Glyvak

Safety Data Sheet

According to REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.
Issue date: 5/3/2024 Revision date: 5/3/2024 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : Glyvak
Product code : Formula : LB-GLYVAK/5
Part No: ESP-GVAK Series

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

1.2.1. Relevant identified uses

Main use category : Industrial use
Use of the substance/mixture : Cleaning agent

1.2.2. Uses advised against

Restrictions on use : None known

1.3. Details of the supplier of the safety data sheet

Manufacturer
Celeste Industries Corporation
8007 Industrial Park Road
Easton, Maryland 21601 USA
T 1-410-822-5775
info@celestecorp.com, www.celestecorp.com

Distributor
Celeste Industries
400 Thames Valley Park Drive
RG6 1PT Reading, Berkshire
England
T +44 (0) 1189 637930

1.4. Emergency telephone number

Emergency number : For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident call CHEMTREC (24 hours) within USA and CANADA: 1-800-424-9300;
Outside USA and Canada (collect call accepted): 1-703-527-3883

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to GB CLP (SI 2019:720 as amended)

Skin corrosion/irritation, Category 1, Sub-Category 1C H314
Serious eye damage/eye irritation, Category 1 H318
EUH208 - Contains Dibutyl thiourea. May produce an allergic reaction.
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to GB CLP (SI 2019:720 as amended)

Hazard pictograms (GB CLP) :

GHS05

Signal word (GB CLP) : Danger
Contains : Formic acid; L-Lactic acid; Benzenesulfonic acid, C10-16-alkyl derivatives; Dodecylbenzenesulfonic acid; Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives
Hazard statements (GB CLP) : H314 - Causes severe skin burns and eye damage.
Precautionary statements (GB CLP) : P260 - Do not breathe dust, fume, gas, mist, vapours or spray.
P280 - Wear protective gloves, protective clothing, eye protection, face protection and hearing protection.
P301+P330+P331+P310 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

		Immediately call a POISON CENTER or doctor. P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. P501 - Dispose of contents and container to a hazardous or special waste collection point, in accordance with local, regional, national and international regulations.
EUH-statements (GB CLP)	:	EUH208 - Contains Dibutyl thiourea. May produce an allergic reaction.
Unknown acute toxicity (GB CLP) - SDS	:	0.25% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral) 0.25% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 2.75% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))
Unknown hazards to the aquatic environment (GB CLP)	:	Contains 0.25 % of components with unknown hazards to the aquatic environment

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of UK REACH regulation, Annex XIII
This substance/mixture does not meet the vPvB criteria of UK REACH regulation, Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of UK REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in GB BPR and GB PPP at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Labelling according to GB CLP (SI 2019:720 as amended)
Formic acid	CAS-No.: 64-18-6 EC-No.: 200-579-1	1 - 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 (ATE=1100 mg/kg bodyweight) Acute Tox. 3 (Inhalation:vapour), H331 (ATE=7.85 mg/l/4h) Skin Corr. 1A, H314 Eye Dam. 1, H318
L-Lactic acid	CAS-No.: 79-33-4 EC-No.: 201-196-2	1 - 5	Skin Corr. 1C, H314 Eye Dam. 1, H318 EUH071
Benzenesulfonic acid, C10-16-alkyl derivatives	CAS-No.: 68584-22-5 EC-No.: 271-528-9	1 - 5	Acute Tox. 4 (Oral), H302 (ATE=775 mg/kg bodyweight) Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Skin Corr. 1C, H314 Eye Dam. 1, H318
Dodecylbenzenesulfonic acid *(Alternate Chemical for CAS-No.: 68584-22-5)*	CAS-No.: 27176-87-0 EC-No.: 248-289-4	1 - 5	Acute Tox. 4 (Oral), H302 (ATE=1260 mg/kg bodyweight) Acute Tox. 3 (Dermal), H311 (ATE=631 mg/kg bodyweight) Skin Corr. 1, H314 Eye Dam. 1, H318

Name	Product identifier	%	Labelling according to GB CLP (SI 2019:720 as amended)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives *(Alternate Chemical for CAS-No.: 68584-22-5)*	CAS-No.: 85536-14-7 EC-No.: 287-494-3	1 - 5	Acute Tox. 4 (Oral), H302 (ATE=1219 mg/kg bodyweight) Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER/doctor.

First-aid measures after skin contact : If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. Never give anything by mouth to an unconscious person.

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

Symptoms/effects after inhalation : Causes burns to the respiratory system.

Symptoms/effects after skin contact : Causes severe skin burns. Symptoms may include redness, pain, blisters.

Symptoms/effects after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

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

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO_2), dry chemical powder, foam. Water fog.

Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Irritating fumes.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.1.1. For non-emergency personnel

Emergency procedures : Do not touch or walk on the spilled product.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Provide adequate ventilation.

Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place. Keep out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original container. Store locked up.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Formic acid (64-18-6)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA)	9.6 mg/m³
WEL TWA (OEL TWA)	5 ppm
WEL STEL (OEL STEL)	28.8 mg/m³ (calculated)
WEL STEL (OEL STEL)	15 ppm (calculated)

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Consult the relevant monitoring standards for the region.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:
Safety eyewear complying with an approved standard such as the European Standard EN166 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Chemical resistant gloves (according to European standard NF ISO 374-1 or equivalent)

8.2.2.3. Respiratory protection

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. SDSs cannot provide detailed and complete respiratory protection guidelines. Selection of respiratory protection must be done by a qualified person who has assessed the work environment.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

Other information:
Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Amber. Light tan.
Odour	:	None.
Odour threshold	:	Not available
Melting point	:	0 °C /32 °F
Freezing point	:	Not available
Boiling point	:	100 °C / 212 °F
Flammability	:	Not flammable
Explosive properties	:	Not explosive.
Oxidising properties	:	Not oxidizing.
Explosive limits	:	Not available
Flash point	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	< 3
Viscosity, kinematic	:	Not available
Solubility	:	Soluble in water.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available

Relative density : 0.95 – 1.05
Relative vapour density at 20°C : Not available
Particle characteristics : Not applicable

Formic acid (64-18-6)	
Boiling point	100.23 °C (at 1013.25 hPa)
Flash point	46.5 °C (closed cup)
Auto-ignition temperature	539 °C
Vapour pressure	170.7 hPa (at 50 °C)

L-Lactic acid (79-33-4)	
Boiling point	> 100 °C

Dodecylbenzenesulfonic acid (27176-87-0)	
Boiling point	204.5 °C
Flash point	149 °C (closed cup)
Auto-ignition temperature	> 300 °C
Vapour pressure	0 mm Hg Temp.: 25 °C Remarks on result: 'other:'

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
Boiling point	189.05 °C Atm. press.: 102,1 kPa
Flash point	196.9 °C (closed cup)

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Irritating fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified. (Based on available data, the classification criteria are not met.)
Acute toxicity (dermal) : Not classified. (Based on available data, the classification criteria are not met.)
Acute toxicity (inhalation) : Not classified. (Based on available data, the classification criteria are not met.)

Formic acid (64-18-6)	
LD50 oral rat	1100 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	7.85 mg/l/4h
ATE GB CLP (oral)	1100 mg/kg bodyweight
ATE GB CLP (vapours)	7.85 mg/l/4h
ATE GB CLP (dust, mist)	7.85 mg/l/4h

L-Lactic acid (79-33-4)	
LD50 oral rat	3730 mg/kg (Source: IUCLID)
LD50 dermal rabbit	> 2000 mg/kg (Source: NICNAS)
LC50 inhalation rat	> 7.94 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
ATE GB CLP (oral)	3730 mg/kg bodyweight

Benzenesulfonic acid, C10-16-alkyl derivatives (68584-22-5)	
LD50 oral rat	775 mg/kg (Source: CHEMVIEW)
LD50 dermal rabbit	2000 mg/kg (Source: CHEMVIEW)
LC50 inhalation rat	> 1.9 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
ATE GB CLP (oral)	775 mg/kg bodyweight
ATE GB CLP (dermal)	1100 mg/kg bodyweight

Dodecylbenzenesulfonic acid (27176-87-0)	
LD50 oral rat	1260 mg/kg (Source: JAPAN_GHS)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
LD50 dermal rabbit	631 – 1000 mg/kg (Source: CHEMVIEW)
LC50 inhalation rat	0.31 mg/l air Animal: rat, Animal sex: male, Remarks on results: other:
ATE GB CLP (oral)	1260 mg/kg bodyweight
ATE GB CLP (dermal)	631 mg/kg bodyweight

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
LD50 oral rat	1219 mg/kg (Source: IUCLID)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE GB CLP (oral)	1219 mg/kg bodyweight

Unknown acute toxicity (GB CLP) - SDS : 0.25% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
0.25% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
2.75% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))

Skin corrosion/irritation : Causes severe skin burns.
pH: < 3
Based on Corrositex data (OECD TG435)

Dodecylbenzenesulfonic acid (27176-87-0)	
pH	< 1 Temp.: 25 °C Remarks on result: 'other:'

Serious eye damage/irritation : Causes serious eye damage.
pH: < 3
Based on Corrositex data (OECD TG435)

Dodecylbenzenesulfonic acid (27176-87-0)	
pH	< 1 Temp.: 25 °C Remarks on result: 'other:'

Respiratory or skin sensitisation : Not classified. (Based on available data, the classification criteria are not met.)
Germ cell mutagenicity : Not classified. (Based on available data, the classification criteria are not met.)
Carcinogenicity : Not classified. (Based on available data, the classification criteria are not met.)

Formic acid (64-18-6)	
NOAEL (chronic, oral, animal/male, 2 years)	400 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)

Reproductive toxicity : Not classified. (Based on available data, the classification criteria are not met.)
STOT-single exposure : Not classified. (Based on available data, the classification criteria are not met.)
STOT-repeated exposure : Not classified. (Based on available data, the classification criteria are not met.)

Formic acid (64-18-6)	
LOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.244 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Benzenesulfonic acid, C10-16-alkyl derivatives (68584-22-5)	
NOAEL (oral, rat, 90 days)	500 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	> 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Dodecylbenzenesulfonic acid (27176-87-0)	
LOAEL (oral, rat, 90 days)	200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
LOAEL (dermal, rat/rabbit, 90 days)	286 mg/kg bodyweight Animal: rat, Animal sex: male
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (dermal, rat/rabbit, 90 days)	< 286 mg/kg bodyweight Animal: rat, Animal sex: male

Aspiration hazard : Not classified. (Based on available data, the classification criteria are not met.)

Dodecylbenzenesulfonic acid (27176-87-0)	
Viscosity, kinematic	905.66 mm²/s

Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
Viscosity, kinematic	1618.868 mm²/s

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1 %

11.2.2. Other information

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.
Unknown hazards to the aquatic environment (GB CLP) : Contains 0.25 % of components with unknown hazards to the aquatic environment
Hazardous to the aquatic environment, short–term (acute) : Not classified. (Based on available data, the classification criteria are not met.)
Hazardous to the aquatic environment, long–term (chronic) : Not classified. (Based on available data, the classification criteria are not met.)

Formic acid (64-18-6)	
LC50 - Fish [1]	130 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	120 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Crustacea [2]	138 – 165.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h - Algae [1]	26.9 mg/l (Species: Desmodesmus subspicatus)
EC50 96h - Algae [1]	25 mg/l (Species: Desmodesmus subspicatus)
LOEC (chronic)	> 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	≥ 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

L-Lactic acid (79-33-4)	
LC50 - Fish [1]	320 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static] Source: IUCLID)
LC50 - Fish [2]	100 – 180 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
EC50 - Crustacea [1]	240 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Crustacea [2]	180 – 320 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

Benzenesulfonic acid, C10-16-alkyl derivatives (68584-22-5)	
LC50 - Fish [1]	3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: IUCLID)
EC50 - Crustacea [1]	2.9 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Dodecylbenzenesulfonic acid (27176-87-0)	
LC50 - Fish [1]	10.8 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
LC50 - Fish [2]	3.5 – 10 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	5.88 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Dodecylbenzenesulfonic acid (27176-87-0)	
EC50 72h - Algae [1]	65.4 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	21 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	29 mg/l (Species: Pseudokirchneriella subcapitata)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
LC50 - Fish [1]	5.6 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [flow-through] Source: IUCLID)
EC50 - Crustacea [1]	5.2 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	36 mg/l (Species: Desmodesmus subspicatus)
NOEC (chronic)	1.18 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

Glyvak	
Persistence and degradability	Not established.
Formic acid (64-18-6)	
Persistence and degradability	Rapidly degradable
L-Lactic acid (79-33-4)	
Persistence and degradability	Rapidly degradable
Benzenesulfonic acid, C10-16-alkyl derivatives (68584-22-5)	
Persistence and degradability	Rapidly degradable
Dodecylbenzenesulfonic acid (27176-87-0)	
Persistence and degradability	Rapidly degradable
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
Persistence and degradability	Rapidly degradable

12.3. Bioaccumulative potential

Glyvak	
Bioaccumulative potential	Not established.
Formic acid (64-18-6)	
BCF - Fish [1]	(0.22 dimensionless)
Partition coefficient n-octanol/water	-1.9 (at 23 °C (at pH 5)
L-Lactic acid (79-33-4)	
Partition coefficient n-octanol/water	-0.54 (at 25 °C)
Benzenesulfonic acid, C10-16-alkyl derivatives (68584-22-5)	
Partition coefficient n-octanol/water	2 (at 23 °C)
Dodecylbenzenesulfonic acid (27176-87-0)	
BCF - Fish [1]	(119 L/kg (whole body w.w.)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivatives (85536-14-7)	
Partition coefficient n-octanol/water	2.2 (at 23 °C (at pH 3.7)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Glyvak
This substance/mixture does not meet the PBT criteria of UK REACH regulation, Annex XIII
This substance/mixture does not meet the vPvB criteria of UK REACH regulation, Annex XIII

12.6. Other adverse effects

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1 %.

Additional information : No other effects known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

14.1. UN number

UN-No. (ADR) : UN1760
UN-No. (IMDG) : UN1760
UN-No. (IATA) : UN1760

14.2. UN proper shipping name

Proper Shipping Name (ADR) : CORROSIVE LIQUID, N.O.S. (L-Lactic acid, formic acid)
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, N.O.S. (L-Lactic acid, formic acid)
Proper Shipping Name (IATA) : Corrosive liquid, n.o.s. (L-Lactic acid, formic acid)

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8
:

IMDG

Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8
:

IATA

Transport hazard class(es) (IATA) : 8
Danger labels (IATA) : 8
:

14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

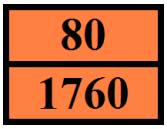
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

Overland transport

Orange plates :



EAC code : 2X

Transport by sea

No data available

Air transport

No data available

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

Explosives Precursors Regulation (2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)
Please see https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. United Kingdom

British National Regulations : Not determined.

UK REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

UK REACH Candidate List (SVHC)

Contains no substance(s) listed on the UK REACH Candidate List

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes (UK):
None.

Abbreviations and acronyms:	
	CLP Abbreviations: °C – Degrees Celsius °F – Degrees Fahrenheit ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road. ASTM: American Society for Testing and Materials ACGIH – American Conference of Governmental Industrial Hygienists ATE – Acute Toxicity Estimate BCF – Bioconcentration Factor BEI – Biological Exposure Index CAS – Chemical Abstracts Service CLP – Regulation (EC) No 1272/2008 on the Classification, Labeling and Packaging of substances and mixtures. CMR – Carcinogen, Mutagen, Reproductive toxin cP – centipoise (unit of dynamic viscosity) cSt – centistokes (unit of kinematic viscosity) DNEL – Derived No-effect Level DMEL – Derived Minimal Effect Level EC50 – Half maximal effective concentration ECHA – European Chemicals Agency EC-No. – European Community number EU – European Union GHS – Globally Harmonized System of Classification and Labelling of Chemicals h – Hours IATA – International Air Transport Association IC50 – Inhibition concentration IDLH – Immediately Dangerous to Life or Health IMDG – International Maritime Dangerous Goods IOELV – Indicative Occupational Exposure Limit Value KIFS – Swedish Chemicals Agency's (Keml's) Code of Statutes kPa – kilopascal Koc – Adsorption Coefficient Kow – Octanol-Water Partition Coefficient LC50 – Median Lethal Concentration LD50 – Median Lethal Dose LOAEL – Lowest Observed Adverse Effect level mg/l – Milligram per liter

Abbreviations and acronyms:	
	mg/kg – Milligram per kilogram mg/m3 – Milligram per cubic meter Min – Minutes NIOSH – National Institute for Occupational Safety and Health NOEC – No Observed Effect Concentration NO(A)EL – No Observed (Adverse) Effect Level N.O.S. – Not Otherwise Specified OEL – Occupational Exposure Limit PBT - Persistent, Bioaccumulative and Toxic PCN – Poison Centre Notification PNEC – Predicted No Effect Concentration ppm – Parts per million PVC – Polyvinyl chloride REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 RID – European Agreement concerning the International Carriage of Dangerous Goods by Rail SDS – Safety Data Sheet STEL – Short Term Exposure Limit STOT – Specific Target Organ Toxicity SVHC – Substance of Very High Concern (CMR, vPvB, PBT) TDI – Tolerable Daily Intake TLV – Threshold Limit Value TWA – Time Weighted Average UFI – Unique Formulation Identifier UN – United Nations vPvB - Very Persistent and Very Bioaccumulative WEL – Workplace Exposure Limit WGK – Wassergefahrdungklasse – German water quality classification

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

Other information : None.

Prepared by : Nexreg Compliance Inc.
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Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
EUH071	Corrosive to the respiratory tract.
EUH208	Contains Dibutyl thiourea. May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.

Full text of H- and EUH-statements:	
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Corr. 1C	Skin corrosion/irritation, Category 1, Sub-Category 1C
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Skin Corr. 1C	H314	On basis of test data
Eye Dam. 1	H318	On basis of test data