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Revision: 25 November 2020 Version number: 1.0

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

1.1 Product identifier

Freebac/Hydrogen Peroxide Solution

Product number: Product No – 8.1625.218.1.

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

Prevention of microbial growth in valves.

Uses advised against: not available.

1.3 Details of the supplier of the safety data sheet

Kohler Mira Ltd,
Cromwell Road,
Cheltenham,
Gloucestershire GL52 5EP
UK
Tel:0800 001 4040; email: ehs@kohlereurope.com.

1.4 Emergency telephone number

Kohler Mira Ltd: 0800 001 4040 (UK office hours).

UK: 111 (public NHS number for less urgent medical problems). Medical professionals can contact the National Poisons Information Service (NPIS): 0344 892 0111.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Eye Dam 1, H318.

See Section 16 'Other information' for full text of the H-statements.

2.2 Label elements

Signal word: Danger

Hazard statements: Causes serious eye damage.

Precautionary statements

- prevention: Wear eye/face protection.
- response: 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.
- storage: None.
- disposal: None.

Supplemental information: None.

2.3 Other hazards

Not available.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures [a,b]

Declarable components	*Conc. (wt%)*	*EC No.*	*CAS No.*	*Reg. No.*	*Classification*
Hydrogen peroxide solution 10%	>90	231-765-0	7722-84-1	NA	Eye Dam 1, H318
Other components					
None					

[a] NA: not available.

[b] See Section 16 'Other information' for full text of the H-statements.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation	If inhalation is suspected, remove exposed person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms, call a doctor.
Skin	Rinse with plenty of water. Call a doctor if irritation or other symptoms occur. Wash contaminated clothing before re-use.
Eye	In case of contact with eyes, irrigate with room-temperature water or eyewash for several minutes, occasionally lifting eyelids. Speed is essential. Remove any contact lenses if easy to do. Continue rinsing. Get immediate medical attention.
Ingestion	If swallowed, rinse mouth thoroughly and give water to drink. Get medical attention. Do not induce vomiting, unless instructed by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed — May cause chemical burns to eye.

4.3 Indication of any immediate medical attention and special treatment needed — Treat symptoms as they occur. Dilution of the product with water will reduce its hazardous properties.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable	Water spray, carbon dioxide, dry chemical powder and alcohol-resistant foam are recommended.
Unsuitable	Not available

5.2 Special hazards arising from the substance or mixture — The product is an aqueous solution, and is not classified as flammable. However, if involved in a fire, product may produce oxygen to intensify fire.

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5.3 Advice for firefighters Remove product from fire or cool with water spray. Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures For large spills, wear personal protection. Keep unauthorised personnel from the spillage area. May cause slip hazard. Follow prescribed procedures for responding to spills and reporting to authorities.

6.2 Environmental precautions Prevent product from entering water courses or drainage system by using bunding or absorption with inert material.

6.3 Methods and material for containment and cleaning up Stop the source of leak or release. Clean up spill as soon as possible.

For small quantities, wipe off with cloth or paper, and wash affected area with water and detergent.

For large quantities, recover by using appropriate techniques such as pumping, or absorption with an inert material such as dry sand. Rinse contaminated surfaces with water.

Collect spill, contaminated materials, and washings in a container for disposal.

6.4 Reference to other sections For recommended personal protective equipment, see Section 8.

For disposal considerations, see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling Avoid contact with skin and eyes. Wear protective clothing as in Section 8. Good general ventilation is recommended. Wash hands after handling.

7.2 Conditions for safe storage, including any incompatibilities Keep containers in a cool, dry place.

7.3 Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

EU limit values	None.
UK limit values	Hydrogen peroxide: WEL: 8 h TWA, 1.4 mg/m^3 (1 ppm); 15 min, 2.8 mg/m^3 (2 ppm).
Monitoring procedure	BS EN 14042:2003; Workplace Atmospheres; Guide for the Application and Use of Procedures for the Assessment of Exposure to Chemical and Biological Agents, or specific national equivalent.
Other: human health (DNELs, DMELs)	Hydrogen peroxide: DNELs: workers, long-term exposure, local effects, inhalation, 1.4 mg/m^3; workers, short-term exposure, local effects, inhalation, 3 mg/m^3.
Other: environmental (PNEC)	Hydrogen peroxide: PNECs: freshwater, 0.013 mg/L; sewage treatment plant, 4.66 mg/L; freshwater sediment, 0.047 mg/kg dry sediment; soil,

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0.002 mg/kg dry soil.

8.2 Exposure controls

Engineering controls	Good general ventilation (5 air exchanges per hour) is recommended for the workplace.
Personal protective equipment	For professional use, the need for personal protective equipment should be based on a workplace risk assessment for the particular use. Avoid skin and eye contact by wearing chemical resistant gloves (eg nitrile rubber, 0.35 mm; PVC, 0.5 mm thickness) and safety goggles. Where more extensive contact may occur, wear protective clothing (eg overalls, boots). Wear respiratory protective equipment if exposure to spray is possible. PPE should be to European (EN) standards, eg gloves EN 420 and 374; eye protection EN 166. Consult PPE manufacturers concerning breakthrough times applicable to your particular use.
Environmental exposure controls	Not available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Colourless liquid
Odour	Faint, stinging
Odour threshold	Not available
pH	Ca. 5
Melting/freezing point	–6 °C
Initial boiling point/range	102 °C
Flash point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable
Flamm. or expl. limits	Not available
Vapour pressure	Hydrogen peroxide (100% w/w) 299 Pa at 25 °C
Vapour density	Not available
Relative density	Ca. 1
Solubilities	Soluble in water
Partition coeff. (log K_{ow})	Not available
Auto-ignition temp.	Not available
Decomposition temp.	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Hydrogen peroxide solutions (40 to 50%) classified as oxidising liquid;

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concentrations below 40% not expected to be classified

9.2 Other information Not available

SECTION 10: Stability and reactivity

10.1 Reactivity Not available.

10.2 Chemical stability Stable under recommended storage conditions. No hazardous polymerisation.

10.3 Possibility of hazardous reactions Concentrated hydrogen peroxide solution is a strong oxidising agent. This 10% solution does not meet the criteria for classification as an oxidising agent.

10.4 Conditions to avoid Avoid storage at high temperatures, or in direct sunlight.

10.5 Incompatible materials Water-reactive substances, reducing agents, combustible materials.

10.6 Hazardous decomposition products Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: Based on available information, the product is not expected to meet the criteria for classification by the oral, dermal or inhalation routes.

Hydrogen peroxide solution 70%: LD_{50} (oral, rat), 1026 (male), 694 (female) mg/kg;

Hydrogen peroxide solution 35%: LD_{50} (dermal, rabbit), > 2000 mg/kg.

Hydrogen peroxide solution 50%: LC_{50} (vapour inhalation, rat, 4 h), > 170 mg/m^3.

Skin corrosion/irritation: Based on available information, the product is not expected to meet the criteria for classification.

Hydrogen peroxide: solutions at concentrations >35% are irritating to the skin.

Serious eye damage/irritation: Based on available information, the product is not expected to meet the criteria for classification.

Hydrogen peroxide: solutions at concentrations of >5% are irritating to the eyes. Solutions at concentrations >8% can cause serious damage to eyes.

Respiratory or skin sensitisation: Based on available information, the product is not expected to meet the criteria for classification.

Hydrogen peroxide: an EU Risk Assessment Report concludes that the substance should not be classified as skin sensitiser.

Germ cell mutagenicity: Based on available information, the product is not expected to meet the criteria for classification.

Carcinogenicity: Based on available information, the product is not expected to meet the criteria for classification.

Reproductive toxicity: Based on available information, the product is not expected to meet the

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	criteria for classification.
STOT-single exposure	Based on available information, the product is not expected to meet the criteria for classification. Hydrogen peroxide: solutions at concentrations >35% are irritating to the respiratory tract.
STOT-repeated exposure	Based on available information, the product is not expected to meet the criteria for classification. Hydrogen peroxide: not systemically available and exhibits only local irritancy.
Aspiration hazard	Based on available information, the product is not expected to meet the criteria for classification.

SECTION 12: Ecological information

12.1 Toxicity	The product is expected to be very toxic to aquatic organisms, and may cause long-lasting effects. Hydrogen peroxide: harmful to aquatic organisms with long-term effects. LC_{50} (fish), 16.4 mg/L; EC_{50} (Daphnia, 48 h), 2.4 mg/L; Daphnia (21 d reproduction test) NOEC, 0.63 mg/L; NOEC (algae), 0.63 mg/L.
12.2 Persistence and degradability	Hydrogen peroxide: readily biodegradable (half-life typically of the order of some hours.).
12.3 Bioaccumulative potential	Hydrogen peroxide: reactive and short-lived substance and no bioaccumulation is expected.
12.4 Mobility in soil	Hydrogen peroxide: estimated K_{oc} = 1.58 L/kg indicating no potential for adsorption to soil.
12.5 Results of PBT and vPvB assessment	Hydrogen peroxide: does not meet the criteria for PBT or vPvB.
12.6 Other adverse effects	Not available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	The recommended disposal for industrial or professional use is landfill. Small amounts of product may be suitable for dilution and disposal via the drains or in landfill. Product neutralisation with alkali will reduce environmental hazard. Disposal must be in accordance with current national and local regulations. For professional use, chemical residues generally count as special waste, and their disposal may be regulated in the EC member countries through corresponding laws and regulations. General EU requirements are given in the Waste Framework Directive (75/442/EEC) and the Hazardous Waste Directive (91/689/EEC).

SECTION 14: Transport information

14.1 UN Number	2984
14.2 UN proper shipping name	HYDROGEN PEROXIDE 10% AQUEOUS SOLUTION

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14.3 Transport hazard class(es)	5.1.
14.4 Packing group	III.
14.5 Environmental hazards	Not classified as marine pollutant/environmentally hazardous.
14.6 Special precautions for user	Not available
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	*UK*: UK: Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended (also implementing 90/394/EEC on carcinogens at work). COSHH Essentials: Easy Steps to Control Chemicals; HSE Books 2003 (also available on the HSE web site). Workplace Exposure Limits EH40/2005 (Third edition, 2018); Health and Safety Executive.
15.2 Chemical safety assessment	Not available.

SECTION 16: Other information

Revisions	This SDS is the first version in EU format.
Abbreviations	DNEL, derived no-effect level; DMEL, derived minimum effect level; EC, effect concentration; LC, lethal concentration; LD, lethal dose; NOEC, No-observed-effect-concentration; PBT, persistent, bioaccumulative, and toxic; STOT RE, specific organ toxicity repeated exposure; STOT SE, specific target organ toxicity single exposure; vPvB, very persistent, very bioaccumulative; WEL, UK workplace exposure limit.
References	Search for chemicals; available at the European Chemicals Agency (ECHA) website: http://echa.europa.eu/. GESTIS Substance Database; Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA).
Basis of classification	The mixture is self-classified on the basis of available information on the ingredients.
List of hazard statements	H318: Causes serious eye damage.