50 | >5,000 mg/kg | rat | OECD Guideline 401 | ECHA |
| sodium N-lauroylsarcosinate | 137-16-6 | inhalation: dust/mist | LC50 | >0.05 – < 0.5 mg/l/4h | rat | OECD Guideline 403 | ECHA |

Skin corrosion/irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation**Skin sensitisation**

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards**Endocrine disrupting properties**

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity (acute)**

Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Method | Source | Exposure time |
|---------------------------------|----------|----------|---------------------|-------------------------------------|--------------------|--------|---------------|
| ethylenediaminetetraacetic acid | 60-00-4 | LC50 | $>100 \text{ mg/l}$ | rainbow trout (Oncorhynchus mykiss) | OECD Guideline 203 | ECHA | 96 h |
| ethylenediaminetetraacetic acid | 60-00-4 | EC50 | $>114 \text{ mg/l}$ | daphnia magna | OECD Guideline 202 | ECHA | 48 h |
| ethylenediaminetetraacetic acid | 60-00-4 | ErC50 | $>100 \text{ mg/l}$ | algae (raphidocelis subcapitata) | OECD Guideline 201 | ECHA | 72 h |
| sodium N-lauroylsarcosinate | 137-16-6 | LC50 | 32.1 mg/l | zebra fish (Danio rerio) | OECD Guideline 203 | ECHA | 96 h |

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| Name of substance | CAS No | Endpoint | Value | Species | Method | Source | Exposure time |
|-----------------------------|----------|----------|-----------|-----------------------------------|--------------------|--------|---------------|
| sodium N-lauroylsarcosinate | 137-16-6 | ErC50 | 79 mg/l | algae (Desmod-esmus sub-spicatus) | OECD Guideline 201 | ECHA | 72 h |
| sodium N-lauroylsarcosinate | 137-16-6 | EC50 | 8.91 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 48 h |
| sodium N-lauroylsarcosinate | 137-16-6 | EC50 | 39 mg/l | algae (Desmod-esmus sub-spicatus) | OECD Guideline 201 | ECHA | 72 h |

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Method | Source | Exposure time |
|---------------------------------|----------|--------------------|------------|---|--------------------|--------|---------------|
| ethylenediaminetetraacetic acid | 60-00-4 | NOEC | 25 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 21 d |
| ethylenediaminetetraacetic acid | 60-00-4 | NOEC | ≥35.1 mg/l | zebra fish (Danio rerio) | OECD Guideline 210 | ECHA | 35 d |
| ethylenediaminetetraacetic acid | 60-00-4 | NOEC | 79.4 mg/l | algae (raphidocelis subcapitata) | OECD Guideline 201 | ECHA | 72 h |
| ethylenediaminetetraacetic acid | 60-00-4 | NOEC | ≥640 mg/l | activated sludge of a predominantly domestic sewage | OECD Guideline 209 | ECHA | 3 h |
| ethylenediaminetetraacetic acid | 60-00-4 | LOEC | 50 mg/l | daphnia magna | OECD Guideline 202 | ECHA | 21 d |
| ethylenediaminetetraacetic acid | 60-00-4 | growth (Eb-Cx) 10% | >500 mg/l | activated sludge of a predominantly domestic sewage | OECD Guideline 209 | ECHA | 30 min |
| sodium N-lauroylsarcosinate | 137-16-6 | NOEC | 9.2 mg/l | algae (Desmod-esmus sub-spicatus) | OECD Guideline 201 | ECHA | 72 h |
| sodium N-lauroylsarcosinate | 137-16-6 | NOEC | 30 mg/l | activated sludge of a predominantly domestic sewage | OECD Guideline 209 | ECHA | 3 h |

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| Name of sub-stance | CAS No | Endpoint | Value | Species | Method | Source | Expos-ure time |
|-----------------------------|----------|----------|---------|-----------------------------------|--------------------|--------|----------------|
| sodium N-lauroylsarcosinate | 137-16-6 | LOEC | 29 mg/l | algae (Desmod-esmus sub-spicatus) | OECD Guideline 201 | ECHA | 72 h |

12.2 Persistence and degradability

Biodegradation

No data available.

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
|---------------------------------|----------|---------------------------|------------------|------|----------------------|--------|
| ethylenediaminetetraacetic acid | 60-00-4 | oxygen depletion | 23 % | 28 d | OECD Guideline 301 D | ECHA |
| sodium N-lauroylsarcosinate | 137-16-6 | carbon dioxide generation | 82 % | 28 d | ISO 14593 | ECHA |

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

Bioaccumulative potential of components of the mixture

| Name of substance | CAS No | Log KOW |
|---------------------------------|----------|---------------|
| ethylenediaminetetraacetic acid | 60-00-4 | -3.86 (25 °C) |
| sodium N-lauroylsarcosinate | 137-16-6 | 0.37 |

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|-------------|--|--------------|
| 14.1 | UN number or ID number | not assigned |
| 14.2 | UN proper shipping name | - |
| 14.3 | Transport hazard class(es) | - |
| 14.4 | Packing group | - |
| 14.5 | Environmental hazards | - |
| 14.6 | Special precautions for user | - |
| 14.7 | Maritime transport in bulk according to IMO instruments | - |

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Relevant provisions of the European Union (EU)****Restrictions according to REACH, Annex XVII**

Not listed.

Seveso Directive

Not assigned.

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

None of the ingredients are listed

Restrictions according to GB REACH, Annex 17

None of the ingredients are listed

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| MDF(MDF-01) | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |

Legend

- R3
- Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
 - Articles not complying with paragraph 1 shall not be placed on the market.
 - Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
 - Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
 - Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil'
 - or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
 - grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';

Legend

(c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.

7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Indication of changes: Section 2, 3, 8, 11, 12, 15

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|------------|---|
| Acute Tox. | Acute toxicity |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |

MDF(MDF-01)

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| IMDG | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| LOEC | Lowest Observed Effect Concentration |
| log KOW | n-Octanol/water |
| NLP | No-Longer Polymer |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| STOT RE | Specific target organ toxicity - repeated exposure |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
 Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
 International Maritime Dangerous Goods Code (IMDG).
 Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

MDF(MDF-01)

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H332 | Harmful if inhaled. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Responsible for the safety data sheet

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Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.

WDF(WDF-S1)
AS-DF

Version number: 3.0
Replaces version of: 2020-10-29 (2)

Revision: 2023-01-04
First version: 2015-07-21

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

1.1 Product identifier

| | |
|-----------------------|---------------------------|
| Trade name | <u>WDF(WDF-S1)</u> |
| Product number | AS-DF |
| CAS number | Not relevant (mixture) |

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

| | |
|---------------------------------|----------------------|
| Relevant identified uses | In vitro diagnostics |
|---------------------------------|----------------------|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
|---|--|

| | |
|----------------------------------|------------------------|
| e-mail (competent person) | sdb@csb-compliance.com |
|----------------------------------|------------------------|

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD.

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (acc. to GB CLP)

| Classification | | | | |
|----------------|-----------------------------------|----------|---------------------------|-------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard state-ment |
| 2.6 | flammable liquid | 3 | Flam. Liq. 3 | H226 |
| 3.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling (acc. to GB CLP)

Signal word warning

Pictograms

GHS02, GHS07



Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....

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.

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

Additional labelling requirements see section 15 of the safety data sheet

Derogations from labelling requirements

Labelling of packages where the contents do not exceed 125 ml

Signal word warning

Pictograms

GHS02, GHS07



Hazard statements

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Endocrine disrupting properties

None of the ingredients are listed.



SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

| Hazardous ingredients | | | | | |
|-----------------------|---|-----------|--|---|-------|
| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
| ethanol | CAS No 64-17-5 EC No 200-578-6 Index No 603-002-00-5 | 50 – < 75 | Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 |   | - |

| Name of substance | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-------------------|------------------------------|-----------|-----|----------------|
| ethanol | Eye Irrit. 2; H319: C ≥ 50 % | - | - | - |

For full text of H-phrases: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

Solvent vapours are heavier than air and may spread along floors.

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Avoid contact with skin and eyes.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

In case of formation of gases/vapours/mists suppress with water spray

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Handling of incompatible substances or mixtures

Do not mix with acids.

Do not mix with reducing agents.

Do not mix with oxidiser

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

Remove contaminated clothing and protective equipment before entering eating areas.

Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres

Keep container tightly closed and in a well-ventilated place.

Use local and general ventilation.

Keep cool.

Protect from sunlight.

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Take precautionary measures against static discharge.

Ground/bond container and receiving equipment.

Protect from sunlight.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, frost

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

WDF(WDF-S1)

| Occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | |
|--|---------------|---------|------------|-----------|--------------------------|------------|---------------------------|----------|-----------|
| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Notation | Source |
| GB | ethanol | 64-17-5 | WEL | 1,000 | 1,920 | - | - | - | EH40/2005 |

Notation

- STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
- TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

| Relevant DNELs of components of the mixture | | | | | | |
|---|---------|----------|-----------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| ethanol | 64-17-5 | DNEL | 380 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |

| Relevant PNECs of components of the mixture | | | | |
|--|---------|----------|-----------------|------------------------------|
| Name of substance | CAS No | Endpoint | Threshold level | Environmental compartment |
| ethanol | 64-17-5 | PNEC | 0.96 mg/l | freshwater |
| ethanol | 64-17-5 | PNEC | 580 mg/l | sewage treatment plant (STP) |
| ethanol | 64-17-5 | PNEC | 3.6 mg/kg | freshwater sediment |
| ethanol | 64-17-5 | PNEC | 0.63 mg/kg | soil |
| ethanol | 64-17-5 | PNEC | 2.9 mg/kg | marine sediment |
| ethanol: PNEC Oral - Predators - Secondary poisoning - 0,38 g/kg | | | | |

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves |
|--------------------------|
| Material |
| no information available |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined (78 °C, CAS 64-17-5) |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | not determined |
| Flash point | >23 – ≤60 °C |
| Auto-ignition temperature | not determined (455 °C, CAS 64-17-5) |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Dynamic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not determined |

| | |
|---|---|
| Vapour pressure | not determined (57 hPa, CAS 64-17-5) |
| Density and/or relative density | |
| Density | not determined |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |
| 9.2 Other information | |
| Information with regard to physical hazard classes | there is no additional information |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated:

risk of ignition

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

10.5 Incompatible materials

acids, oxidisers, reducing agents

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification acc. to GHS**Acute toxicity**

Test data are not available for the complete mixture.

Acute toxicity of components of the mixture

| Name of substance | CAS No | Exposure route | End-point | Value | Species | Method | Source |
|-------------------|---------|--------------------|-----------|---------------|---------|--------------------|--------|
| ethanol | 64-17-5 | inhalation: vapour | LC50 | 124.7 mg/l/4h | rat | OECD Guideline 403 | ECHA |
| ethanol | 64-17-5 | oral | LD50 | 10,470 mg/kg | rat | OECD Guideline 401 | ECHA |

Skin corrosion/irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation**Skin sensitisation**

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards**Endocrine disrupting properties**

None of the ingredients are listed.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity (acute)**

Test data are not available for the complete mixture.

Aquatic toxicity (acute) of components of the mixture

| Name of sub-stance | CAS No | Endpoint | Expos-ure time | Value | Species | Method | Source |
|--------------------|---------|----------|----------------|--------------|--------------------------------------|----------------------|--------|
| ethanol | 64-17-5 | LC50 | 48 h | 5,012 mg/l | Ceriodaphnia dubia (water flea) | ASTM E729-80 | ECHA |
| ethanol | 64-17-5 | LC50 | 96 h | 14.2 g/l | fathead minnow (Pimephales promelas) | US EPA method E03-05 | ECHA |
| ethanol | 64-17-5 | EC50 | 48 h | >10,000 mg/l | Ceriodaphnia dubia (water flea) | DIN 38412 Teil 11 | ECHA |
| ethanol | 64-17-5 | EC50 | 96 h | 12.9 g/l | fathead minnow (Pimephales promelas) | US EPA method E03-05 | ECHA |
| ethanol | 64-17-5 | ErC50 | 72 h | 275 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic) of components of the mixture

| Name of sub-stance | CAS No | Endpoint | Expos-ure time | Value | Species | Method | Source |
|--------------------|---------|------------------------|----------------|------------|---------------------------------|--------------------|--------|
| ethanol | 64-17-5 | LC50 | 9 d | 454 mg/l | daphnia magna | - | ECHA |
| ethanol | 64-17-5 | LC50 | 10 d | 1,806 mg/l | Ceriodaphnia dubia (water flea) | - | ECHA |
| ethanol | 64-17-5 | NOEC | 10 d | 2 mg/l | Ceriodaphnia dubia (water flea) | - | ECHA |
| ethanol | 64-17-5 | NOEC | 120 h | 250 mg/l | zebra fish (Danio rerio) | OECD Guideline 212 | ECHA |
| ethanol | 64-17-5 | growth rate (ErCx) 10% | 3 d | 11.5 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |
| ethanol | 64-17-5 | growth rate (ErCx) 10% | 4 d | 86 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |

12.2 Persistence and degradability**Biodegradation**

No data available.

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
|-------------------|---------|------------------|------------------|------|--------|--------|
| ethanol | 64-17-5 | oxygen depletion | ~84 % | 20 d | - | ECHA |

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

Bioaccumulative potential of components of the mixture

| Name of substance | CAS No | BCF | Log KOW |
|-------------------|---------|-----|------------------------------|
| ethanol | 64-17-5 | - | -0.35 (pH value: 7.4, 24 °C) |

WDF(WDF-S1)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

| | |
|---------|--------|
| ADR/RID | UN1170 |
|---------|--------|

| | |
|-----------|--------|
| IMDG-Code | UN1170 |
|-----------|--------|

| | |
|---------|--------|
| ICAO-TI | UN1170 |
|---------|--------|

14.2 UN proper shipping name

| | |
|---------|------------------|
| ADR/RID | ETHANOL SOLUTION |
|---------|------------------|

| | |
|-----------|------------------|
| IMDG-Code | ETHANOL SOLUTION |
|-----------|------------------|



| | |
|---------|------------------|
| ICAO-TI | Ethanol solution |
|---------|------------------|

14.3 Transport hazard class(es)

| | |
|---------|---|
| ADR/RID | 3 |
|---------|---|

| | |
|-----------|---|
| IMDG-Code | 3 |
|-----------|---|

WDF(WDF-S1)

| | | |
|-------------|---|--|
| | ICAO-TI | 3 |
| 14.4 | Packing group | |
| | ADR/RID | III |
| | IMDG-Code | III |
| | ICAO-TI | III |
| 14.5 | Environmental hazards | - |
| 14.6 | Special precautions for user | - |
| 14.7 | Maritime transport in bulk according to IMO instruments | - |
| 14.8 | <u>Information for each of the UN Model Regulations</u> | |
| | Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) | |
| | Additional information | |
| | Particulars in the transport document | UN1170, ETHANOL SOLUTION, (ethanol), 3, III, (D/E) |
| | Classification code | F1 |
| | Danger label(s) | 3 |
| |  | |
| | Special provisions (SP) | 144, 601 |
| | Excepted quantities (EQ) | E1 |
| | Limited quantities (LQ) | 5 L |
| | Transport category (TC) | 3 |
| | Tunnel restriction code (TRC) | D/E |
| | Hazard identification No | 30 |
| | Emergency Action Code | 2Y |
| | International Maritime Dangerous Goods Code (IMDG) Additional information | |
| | Marine pollutant | - |
| | Danger label(s) | 3 |
| |  | |
| | Special provisions (SP) | 144, 223 |
| | Excepted quantities (EQ) | E1 |
| | Limited quantities (LQ) | 5 L |

WDF(WDF-S1)

EmS

F-E, S-D

Stowage category

A

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Danger label(s)

3



Special provisions (SP)

A3, A58, A180

Excepted quantities (EQ)

E1

Limited quantities (LQ)

10 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|---------------------------------------|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| P5c | flammable liquids (cat. 2, 3) | 5,000 50,000 | 51) |

Notation

51) flammable liquids, categories 2 or 3 not covered by P5a and P5b

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

WDF(WDF-S1)

None of the ingredients are listed.

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

None of the ingredients are listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| WDF(WDF-S1) | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |
| ethanol | flammable / pyrophoric | - | R40 |

Legend

R3

1. Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
5. Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil'
 - or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.

Legend

- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - ‘whoopie’ cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 2. Without prejudice to the application of other legislation on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:

‘For professional users only’.
 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (***).
 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.
- (***) OJ L 147, 9.6.1975, p. 40.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 1.1 | Registration number (REACH): Not relevant (mixture). | - |
| 1.3 | e-mail (competent person): sdb@csb-online.de Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. | e-mail (competent person): sdb@csb-compliance.com Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. |
| 2.1 | - | Classification: change in the listing (table) |
| 2.2 | Signal word: danger | Signal word: warning |
| 2.2 | - | Hazard statements: change in the listing (table) |
| 2.2 | - | Precautionary statements: change in the listing (table) |
| 2.2 | - | Derogations from labelling requirements |
| 2.2 | - | Signal word: warning |

WDF(WDF-S1)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---------------------------|---|
| 2.2 | - | Pictograms: change in the listing (table) |
| 3.2 | - | Hazardous ingredients: change in the listing (table) |
| 3.2 | - | Hazardous ingredients: change in the listing (table) |
| 8.1 | - | Relevant DNELs of components of the mixture: change in the listing (table) |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|------------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| Flam. Liq. | Flammable liquid |
| GB CLP | The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended) |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |

WDF(WDF-S1)

| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| log KOW | n-Octanol/water |
| NLP | No-Longer Polymer |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended).

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended).

GB mandatory classification and labelling.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

WDF(WDF-S1)

Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |

Responsible for the safety data sheet

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e-Mail: info@csb-compliance.com

Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.

CDF(CDF-S1)

AS-DF

Version number: 2.0
Replaces version of: 2020-10-29 (1)

Revision: 2023-01-04
First version: 2020-10-29

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

1.1 Product identifier

| | |
|-----------------------------|------------------------|
| Trade name | <u>CDF(CDF-S1)</u> |
| Product number | AS-DF |
| Registration number (REACH) | Not relevant (mixture) |
| CAS number | Not relevant (mixture) |

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

| | |
|--------------------------|----------------------|
| Relevant identified uses | In vitro diagnostics |
|--------------------------|----------------------|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
|---|--|

| | |
|---------------------------|------------------------|
| e-mail (competent person) | sdb@csb-compliance.com |
|---------------------------|------------------------|

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD.

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

This mixture does not meet the criteria for classification.

2.2 Label elements

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

Not required.

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Endocrine disrupting properties

None of the ingredients are listed.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Hazardous ingredients acc. to EU regulation

None

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

This information is not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

nitrogen oxides (NO_x)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ventilate affected area.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Specific notes/details

None.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

frost

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)**Eye/face protection**

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves |
|--------------------------|
| Material |
| no information available |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | not determined |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined (100 °C, CAS 7732-18-5) |
| Flammability | non-combustible |
| Lower and upper explosion limit | not determined |
| Flash point | non-combustible |

CDF(CDF-S1)

| | |
|---|--|
| Auto-ignition temperature | non-combustible |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Dynamic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not relevant (inorganic) |
| Vapour pressure | not determined (23 hPa, CAS 7732-18-5) |
| Density and/or relative density | |
| Density | not determined |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |
| 9.2 Other information | |
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

This mixture does not meet the criteria for classification.

Acute toxicity

Test data are not available for the complete mixture.

Skin corrosion/irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory or skin sensitisation

Skin sensitisation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

None of the ingredients are listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Test data are not available for the complete mixture.

Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

12.2 Persistence and degradability

Biodegradation

No data available.

Persistence

No data available.

12.3 Bioaccumulative potential

Test data are not available for the complete mixture.

n-octanol/water (log KOW)

not relevant
(inorganic)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): nwg

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|------|---|--------------|
| 14.1 | UN number or ID number | not assigned |
| 14.2 | UN proper shipping name | - |
| 14.3 | Transport hazard class(es) | - |
| 14.4 | Packing group | - |
| 14.5 | Environmental hazards | - |
| 14.6 | Special precautions for user | - |
| 14.7 | Maritime transport in bulk according to IMO instruments | - |

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

None of the ingredients are listed.

Seveso Directive

Not assigned.

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

None of the ingredients are listed.

Regulation on the marketing and use of explosives precursors

None of the ingredients are listed.

Regulation on drug precursors

None of the ingredients are listed.

Regulation on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

None of the ingredients are listed

Restrictions according to GB REACH, Annex 17

None of the ingredients are listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 1.3 | e-mail (competent person): sdb@csb-online.de Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. | e-mail (competent person): sdb@csb-compliance.com Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. |
| 8.1 | - | Control parameters: Occupational exposure limit values (Workplace Exposure Limits) This information is not available |
| 14.2 | UN proper shipping name: ETHANOL SOLUTION | UN proper shipping name: - |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|----------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| IMDG | International Maritime Dangerous Goods Code |
| PBT | Persistent, Bioaccumulative and Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
 Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
 International Maritime Dangerous Goods Code (IMDG).
 Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties.
 Health hazards.
 Environmental hazards.
 The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Responsible for the safety data sheet

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 Dujardinstr. 5
 47829 Krefeld, Germany

Telephone: +49 (0) 2151 - 652086 - 0
 Telefax: +49 (0) 2151 - 652086 - 9
 e-Mail: info@csb-compliance.com
 Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.
 This SDS has been compiled and is solely intended for this product.

DDF (DDF-01)

AS-DF

QuickGene-AutoS DNA FFPE Kit

Version number: 2.0
Replaces version of: 2020-10-29 (1)

Revision: 2023-01-04
First version: 2020-10-29

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

1.1 Product identifier

| | |
|---------------------------------|---------------------|
| Identification of the substance | Paraffin oils |
| Trade name | DDF (DDF-01) |
| EC number | 232-384-2 |
| CAS number | 8012-95-1 |

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

| | |
|--------------------------|-------------|
| Relevant identified uses | General use |
|--------------------------|-------------|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
|---|--|

e-mail (competent person) sdb@csb-compliance.com

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD.

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (acc. to GB CLP)

| Classification | | | | |
|----------------|---|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 3.10 | aspiration hazard | 1 | Asp. Tox. 1 | H304 |
| 4.1C | hazardous to the aquatic environment - chronic hazard | 4 | Aquatic Chronic 4 | H413 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling (acc. to GB CLP)

Signal word danger

Pictograms

GHS08



Hazard statements

H304 May be fatal if swallowed and enters airways.

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements

P273 Avoid release to the environment.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER/doctor.

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

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Not listed.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Paraffin oils

Identifiers

CAS No 8012-95-1

EC No 232-384-2

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Call a physician in any case.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Death following aspiration.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.
Ventilate affected area.
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.
Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Keep away from sources of ignition - No smoking.

Specific notes/details

None.

Handling of incompatible substances or mixtures

Do not mix with oxidiser

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, humidity, UV-radiation/sunlight

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available

Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|---------------------|------------------------------------|-------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 5 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 5 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)**Eye/face protection**

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves | | |
|--------------------------|--------------------------|--|
| Material | Material thickness | Breakthrough times of the glove material |
| no information available | no information available | no information available |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | liquid |
| Colour | dark brown |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | >316 °C |
| Flammability | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit | 0.9 vol% - 7 vol% |
| Flash point | 135 – >294 °C |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | 112 – 475 mm ² /s at 40 °C 12.4 – 31.6 mm ² /s at 100 °C |
| Dynamic viscosity | 418 cP at 40 °C |
| Solubility(ies) | |
| Water solubility | not miscible in any proportion |
| Partition coefficient n-octanol/water (log value) | not determined |
| Vapour pressure | <0.13 hPa at 20 °C |
| Density and/or relative density | |
| Density | 0.88 g/cm ³ |
| Relative vapour density | >2 (air = 1) |
| Particle characteristics | not relevant (liquid) |

9.2 Other information

| | |
|---|--|
| Information with regard to physical hazard classes | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics | there is no additional information |

SECTION 10: Stability and reactivity**10.1 Reactivity**

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. UV-radiation/sunlight.

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgement (weight of evidence determination).

Classification acc. to GHS**Acute toxicity**

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

| Exposure route | Endpoint | Value | Species | Source |
|----------------|----------|--------------|---------|--------|
| oral | LD50 | >5,000 mg/kg | rat | ECHA |
| dermal | LD50 | >2,000 mg/kg | rabbit | ECHA |

Skin corrosion/irritation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory or skin sensitisation

Skin sensitisation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitisation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Not listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

No data available.

Aquatic toxicity (chronic)

May cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Biodegradation

Not readily biodegradable.

Persistence

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|------|----------------------------|--------------|
| 14.1 | UN number | not assigned |
| 14.2 | UN proper shipping name | - |
| 14.3 | Transport hazard class(es) | - |
| 14.4 | Packing group | - |
| 14.5 | Environmental hazards | - |

- 14.6 Special precautions for user -
- 14.7 Maritime transport in bulk according to IMO - instruments

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

Not assigned.

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

Not listed.

Regulation on the marketing and use of explosives precursors

Not listed.

Regulation on drug precursors

Not listed.

Regulation on substances that deplete the ozone layer (ODS)

Not listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

Not listed.

Regulation on persistent organic pollutants (POP)

Not listed.

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

Not listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| Paraffin oils | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |

Legend

- R3 1. Shall not be used in:
— ornamental articles intended to produce light or colour effects by means of different phases, for example

Legend

- in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
- 2. Articles not complying with paragraph 1 shall not be placed on the market.
- 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
- 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
- 5. Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil'
 - or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
- 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 1.1 | - | Identification of the substance: Paraffin oils |
| 1.1 | Registration number (REACH): The substance is exempted from the obligation to register. | - |
| 1.3 | e-mail (competent person): sdb@csb-online.de Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. | e-mail (competent person): sdb@csb-compliance.com Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. |
| 2.1 | - | Classification: change in the listing (table) |

DDF (DDF-01)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 2.2 | - | Pictograms: change in the listing (table) |
| 2.2 | - | Hazard statements: change in the listing (table) |
| 2.2 | - | Precautionary statements: change in the listing (table) |
| 2.2 | Supplemental hazard information | - |
| 2.2 | - | Supplemental hazard information: change in the listing (table) |
| 2.2 | Labelling of packages where the contents do not exceed 125 ml | - |
| 2.2 | - | Hazard pictogram(s): change in the listing (table) |
| 2.2 | - | Hazard statements: change in the listing (table) |
| 2.2 | - | Precautionary statements: change in the listing (table) |
| 2.2 | - | Supplemental hazard information: change in the listing (table) |
| 8.1 | Control parameters | Control parameters: Occupational exposure limit values (Workplace Exposure Limits) This information is not available |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|----------|---|
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| GB CLP | The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended) |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |

DDF (DDF-01)

| Abbr. | Descriptions of used abbreviations |
|----------|---|
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| IMDG | International Maritime Dangerous Goods Code |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| vPvB | Very Persistent and very Bioaccumulative |

Key literature references and sources for data

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended).
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended).

GB mandatory classification and labelling.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|---|
| H304 | May be fatal if swallowed and enters airways. |
| H413 | May cause long lasting harmful effects to aquatic life. |

Responsible for the safety data sheet

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Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.

Ethanol

Version number: 6.0
Replaces version of: 2021-12-08 (5)

Revision: 2022-12-02
First version: 2018-10-25

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

1.1 Product identifier

| | |
|--|------------------------------------|
| Identification of the substance | ethanol |
| Trade name | <u>Ethanol</u> |
| Registration number (REACH) | This information is not available. |
| EC number | 200-578-6 |
| Index number in CLP Annex VI Index No (GB CLP) | 603-002-00-5 |
| CAS number | 64-17-5 |

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

| | |
|--------------------------|---|
| Relevant identified uses | Laboratory chemical In vitro diagnostics |
|--------------------------|---|

1.3 Details of the supplier of the safety data sheet

| | |
|---|--|
| KURABO INDUSTRIES LTD. 14-30, Shimokida-cho, Neyagawa, Osaka 572-0823 Japan | Telephone: ++81-72-820-3079 Telefax: ++81-72-820-3095 |
|---|--|

e-mail (competent person) sdb@csb-compliance.com

Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD.

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Classification | | | | |
|----------------|-----------------------------------|----------|---------------------------|------------------|
| Section | Hazard class | Category | Hazard class and category | Hazard statement |
| 2.6 | flammable liquid | 2 | Flam. Liq. 2 | H225 |
| 3.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |

Ethanol

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

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

Signal word danger

Pictograms

GHS02, GHS07



Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

Additional labelling requirements see section 15 of the safety data sheet

Derogations from labelling requirements

Labelling of packages where the contents do not exceed 125 ml

Signal word danger

Pictograms

GHS02, GHS07



Hazard statements

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Not listed.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|--------------------------|-----------|
| Name of substance | ethanol |
| Identifiers | |
| CAS No | 64-17-5 |
| EC No | 200-578-6 |

Ethanol

Index No 603-002-00-5
(GB CLP)

Molecular formula C₂H₆O

Molar mass 46.07 g/mol

concentration limit, M-factor, ATE

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|------------------------------|-----------|-----|----------------|
| Eye Irrit. 2; H319: C ≥ 50 % | - | - | - |

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.
Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

These information are not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

Solvent vapours are heavier than air and may spread along floors.

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

protective clothing against liquid chemicals, self-contained breathing apparatus (EN 133)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Ethanol

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres

Keep container tightly closed and in a well-ventilated place.

Use local and general ventilation.

Keep cool.

Protect from sunlight.

Ethanol

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Ground/bond container and receiving equipment.
Protect from sunlight.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature recommended storage temperature: 15 - 25 °C

Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | |
|--|---------------|---------|------------|-----------|-------------|------------|--------------|----------|-----------|
| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m³] | STEL [ppm] | STEL [mg/m³] | Notation | Source |
| GB | ethanol | 64-17-5 | WEL | 1,000 | 1,920 | - | - | - | EH40/2005 |

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|-----------------|------------------------------------|-------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 380 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects |

Ethanol

Environmental values

| Relevant PNECs and other threshold levels | | |
|---|-----------------|------------------------------|
| Endpoint | Threshold level | Environmental compartment |
| PNEC | 0.96 mg/l | freshwater |
| PNEC | 580 mg/l | sewage treatment plant (STP) |
| PNEC | 3.6 mg/kg | freshwater sediment |
| PNEC | 0.63 mg/kg | soil |
| PNEC | 2.9 mg/kg | marine sediment |
| PNEC Oral - Predators - Secondary poisoning - 0,38 g/kg | | |

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection. (EN 166).

Hand protection

| Protective gloves | | |
|--|--------------------|--|
| Material | Material thickness | Breakthrough times of the glove material |
| IIR: isobutene-isoprene (butyl) rubber | ≥ 0,5 mm | >480 minutes (permeation: level 6) |
| FKM: fluoro-elastomer | ≥ 0,4 mm | >480 minutes (permeation: level 6) |
| NBR: acrylonitrile-butadiene rubber | ≥ 0,4 mm | >120 minutes (permeation: level 4) |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

(EN 136, EN 140, EN 14387, EN 143, EN 149).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

Ethanol

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | liquid |
| Colour | colourless |
| Odour | pungent |
| Melting point/freezing point | -114 °C at 1,013 hPa |
| Boiling point or initial boiling point and boiling range | 78 °C |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | 2.5 vol% - 13.5 vol% |
| Flash point | 12 °C |
| Auto-ignition temperature | 455 °C at 1,013 hPa |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Dynamic viscosity | 1.2 mPa s at 20 °C |
| Solubility(ies) | |
| Water solubility | 789 g/l at 20 °C |
| Partition coefficient n-octanol/water (log value) | -0.35 (pH value: 7.4, 24 °C) (OECD Guideline 107) |
| Vapour pressure | 59 hPa at 20 °C |
| Density and/or relative density | |
| Density | 0.79 g/cm ³ at 20 °C |
| Relative vapour density | this information is not available |
| Particle characteristics | not relevant (liquid) |

9.2 Other information

| | |
|---|------------------------------------|
| Information with regard to physical hazard classes | there is no additional information |
|---|------------------------------------|

Ethanol

Other safety characteristics

Temperature class (EU, acc. to ATEX)

T1

Temperature class (EU, acc. to ATEX)

(maximum permissible surface temperature on the equipment: 450°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.
risk of ignition

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgement (weight of evidence determination).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic (oral).

Ethanol

| Exposure route | Endpoint | Value | Species | Method | Source |
|--------------------|----------|---------------|---------|--------------------|--------|
| inhalation: vapour | LC50 | 124.7 mg/l/4h | rat | OECD Guideline 403 | ECHA |
| oral | LD50 | 10,470 mg/kg | rat | OECD Guideline 401 | ECHA |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Skin sensitisation

Shall not be classified as a skin sensitiser.

Respiratory sensitisation

Shall not be classified as a respiratory sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Not listed.

Ethanol

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

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

| Endpoint | Exposure time | Value | Species | Method | Source |
|----------|---------------|--------------|--------------------------------------|----------------------|--------|
| LC50 | 48 h | 5,012 mg/l | Ceriodaphnia dubia (water flea) | ASTM E729-80 | ECHA |
| LC50 | 96 h | 14.2 g/l | fathead minnow (Pimephales promelas) | US EPA method E03-05 | ECHA |
| EC50 | 48 h | >10,000 mg/l | Ceriodaphnia dubia (water flea) | DIN 38412 Teil 11 | ECHA |
| EC50 | 96 h | 12.9 g/l | fathead minnow (Pimephales promelas) | US EPA method E03-05 | ECHA |
| ErC50 | 72 h | 275 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |

Aquatic toxicity (chronic)

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

| Endpoint | Exposure time | Value | Species | Method | Source |
|------------------------|---------------|------------|---------------------------------|--------------------|--------|
| LC50 | 9 d | 454 mg/l | daphnia magna | - | ECHA |
| LC50 | 10 d | 1,806 mg/l | Ceriodaphnia dubia (water flea) | - | ECHA |
| NOEC | 10 d | 2 mg/l | Ceriodaphnia dubia (water flea) | - | ECHA |
| NOEC | 120 h | 250 mg/l | zebra fish (Danio rerio) | OECD Guideline 212 | ECHA |
| growth rate (ErCx) 10% | 3 d | 11.5 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |
| growth rate (ErCx) 10% | 4 d | 86 mg/l | algae (Chlorella vulgaris) | OECD Guideline 201 | ECHA |

12.2 Persistence and degradability

Biodegradation

The substance is readily biodegradable.

Ethanol

| Process of degradability | | | | |
|--------------------------|------------------|------|--------|--------|
| Process | Degradation rate | Time | Method | Source |
| oxygen depletion | ~84 % | 20 d | - | ECHA |

Persistence

No data available.

12.3 Bioaccumulative potential

n-octanol/water (log KOW) -0.35 (pH value: 7.4, 24 °C)
(ECHA)

12.4 Mobility in soil

Henry's law constant 0.461 Pa m³/mol at 25 °C
(ECHA)

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.
Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

Ethanol

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-------------|--------|
| ADR/RID | UN1170 |
| ADR/RID/ADN | UN1170 |
| IMDG-Code | UN1170 |
| ICAO-TI | UN1170 |

14.2 UN proper shipping name

| | |
|-------------|---------|
| ADR/RID | ETHANOL |
| ADR/RID/ADN | ETHANOL |
| IMDG-Code | ETHANOL |
| ICAO-TI | Ethanol |

14.3 Transport hazard class(es)

| | |
|-------------|---|
| ADR/RID | 3 |
| ADR/RID/ADN | 3 |
| IMDG-Code | 3 |
| ICAO-TI | 3 |

14.4 Packing group

| | |
|-------------|----|
| ADR/RID | II |
| ADR/RID/ADN | II |
| IMDG-Code | II |
| ICAO-TI | II |

14.5 Environmental hazards

-

14.6 Special precautions for user

-

14.7 Maritime transport in bulk according to IMO instruments


-

14.8 Information for each of the UN Model Regulations


**Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
Additional information Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) Additional information**

| | |
|---------------------------------------|-------------------------------|
| Particulars in the transport document | UN1170, ETHANOL, 3, II, (D/E) |
| Classification code | F1 |


Ethanol

| | |
|---|----------|
| Danger label(s) | 3 |
|  | |
| Special provisions (SP) | 144, 601 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| Transport category (TC) | 2 |
| Tunnel restriction code (TRC) | D/E |
| Hazard identification No | 33 |
| Emergency Action Code | 2YE |

International Maritime Dangerous Goods Code (IMDG) Additional information

| | |
|--|----------|
| Marine pollutant | - |
| Danger label(s) | 3 |
|  | |
| Special provisions (SP) | 144 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| EmS | F-E, S-D |
| Stowage category | A |

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

| | |
|---|---------------|
| Danger label(s) | 3 |
|  | |
| Special provisions (SP) | A3, A58, A180 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Not listed.

Ethanol

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|---------------------------------------|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| P5c | flammable liquids (cat. 2, 3) | 5,000 50,000 | 51) |

Notation

51) flammable liquids, categories 2 or 3 not covered by P5a and P5b

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

Not listed.

Regulation on the marketing and use of explosives precursors

Not listed.

Regulation on drug precursors

Not listed.

Regulation on substances that deplete the ozone layer (ODS)

Not listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

Not listed.

Regulation on persistent organic pollutants (POP)

Not listed.

National regulations (GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|--------|---------------------------|
| Name of substance | Name acc. to inventory | CAS No | Conditions of restriction |
| ethanol | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | - | R3 |
| ethanol | flammable / pyrophoric | - | R40 |

Legend

R3 1. Shall not be used in:
— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,

Ethanol

Legend

- tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
 - 2. Articles not complying with paragraph 1 shall not be placed on the market.
 - 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
 - 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the British Standard Specification on Decorative oil lamps (BS EN 14059) adopted by the British Standards Institute.
 - 5. Without prejudice to the implementation of other legislation relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010 'Just a sip of lamp oil'
 - or even sucking the wick of lamps
 - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life-threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
 - 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the Agency.
- R40
- 1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopie' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 - 2. Without prejudice to the application of other legislation on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
'For professional users only'.
 - 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (***) .
 - 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.
- (***) OJ L 147, 9.6.1975, p. 40.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

Ethanol

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|---|--|
| 1.2 | Relevant identified uses: Laboratory chemical | Relevant identified uses: Laboratory chemical In vitro diagnostics |
| 1.3 | e-mail (competent person): sdb@csb-online.de Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. | e-mail (competent person): sdb@csb-compliance.com Please do not use this e-mail address to ask for the latest safety data sheet. For this purpose contact KURABO INDUSTRIES LTD. |
| 2.2 | - | Precautionary statements: change in the listing (table) |
| 2.2 | - | Derogations from labelling requirements |
| 2.2 | - | Labelling of packages where the contents do not exceed 125 ml |
| 2.2 | - | Signal word: danger |
| 2.2 | - | Pictograms: change in the listing (table) |
| 2.2 | - | Hazard statements: change in the listing (table) |
| 8.1 | - | Relevant DNELs and other threshold levels: change in the listing (table) |
| 8.1 | - | Relevant PNECs and other threshold levels: change in the listing (table) |
| 8.2 | Eye/face protection: Wear eye/face protection. | Eye/face protection: Wear eye/face protection. (EN 166). |
| 8.2 | Respiratory protection: In case of inadequate ventilation wear respiratory protection. | Respiratory protection: In case of inadequate ventilation wear respiratory protection. (EN 136, EN 140, EN 14387, EN 143, EN 149). |
| 14.1 | - | ADR/RID/ADN: UN1170 |
| 14.2 | - | ADR/RID/ADN: ETHANOL |
| 14.3 | - | ADR/RID/ADN: 3 |
| 14.4 | - | ADR/RID/ADN: II |

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| Section | Former entry (text/value) | Actual entry (text/value) |
|---------|--|---|
| 15.1 | Restrictions according to REACH, Annex XVII | Restrictions according to REACH, Annex XVII: Not listed. |
| 15.1 | - | Restrictions according to REACH, Annex XVII: change in the listing (table) |
| 15.1 | List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list: Not listed. | - |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ADR/RID/ADN | Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN) |
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| GB CLP | The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended) |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |

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| Abbr. | Descriptions of used abbreviations |
|-----------|--|
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| M-factor | Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present |
| NLP | No-Longer Polymer |
| NOEC | No Observed Effect Concentration |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
 Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
 International Maritime Dangerous Goods Code (IMDG).
 Dangerous Goods Regulations (DGR) for the air transport (IATA).

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List of relevant phrases (code and full text as stated in section 2 and 3)

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

Responsible for the safety data sheet

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This SDS has been compiled and is solely intended for this product.