

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Trade name : Firegel
Revision date : 21.01.2019 Version (Revision) : 3.0.3 (3.0.2)
Print date : 23-01-2019

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

1.1 Product identifier

Firegel (140040)

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

Relevant identified uses

Fuel for gel burners and braziers. Consumer uses: Private households (= general public = consumers)

Uses advised against

This product should not be used for purposes other than the applications referred to above.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

höfats GmbH

Street: Albert Einstein Straße 6

Postal code/city: 87437 Kempten

Telephone : +49 831 98 90 94 60

Information contact: E-Mail: info@hoe fats.com

1.4 Emergency telephone number

Members of the public seeking specific information on poisons should contact: In England and Wales: NHS 111 - dial 111, in Scotland: NHS 24 - dial 111 Ireland +353 (0)1 8092566 or +353 (0)1 8379964 National Poisons Information Centre

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

EEye Irrit. 2 ; H319 - Serious eye damage/eye irritation : Category 2 ; Causes serious eye irritation.

Flam. Liq. 2 ; H225 - Flammable liquids : Category 2 ; Highly flammable liquid and vapour.

2.2 Label elements

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

Hazard pictograms



Flame (GHS02) · Exclamation mark (GHS07)

Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

P337+P313 If eye irritation persists: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

2.3 Other hazards

This material can accumulate static charge by flow or agitation and can be ignited by static discharge. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Irritating to respiratory system and skin.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

ETHANOL ; REACH registration No. : 01-2119457610-43 ; EC No. : 200-578-6; CAS No. : 64-17-5

Weight fraction : ≥ 25 - < 75 %

Classification 1272/2008 [CLP] : Flam. Liq. 2 ; H225 Eye Irrit. 2 ; H319

PROPAN-2-OL ; REACH registration No. : 01-2119457558-25 ; EC No. : 200-661-7; CAS No. : 67-63-0

Weight fraction : ≥ 10 - < 20 %

Classification 1272/2008 [CLP] : Flam. Liq. 2 ; H225 Eye Irrit. 2 ; H319 STOT SE 3 ; H336

This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH

None

This mixture contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH

None

Additional information

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Observe risk of aspiration if vomiting occurs. If unconscious place in recovery position and seek medical advice. If breathing is irregular or stopped, administer artificial respiration. Remove casualty to fresh air and keep warm and at rest.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. In all cases of doubt, or when symptoms persist, seek medical attention.

In case of skin contact

Wash immediately with: Water In all cases of doubt, or when symptoms persist, seek medical attention. Change contaminated, saturated clothing. Wash contaminated clothing prior to re-use.

After eye contact

Rinse immediately carefully and thoroughly with eye-bath or water. In all cases of doubt, or when symptoms persist, seek medical attention.

After ingestion

Rinse mouth thoroughly with water. Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

The following symptoms may occur: Headache Dizziness Nausea Diminished responsiveness Danger of irritation to eyes, nose, throat and the air passages. depression of central nervous system Cardiac arrhythmias Drowsiness Vomiting Dilated pupils

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water mist alcohol resistant foam BC-powder Carbon dioxide [CO₂]

Unsuitable extinguishing media

Full water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Carbon monoxide Carbon dioxide [CO₂]

5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective

clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Be aware that gases can spread at ground level (heavier than air) and pay attention to the wind direction. Remove all sources of ignition. Use only antistatically equipped (spark-free) tools.

For non-emergency personnel

Protective equipment

Use personal protection equipment. Wear closed protection glasses. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

6.2 Environmental precautions

Make sure spills can be contained, e.g. in sump pallets or kerbed areas. Use foam on spills to minimise vapours.

6.3 Methods and material for containment and cleaning up

For cleaning up

Suitable material for taking up: Sand Kieselguhr Limestone powder Collect in closed and suitable containers for disposal. Delivery to an approved waste disposal company. The contaminated area should be cleaned up immediately with: Water

6.4 Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage



7.1 Precautions for safe handling

Protective measures

Measures to prevent fire

Use only antistatically equipped (spark-free) tools. Provide earthing of containers, equipment, pumps and ventilation facilities. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Measures to prevent aerosol and dust generation

During filling, metering and sampling should be used if possible: Closed devices

Environmental precautions

Do not empty into drains.

Specific requirements or handling rules

Remove contaminated, saturated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Protect against direct sunlight. Keep container tightly closed in a cool, well-ventilated place. Ensure adequate ventilation of the storage area. Suitable container/equipment material: Stainless steel Aluminium Iron. Copper Glass Unsuitable container/equipment material: No data available

Hints on joint storage

Keep away from

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Oxidizing agent

7.3 Specific end use(s)

Fuel for gel burners and braziers.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

ETHANOL ; CAS No. : 64-17-5

Limit value type (country of origin) : Exposure Limit (8h) (NL)

Limit value : 260 mg/m³ / 136 ppm

Remark : H

Version : 01-01-2007

Limit value type (country of origin) : Exposure Limit (15min) (NL)

Limit value : 1900 mg/m³ / 992 ppm

Remark : H

Version : 01-01-2007

PROPAN-2-OL ; CAS No. : 67-63-0

Limit value type (country of origin) : Exposure Limit (8h) (NL)

Limit value : 200 ppm

Version :

Limit value type (country of origin) : Exposure Limit (15min) (NL)

Limit value : 400 ppm

Version :

8.2 Exposure controls

Appropriate engineering controls

Use only in well-ventilated areas. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Provide earthing of containers, equipment, pumps and ventilation facilities. Use only antistatically equipped (spark-free) tools. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

Personal protection equipment



Eye/face protection



Suitable eye protection

Eye glasses with side protection

Skin protection

Hand protection



Suitable gloves type : The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material : Butyl caoutchouc (butyl rubber) Tetrafluoroethylene

Unsuitable material : NR (natural rubber, natural latex) PVA (Polyvinyl alcohol) PVC (Polyvinyl chloride)

Required properties : liquid-tight.

Remark : DIN-/EN-Norms DIN EN 420 DIN EN 374

Body protection

Protective clothing. Chemical resistant safety shoes

Remark : Immediately remove any contaminated clothing, shoes or stockings. Wash contaminated clothing prior to re-use.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Suitable respiratory protection apparatus Full-/half-/quarter-face masks (DIN EN 136/140) Filtering device (full mask or mouthpiece) with filter: A

General health and safety measures

Wash hands before breaks and after work.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Gel

Colour: yellow

Odour: Alcohol

Safety relevant basis data

Melting point/melting range : No data available

Freezing point : (1013 hPa) No data available

Initial boiling point and boiling range : (1013 hPa) No data available

Decomposition temperature : No data available

Flash point : 13 - 16 °C

Ignition temperature : No data available

Lower explosion limit : No data available

Upper explosion limit : No data available

Vapour pressure : (20 °C) No data available

Evaporation rate : No data available

Density : (15 °C) 0,84 - 0,87 g/cm³

Water solubility : (20 °C) No data available

pH : No data available

log P O/W : No data available

Viscosity : (20 °C) No data available

Relative vapour density : (20 °C) No data available

Flammable gases : No data available.

Oxidising liquids : Not oxidising.

Explosive properties : Not applicable.

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

Be aware that gases can spread at ground level (heavier than air) and pay attention to the wind direction. This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment).

10.2 Chemical stability

Stable under normal conditions of use

10.3 Possibility of hazardous reactions

Oxidising agent, strong. Violent reaction with: Strong acid

10.4 Conditions to avoid

This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment). Keep away from sources of ignition - No smoking. Use only antistatically equipped (spark-free) tools.

10.5 Incompatible materials

Oxidizing agent.

10.6 Hazardous decomposition products

Carbon monoxide Carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity

| | |
|------------------|--|
| Parameter : | LD50 (ETHANOL ; CAS No. : 64-17-5) |
| Exposure route : | Oral |
| Species : | Rat |
| Effective dose : | 10470 mg/kg bw |
| Method : | OECD 401 |
| Parameter : | LD50 (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Exposure route : | Oral |
| Species : | Rat |
| Effective dose : | 5840 mg/kg |
| Test result : | Minimally Toxic. |
| Method : | OECD 401 |

Acute dermal toxicity

| | |
|------------------|--|
| Parameter : | LD50 (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Exposure route : | Dermal |
| Species : | Rabbit |
| Effective dose : | 13900 mg/kg |
| Test result : | Minimally Toxic. |
| Method : | OECD 402 |

Acute inhalation toxicity

| | |
|------------------|--------------------------------------|
| Parameter : | LC50 (ETHANOL ; CAS No. : 64-17-5) |
| Exposure route : | Inhalation |
| Species : | Rat |
| Effective dose : | 124,7 mg/l |

| | |
|------------------|--|
| Exposure time : | 4 h |
| Method : | OECD 403 |
| Parameter : | LC50 (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Exposure route : | Inhalation |
| Species : | Rat |
| Effective dose : | > 25000 mg/m3 |
| Exposure time : | 6 h |
| Test result : | Minimally Toxic. |
| Method : | OECD 403 |

Irritant and corrosive effects

Primary irritation to the skin

| | |
|-----------------|--|
| Parameter : | Primary irritation to the skin (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Rabbit |
| Exposure time : | 24 h |
| Result : | Not an irritant |
| Method : | OECD 404 |
| Result : | Not an irritant. |

Irritation to eyes

| | |
|-----------------|--|
| Parameter : | Irritation to eyes (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Rabbit |
| Exposure time : | 14 day |
| Result : | Irritant |
| Method : | OECD 405 |
| Parameter : | Irritation to eyes (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Result : | Causes serious eye irritation |
| Method : | OECD 405 |
| Result : | Causes serious eye irritation. |

Sensitisation

In case of skin contact

| | |
|-------------|--|
| Parameter : | Skin sensitisation (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Mouse |
| Result : | Not sensitising. |
| Method : | OECD 429 |

In case of inhalation

| | |
|-------------|--|
| Parameter : | Sensitisation to the respiratory tract (ETHANOL ; CAS No. : 64-17-5) |
| Result : | Not sensitising. |

Repeated dose toxicity (subacute, subchronic, chronic)

Subacute oral toxicity

| | |
|------------------|--|
| Parameter : | LOAEL(C) (ETHANOL ; CAS No. : 64-17-5) |
| Exposure route : | Oral |
| Species : | Rat |
| Effective dose : | 3160 mg/kg |
| Exposure time : | 98 day |
| Method : | OECD 408 |

Subacute inhalation toxicity

| | |
|------------------|---------------------------------------|
| Parameter : | LOAEC (ETHANOL ; CAS No. : 64-17-5) |
| Exposure route : | Inhalation |
| Species : | Rat |

Effective dose : 1,3 mg/l

Additional information

Specific effects: Frequently or prolonged contact with skin may cause dermal irritation. Gastrointestinal complaints Causes damage to liver through prolonged or repeated exposure if swallowed. May cause damage to heart through prolonged or repeated exposure if swallowed. Ingestion causes nausea, weakness and central nervous system effects.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

Parameter : NOAEL(C) (ETHANOL ; CAS No. : 64-17-5)
Exposure route : Oral
Species : Rat
Effective dose : > 3000 Mg/kg bw/day
Exposure time : 728 day
Test result : Negative.
Method : OECD 451
Parameter : NOAEC (ETHANOL ; CAS No. : 64-17-5)
Exposure route : Inhalation
Species : Rat
Effective dose : >= 1,3 ppm
Exposure time : 728
Test result : Negative.
Method : OECD 453

Assessment/classification

This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Germ cell mutagenicity

In vitro mutagenicity

Parameter : Gene-mutations mammalian cells (ETHANOL ; CAS No. : 64-17-5)
Species : Mouse lymphoma cells
Test result : Negative.
Method : OECD 476

In vivo mutagenicity

Parameter : Chromosomal aberrations (ETHANOL ; CAS No. : 64-17-5)
Exposure route : Oral
Species : Mouse
Exposure time : 5 day
Test result : Negative.
Method : OECD 478

Assessment/classification

This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Reproductive toxicity

Adverse effects on sexual function and fertility

Parameter : NOAEL(C) (ETHANOL ; CAS No. : 64-17-5)
Exposure route : Oral
Species : Mouse
Effective dose : 20700 mg/kg
Exposure time : 118 day
Test result : Negative.
Method : OECD 416

Adverse effects on developmental toxicity

Parameter : NOAEL(C) (ETHANOL ; CAS No. : 64-17-5)
Exposure route : Inhalation
Species : Rat
Effective dose : >= 20000 ppm
Exposure time : 20 day
Test result : Negative.
Method : OECD 414

Assessment/classification

This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

SECTION 12: Ecological information

12.1 Toxicity

harmless to aquatic organisms up to the tested concentration

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter : LC50 (ETHANOL ; CAS No. : 64-17-5)
Species : Pimephales promelas (fathead minnow)
Effective dose : 15300 mg/l
Exposure time : 96 h
Evaluation : Harmless to fish up to the concentration tested.
Parameter : LC50 (PROPAN-2-OL ; CAS No. : 67-63-0)
Species : Pimephales promelas (fathead minnow)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 9640 mg/l
Exposure time : 96 h

Chronic (long-term) fish toxicity

Parameter : ChV (ETHANOL ; CAS No. : 64-17-5)
Species : Fish
Effective dose : 245 mg/l
Exposure time : 30 day

Acute (short-term) daphnia toxicity

Parameter : LC50 (ETHANOL ; CAS No. : 64-17-5)
Species : Ceriodaphnia dubia
Effective dose : 5012 mg/l
Exposure time : 48 h
Evaluation : Harmless to daphnia up to the tested concentration.
Parameter : LC50 (PROPAN-2-OL ; CAS No. : 67-63-0)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 9714 mg/l
Exposure time : 24 h

Chronic (long-term) daphnia toxicity

Parameter : NOEC (ETHANOL ; CAS No. : 64-17-5)
Species : Daphnia magna (Big water flea)
Effective dose : 9,6 mg/l
Exposure time : 9 day
Evaluation : Harmless to daphnia up to the tested concentration.

Acute (short-term) algae toxicity

| | |
|------------------------|---|
| Parameter : | EC50 (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Chlorella vulgaris |
| Effective dose : | 275 mg/l |
| Exposure time : | 3 day |
| Evaluation : | Harmless to algae up to the concentration tested. |
| Method : | OECD 201 |
| Parameter : | LOEC (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Species : | Algae |
| Evaluation parameter : | Acute (short-term) algae toxicity |
| Effective dose : | 1000 mg/l |
| Exposure time : | 8 day |

Bacteria toxicity

| | |
|------------------|--------------------------------------|
| Parameter : | EC50 (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Paramecium caudatum |
| Effective dose : | 9,6 mg/l |
| Exposure time : | 9 day |

12.2 Persistence and degradability

Abiotic degradation

Photo-chemical elimination

| | |
|------------------|--|
| Parameter : | Photo-chemical elimination (ETHANOL ; CAS No. : 64-17-5) |
| Species : | Photo-chemical elimination |
| Effective dose : | 500000 cm3 |
| Exposure time : | 40 h |

Biodegradation

| | |
|------------------|--|
| Parameter : | Biodegradation (ETHANOL ; CAS No. : 64-17-5) |
| Inoculum : | Degree of elimination |
| Effective dose : | 84 % |
| Exposure time : | 20 day |
| Evaluation : | Biodegradable. |
| Parameter : | Biodegradation (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Inoculum : | Degree of elimination |
| Effective dose : | 53 % |
| Exposure time : | 5 day |
| Evaluation : | Biodegradable. |

12.3 Bioaccumulative potential

| | |
|-----------------|---|
| Parameter : | Bioconcentration factor (BCF) (ETHANOL ; CAS No. : 64-17-5) Cyprinus carpio (Common Carp) |
| Concentration : | 1 - 4,5 72 h |
| Parameter : | Partition coefficient n-octanol /water (log P O/W) (ETHANOL ; CAS No. : 64-17-5) |
| Concentration : | -0,35 |
| Parameter : | Partition coefficient n-octanol /water (log P O/W) (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Concentration : | 0,05 |

12.4 Mobility in soil

Adsorption/Desorption

| | |
|------------------|---|
| Parameter : | Soil (ETHANOL ; CAS No. : 64-17-5) |
| Effective dose : | 13,7 % |
| Parameter : | Water (ETHANOL ; CAS No. : 64-17-5) |
| Effective dose : | 33,1 % |
| Parameter : | Air (ETHANOL ; CAS No. : 64-17-5) |
| Effective dose : | 53,2 % |
| Parameter : | Sediment (ETHANOL ; CAS No. : 64-17-5) |
| Effective dose : | 0,1 % |
| Parameter : | Log KOC (PROPAN-2-OL ; CAS No. : 67-63-0) |
| Effective dose : | 1,5 |

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Other adverse effects

None

12.7 Additional ecotoxicological information

None

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Delivery to an approved waste disposal company. Contaminated packages must be completely emptied and can be re-used following proper cleaning. Handle contaminated packages in the same way as the substance itself.

Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code : 15 01 02* plastic packaging Waste code : 15 01 10* packaging containing residues of or contaminated by dangerous substances
Waste code : 13 07 03* other fuels (including mixtures)

SECTION 14: Transport information

14.1 UN number

UN 1987

14.2 UN proper shipping name

UN proper shipping name

Land transport (ADR/RID)

ALCOHOLS, N.O.S. (ETHANOL · ISOPROPANOL)

Sea transport (IMDG)

ALCOHOLS, N.O.S. (ETHANOL · ISOPROPANOL)

Air transport (ICAO-TI / IATA-DGR)

ALCOHOLS, N.O.S. (ETHANOL · ISOPROPANOL)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) :3

Classification code : F1

Hazard identification number [Kemler No.] : 33

Tunnel restriction code : D/E

Special provisions : 640D · LQ 1 L · E 2

Hazard label(s) : 3

Sea transport (IMDG)

Class(es) : 3

EmS-No. : F-E / S-D

Special provisions : LQ 1 L · E 2

Hazard label(s) : 3

Air transport (ICAO-TI / IATA-DGR)

Class(es) : 3

Special provisions : E 2

Hazard label(s) : 3

14.4 Packing group

II

14.5 Environmental hazards

Land transport (ADR/RID) : No

Sea transport (IMDG) : No

Air transport (ICAO-TI / IATA-DGR) : No

14.6 Special precautions for user

None

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

not applicable

SECTION 15: Regulatory information

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

This chemical is a VOC according to 99/13/EC. This chemical is a VOC according to 2004/42/EC.

EU legislation

Other regulations (EU)

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

The product is classified and labelled according to EC directives or corresponding national laws.

National regulations

Water hazard class (WGK)

slightly hazardous to water (WGK 1) Classification according to VwVwS, Annex 4.

Additional information

ICPE code: 4331

15.2 Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

02. Label elements · 03. Hazardous ingredients · 08. Occupational exposure limit values · 08. DNEL/DMEL · 08. PNEC

16.2 Abbreviations and acronyms

a.i. = Active ingredient

ACGIH = American Conference of Governmental Industrial Hygienists (US)

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AFFF = Aqueous Film Forming Foam

AISE = International Association for Soaps, Detergents and Maintenance Products (joint project of AISE and CEFIC)

AOAC = AOAC International (formerly Association of Official Analytical Chemists)

aq. = Aqueous

ASTM = American Society of Testing and Materials (US)

atm = Atmosphere(s)

B.V. = Beperkt Vennootschap (Limited)

BCF = Bioconcentration Factor

bp = Boiling point at stated pressure

bw = Body weight

ca = (Circa) about

CAS No = Chemical Abstracts Service Number (see ACS - American Chemical Society)

CEFIC = European Chemical Industry Council (established 1972)

CIPAC = Collaborative International Pesticides Analytical Council

CLP = REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

Conc = Concentration

cP = CentiPoise

cSt = Centistokes

d = Day(s)

DIN = Deutsches Institut für Normung e.V.

DNEL = Derived No-Effect Level

DT50 = Time for 50% loss; half-life

EbC50 = Median effective concentration (biomass, e.g. of algae)

EC = European Community; European Commission

EC50 = Median effective concentration

EINECS = European Inventory of Existing Commercial Chemical Substances (EU, outdated, now replaced by EC Number)

ELINCS = European List of Notified (New) Chemicals (see Tab 7, Background - Guide)

ErC50 = Median effective concentration (growth rate, e.g. of algae)

EU = European Union

EWC = European Waste Catalogue

FAO = Food and Agriculture Organization (United Nations)

GIFAP = Groupement International des Associations Nationales de Fabricants de Produits Agrochimiques (now CropLife International) h = Hour(s)

hPa = HectoPascal (unit of pressure)

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association IC50 = Concentration that produces 50% inhibition

IMDG Code = International Maritime Dangerous Goods Code

IMO = International Maritime Organization

ISO = International Organization for Standardization

IUCLID = International Uniform Chemical Information Database

IUPAC = International Union of Pure and Applied Chemistry

kg = Kilogram

Kow = Distribution coefficient between n-octanol and water

kPa = KiloPascal (unit of pressure)

LC50 = Concentration required to kill 50% of test organisms

LD50 = Dose required to kill 50% of test organisms

LEL = Lower Explosive Limit/Lower Explosion Limit
 LOAEL = Lowest observed adverse effect level
 mg = Milligram
 min = Minute(s)
 ml = Milliliter
 mmHg = Pressure equivalent to 1 mm of mercury (133.3 Pa)
 mp = Melting point
 MRL = Maximum Residue Limit
 MSDS = Material Safety Data Sheet
 n.o.s. = Not Otherwise Specified
 NIOSH = National Institute for Occupational Safety and Health (US)
 NOAEL = No Observed Adverse Effect Level
 NOEC = No observed effect concentration
 NOEL = No Observable Effect Level
 NOx = Oxides of Nitrogen
 OECD = Organization for Economic Cooperation and Development
 OEL = Occupational Exposure Limits
 Pa = Pascal (unit of pressure)
 PBT = Persistent, Bioaccumulative or Toxic
 pH = $-\log_{10}$ hydrogen ion concentration
 pKa = $-\log_{10}$ acid dissociation constant
 PNEC = Previsible Non Effect Concentration
 POPs = Persistent Organic Pollutants
 ppb = Parts per billion
 PPE = Personal Protection Equipment
 ppm = Parts per million
 ppt = Parts per trillion
 PVC = Polyvinyl Chloride
 QSAR = Quantitative Structure-Activity Relationship
 REACH = Registration, Evaluation and Authorization of CHemicals (EU, see NCP)
 SI = International System of Units
 STEL = Short-Term Exposure Limit
 tech. = Technical grade
 TSCA = Toxic Substances Control Act (US)
 TWA = Time-Weighted Average
 vPvB = Very Persistent and Very Bioaccumulative
 WHO = World Health Organization = OMS
 y = Year(s)

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

16.3 Key literature references and sources for data

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

No information available.

16.5 Relevant H- and EUH-phrases (Number and full text)

H225 Highly flammable liquid and vapour.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.

16.6 Training advice

None

16.7 Additional information

None