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SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

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

1.1 Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
558049	BD Phosflow™ Lyse/Fix Buffer 5X	No data available

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

Identified uses: Scientific and industrial laboratory use. For research use only.
Uses advised against: Not for use in diagnostic or therapeutic procedures.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Becton, Dickinson and Company, BD Biosciences
155 North McCarthy Boulevard
95035 Milpitas, California
USA

Telephone: 1 877 232 8995 or 1 800 424 9300
Fax: not available

Contact Person: Business Unit Product Stewardship Team
E-mail: BDB-PS-SDS-LABEL@bd.com

Supplier

Becton Dickinson
1030 Eskdale Road, Winnersh Triangle
RG41 5TS Wokingham, Berkshire
United Kingdom

Telephone: 01189216499

1.4 Emergency telephone number: CHEMTREC 1 800 424 9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

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Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Health Hazards

Acute toxicity (Oral)	Category 4	H302: Harmful if swallowed.
Acute toxicity (Dermal)	Category 3	H311: Toxic in contact with skin.
Acute toxicity (Inhalation - vapor)	Category 3	H331: Toxic if inhaled.
Skin corrosion	Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage	Category 1	H318: Causes serious eye damage.
Skin sensitizer	Category 1	H317: May cause an allergic skin reaction.
Germ Cell Mutagenicity	Category 2	H341: Suspected of causing genetic defects.
Carcinogenicity	Category 1B	H350: May cause cancer.
Specific Target Organ Toxicity - Single Exposure	Category 1	H370: Causes damage to organs.
Specific Target Organ Toxicity - Single Exposure	Category 3	H335: May cause respiratory irritation.
Specific Target Organ Toxicity - Repeated Exposure	Category 2 (Kidney)	H373: May cause damage to organs through prolonged or repeated exposure.

2.2 Label Elements

Signal Word: Danger

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Hazard Statement(s):

H311+H331: Toxic in contact with skin or if inhaled.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H341: Suspected of causing genetic defects.
H350: May cause cancer.
H370: Causes damage to organs.
H335: May cause respiratory irritation.
H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash face, hands and any exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P312: Call a POISON CENTER or doctor/ physician if you feel unwell.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363: Wash contaminated clothing before reuse.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310: Immediately call a POISON CENTER/doctor.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311: IF exposed: Call a POISON CENTER or doctor/ physician.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

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Storage: P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.

Disposal: P501: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous ingredients which must be listed on the label:

Ethanol, 2,2'-oxybis-
Formaldehyde
Methanol

Supplemental information

Restricted to professional users.

2.3 Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
Formaldehyde	20 - <25%	50-00-0	200-001-8	No data available.	No data available.	#
Ethanol, 2,2'-oxybis-	10 - <20%	111-46-6		No data available.	No data available.	#
Methanol	5 - <10%	67-56-1	200-659-6	No data available.	No data available.	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).
This substance is listed as SVHC.

Classification

Chemical name	Classification	Notes
Formaldehyde	Classification: Eye Dam.: 1: H318; STOT SE: 3: H335; Skin	Note B,

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	Sens.: 1: H317; Acute Tox.: 3: H331; Muta.: 2: H341; Carc.: 1B: H350; Skin Corr.: 1B: H314; Acute Tox.: 3: H301; Acute Tox.: 3: H311 Supplemental label information: None known.	Note D
Ethanol, 2,2'-oxybis-	Classification: STOT RE: 2: H373; Acute Tox.: 4: H302 Supplemental label information: None known.	None.
Methanol	Classification: Flam. Liq.: 2: H225; Acute Tox.: 3: H331; Acute Tox.: 3: H311; Acute Tox.: 3: H301; STOT SE: 1: H370 Supplemental label information: None known.	None.

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:
Get immediate medical advice/attention. If medical advice is needed, have product container or label at hand. Toxic if inhaled. Toxic in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage. Suspected of causing genetic defects. May cause cancer. May cause an allergic skin reaction. Causes damage to organs. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

Inhalation:
Provide fresh air, warmth and rest, preferably in comfortable upright sitting position. Poison - inhalation hazard - call a physician or poison control center immediately.

Skin Contact:
Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact:
Important! Immediately rinse with water for 60 minutes. Call a physician or poison control center immediately.

Ingestion:
If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Get medical attention immediately.

Personal Protection for First-aid Responders:
No data available.

4.2 Most important symptoms and effects, both acute and delayed

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Symptoms:	Symptoms may be delayed.
Hazards:	May cause burns of the gastrointestinal tract if swallowed. Toxic if inhaled. Toxic in contact with skin. Harmful if swallowed. May cause cancer. Causes severe skin burns and eye damage. Suspected of causing genetic defects. Causes damage to organs. May cause respiratory irritation. May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of immediate medical attention and special treatment needed

Treatment:	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice/attention. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get immediate medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Get immediate medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

SECTION 5: Firefighting measures

General Fire Hazards:	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Use water to keep fire exposed containers cool and disperse vapors.

5.1 Extinguishing media

Suitable extinguishing media:	Water spray, foam, dry powder or carbon dioxide. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	Avoid water in straight hose stream; will scatter and spread fire.

5.2 Special hazards arising from the substance or mixture:	COMBUSTIBLE. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Fire or excessive heat may produce hazardous decomposition products.

5.3 Advice for firefighters

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Special fire-fighting procedures:	May form explosive or toxic mixtures with air. Static charges generated by emptying package in or near flammable vapor may cause flash fire. May travel considerable distance to source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. Contact local authorities in case of spillage to drain/aquatic environment.
6.1.1 For non-emergency personnel:	No data available.
6.1.2 For emergency responders:	No data available.
6.2 Environmental Precautions:	Do not release into the environment. Environmental manager must be informed of all major spillages.
6.3 Methods and material for containment and cleaning up:	Absorb spillage with suitable absorbent material. See Section 8 of the SDS for Personal Protective Equipment. For waste disposal, see section 13 of the SDS. Stop leak if possible without any risk.
6.4 Reference to other sections:	No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures:	No data available.
Local/Total ventilation:	No data available.
Safe handling advice:	Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes and avoid contact with skin and clothing. Wash promptly with soap and water if skin becomes contaminated. When using do not eat, drink or smoke. Read and follow manufacturer's recommendations. Use personal protective equipment as required.
Contact avoidance measures:	No data available.

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7.2 Conditions for safe storage, including any incompatibilities

Safe storage conditions: Store in tightly closed original container in a dry, cool and well-ventilated place. Store locked up. Follow rules for flammable liquids.

Safe packaging materials: No data available.

7.3 Specific end use(s):

Reserved for industrial and professional use.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Components	Type	Form of exposure	Exposure Limit Values		Source
Formaldehyde	TWA		2 ppm	2.5 mg/m3	EH40 WEL (2007)
	STEL 15 minutes		2 ppm	2.5 mg/m3	EH40 WEL (01 2020)
Ethanol, 2,2'-oxybis-	TWA		23 ppm	101 mg/m3	EH40 WEL (2007)
Methanol	TWA		200 ppm	266 mg/m3	EH40 WEL (2007)
	STEL 15 minutes		250 ppm	333 mg/m3	EH40 WEL (01 2020)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

DNEL-Values

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
Ethanol, 2,2'-oxybis-	General population	Inhalation	Systemic, long-term 12 mg/m3	irritation respiratory tract
	Workers	Inhalation	Systemic, long-term 44 mg/m3	
	General population	Inhalation	Local, long-term 12 mg/m3	irritation respiratory tract
	General population	Eyes	Local effect	No hazard identified
	Workers	Eyes	Local effect	No hazard identified
	Workers	Inhalation	Local, long-term 60 mg/m3	irritation respiratory tract
	Workers	Dermal	Systemic, long-term 43 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, long-term 21 mg/kg	Repeated dose toxicity

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Formaldehyde	General population	Inhalation	Systemic, long-term 3.2 mg/m3	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term 9 mg/m3	Repeated dose toxicity
	Workers	Eyes	Local effect	Medium hazard (no threshold derived)
	Workers	Inhalation	Local, short-term 0.75 mg/m3	Repeated dose toxicity
	General population	Eyes	Local effect	Medium hazard (no threshold derived)
	Workers	Dermal	Systemic, long-term 240 mg/kg	Repeated dose toxicity
	General population	Oral	Systemic, long-term 4.1 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, long-term 102 mg/kg	Repeated dose toxicity
	General population	Inhalation	Local, long-term 0.1 mg/m3	Repeated dose toxicity
	Workers	Inhalation	Local, long-term 0.375 mg/m3	Repeated dose toxicity
	General population	Dermal	Local, long-term 0.012 mg/cm2	Skin Sensitisation
	Workers	Dermal	Local, long-term 0.037 mg/cm2	Skin Sensitisation
Methanol	General population	Eyes	Local effect	No hazard identified
	Workers	Eyes	Local effect	No hazard identified
	General population	Dermal	Systemic, long-term 4 mg/kg	Acute toxicity
	General population	Inhalation	Systemic, long-term 26 mg/m3	Acute toxicity
	Workers	Inhalation	Local, short-term 130 mg/m3	Acute toxicity
	General population	Inhalation	Local, long-term 26 mg/m3	Acute toxicity
	Workers	Inhalation	Systemic, long-term 130 mg/m3	Acute toxicity
	Workers	Dermal	Systemic, long-term 20 mg/kg	Acute toxicity
	General population	Oral	Systemic, short-term 4 mg/kg	Acute toxicity
	Workers	Dermal	Systemic, short-term 20 mg/kg	Acute toxicity
	General population	Oral	Systemic, long-term 4 mg/kg	Acute toxicity
	General population	Inhalation	Systemic, short-term 26 mg/m3	Acute toxicity
	Workers	Inhalation	Systemic, short-term 130 mg/m3	Acute toxicity
	General population	Inhalation	Local, short-term 26 mg/m3	Acute toxicity
	General population	Dermal	Systemic, short-term 4 mg/kg	Acute toxicity
	Workers	Inhalation	Local, long-term 130 mg/m3	Acute toxicity

PNEC-Values

Remarks: PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks

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8.2 Exposure controls

Appropriate Engineering Controls: Adequate ventilation should be provided whenever the material is heated or mists are generated.

Individual protection measures, such as personal protective equipment

Eye/face protection: Chemical goggles and face shield are recommended.

Hand Protection: Material: Chemical resistant gloves

Skin and Body Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene measures: Do not eat, drink or smoke when using the product. Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet. Avoid contact with skin. Do not breathe dust/fume/gas/mist/vapors/spray.

Environmental Controls: Data available upon request.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Odorless
Odor Threshold:	No data available.
Freezing point:	No data available.
Boiling Point:	The physical-chemical properties of this material have not been fully investigated.
Flammability:	No data available.

Upper/lower limit on flammability or explosive limits

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Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	> 64 °C
Auto-ignition temperature:	No data available.
Decomposition Temperature:	No data available.
pH:	7.10 - 8.00
Viscosity	
Dynamic viscosity:	Not determined.
Kinematic viscosity:	No data available.
Solubility(ies)	
Solubility in Water:	Soluble
Partition coefficient (n-octanol/water):	No data available.
Vapor pressure:	No data available.
Relative density:	No data available.
Density:	No data available.
Relative vapor density:	No data available.
Particle characteristics	
Particle Size:	No data available.
Particle Size Distribution:	No data available.
Dustiness:	No data available.
Specific surface area:	No data available.
Surface charge/Zeta potential:	No data available.
Shape:	No data available.
Crystallinity:	No data available.
Surface treatment:	No data available.

9.2 Other information

VOC Content:	EC Directive 2004/42 351.99 g/l 43.19 % Method: calculated EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17 0 % Method: calculated

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SECTION 10: Stability and reactivity

10.1	**Reactivity:**	Material is stable under normal conditions.
10.2	**Chemical Stability:**	No data available.
10.3	**Possibility of hazardous reactions:**	Stable; however, may decompose if heated. At elevated temperature may liberate poisonous gas.
10.4	**Conditions to avoid:**	Heat, sparks, flames. Shocks and physical damage. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.
10.5	**Incompatible Materials:**	Strong oxidizing agents. Peroxides. Strong acids. Other metals or alloys.
10.6	**Hazardous Decomposition Products:**	By fire, toxic gases may be formed (COx, NOx).

SECTION 11: Toxicological information

General information: This material is toxic. Symptoms may be delayed.

11.1 Information on toxicological effects

Inhalation:	Toxic if inhaled. May cause irritation to the respiratory system.
Skin Contact:	Causes severe skin burns. Prolonged or repeated contact may cause skin sensitization in susceptible individuals.
Eye contact:	May cause chemical eye burns.
Ingestion:	In the event of inhalation (ingestion), seek medical attention immediately Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

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Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix, 326.21 mg/kg
Components:	
Formaldehyde	LD 50, Rat, 460 mg/kg, 2 = reliable with restrictions, Weight of evidence
Ethanol, 2,2'-oxybis-	LD 50, Rat, 19,600 mg/kg, 2 = reliable with restrictions, Supporting study LD 50, Rat, 16,500 mg/kg, 2 = reliable with restrictions, Supporting study
Methanol	No data available.

Dermal

Product:	ATEmix, 849.41 mg/kg
Components:	
Formaldehyde	LD 50, Rabbit, 270 mg/kg
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Inhalation

Product:	ATEmix, 9.19 mg/l, Vapour
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	LC 50, Rat, 6 h, >, 5.08 mg/l
Methanol	No data available.

Repeated dose toxicity

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	NOAEL Rat, Female, Male, Oral, 4 - 7 Weeks, 10,000 mg/kg, Oral Experimental result, Key study LOAEL Rat, Female, Male, Oral, 4 - 7 Weeks, 40,000 mg/kg, Oral Experimental result, Key study NOAEL Rat, Female, Male, Oral, 225 d, 100 mg/kg, Oral Experimental result, Key study NOAEL Rat, Female, Male, Oral, 4 - 7 Weeks, 936 mg/kg, Oral Experimental result, Key study
Methanol	No data available.

Skin Corrosion/Irritation

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	Non-Irritating
Methanol	No data available.

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	

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Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	Not irritant, in vivo, Rabbit, EU
Methanol	No data available.

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Formaldehyde	Skin sensitization:, in vivo, Guinea pig, Sensitising
Ethanol, 2,2'-oxybis-	Skin sensitizer Skin sensitization:, in vivo, Guinea pig, Non sensitising Skin sensitization:, in vivo, Human, Non sensitising
Methanol	Skin sensitization:, in vivo, Guinea pig, Non sensitising

Carcinogenicity

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Germ Cell Mutagenicity
In vitro

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

In vivo

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Reproductive toxicity

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Specific Target Organ Toxicity - Single Exposure

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Product:	No data available.
Components:	
Formaldehyde	Inhalation - vapor, Respiratory system, Causes damage to organs.
Ethanol, 2,2'-oxybis-	Based on available data, the classification criteria are not met.
Methanol	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Aspiration Hazard

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

11.2 Information on other hazards

Other information

Product:	No data available.

SECTION 12: Ecological information

General information: Harmful to aquatic life.

12.1 Toxicity:

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Formaldehyde	EC 50, Green algae (Scenedesmus subspicatus), 72 h, 4.89 mg/l
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
Formaldehyde	No data available.

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Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

Acute hazards to the aquatic environment:

Fish

Product:	Harmful to aquatic organisms.
Components:	
Formaldehyde	LC 50, Morone saxatilis, 96 h, 6.7 mg/lStatic, Experimental result, Key study
Ethanol, 2,2'-oxybis-	LC 50, Pimephales promelas, 96 h, 75,200 mg/lAcute toxicity LC 50, Pimephales promelas, 96 h, 75,200 mg/lflow-through, Experimental result, Key study LC 50, Western mosquitofish (Gambusia affinis), 48 h, > 32,000 mg/lStatic, Mortality LC 50, Carp (Leuciscus idus melanotus), 48 h, > 10,000 mg/l, Mortality LC 50, Western mosquitofish (Gambusia affinis), 24 h, > 32,000 mg/lStatic, Mortality
Methanol	No data available.

Aquatic Invertebrates

Product:	Harmful to aquatic organisms.
Components:	
Formaldehyde	EC 50, Daphnia pulex, 48 h, 5.8 mg/lStatic, Experimental result, Key study experimental result
Ethanol, 2,2'-oxybis-	LC 50, Brine shrimp (Artemia salina), 24 h, > 10,000 mg/lStatic, Mortality EC 100, Daphnia magna, 24 h, > 10,000 mg/lStatic, experimental result Experimental result, Key study EC 50, Daphnia magna, 24 h, > 10,000 mg/lStatic, experimental result Experimental result, Key study LC 50, Daphnia magna, 24 h, 10,000,000 µg/l
Methanol	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Formaldehyde	LC 50, Danio rerio, 144 h, 6.9 mg/l, semi-static, Experimental result, Supporting study experimental result
Ethanol, 2,2'-oxybis-	Not expected to be harmful to aquatic organisms. LC 50, Menidia peninsulae, > 1,500 mg/l, flow-through, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study NOAEL, Pimephales promelas, 15,380 mg/l, semi-static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study

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	IC 25, Pimephales promelas, 22,520 mg/l, semi-static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study NOAEL, Pimephales promelas, 32,000 mg/l, semi-static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study
Methanol	No data available.

Aquatic Invertebrates

Product:	No data available.
Components:	
Formaldehyde	LOAEL, Ceriodaphnia dubia, 7 d, 6 mg/l, Experimental result, Not specified experimental result
Ethanol, 2,2'-oxybis-	IC 25, Ceriodaphnia dubia, 12,310 mg/l, semi-static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study EC 50, Daphnia magna, 33,911 mg/l, Static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study NOAEL, Ceriodaphnia dubia, 8,590 mg/l, semi-static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study NOAEL, Americamysis bahia, >= 1,000 mg/l, flow-through, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study NOAEL, Daphnia magna, > 15,000 mg/l, Static, read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Weight of Evidence study
Methanol	No data available.

12.2 Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
Formaldehyde	Readily biodegradable 97 %, 2 Weeks, Experimental result, Key study Detected in water.

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Ethanol, 2,2'-oxybis-	90 - 100 %, 28 d, Experimental result, Weight of Evidence study Detected in water. 25 - 92 %, 28 d, Read-across based on grouping of substances (category approach), Weight of Evidence study Detected in water. 70 - 80 %, 28 d, Experimental result, Weight of Evidence study Detected in water. 90 - 100 %, 20 d, Read-across based on grouping of substances (category approach), Weight of Evidence study Detected in water. 90 - 100 %, 10 d, Read-across based on grouping of substances (category approach), Weight of Evidence study Detected in water.
Methanol	84 %, Experimental result, Key study Detected in water. 46.3 %, 5 d, Experimental result, Supporting study Soil 69 %, Experimental result, Key study Detected in water. 71.5 %, 5 d, Experimental result, Key study Detected in water. 82.7 %, 5 d, Experimental result, Key study Detected in water.

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
Formaldehyde	Will not bio-accumulate.
Ethanol, 2,2'-oxybis-	Leuciscus idus, 100, Aquatic sediment Experimental result, Key study
Methanol	Green algae (Chlorella fusca vacuolata), 28,400, Static

Partition Coefficient n-octanol / water (log Kow)

Product:	, No data available.
Components:	
Formaldehyde	0.35
Ethanol, 2,2'-oxybis-	No data available.
Methanol	-0.77

12.4 Mobility in soil:

Product:	No data available.
Components:	
Formaldehyde	No data available.
Ethanol, 2,2'-oxybis-	No data available.
Methanol	No data available.

12.5 Results of PBT and vPvB assessment:

Product:	No data available.
Components:	
Formaldehyde	Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria, Not fulfilling vPvB (very persistent/very bioaccummulative) criteria
Ethanol, 2,2'-oxybis-	No data available.

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Methanol	No data available.

12.6 Other adverse effects:

Other hazards
Product: No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: Dispose of waste and residues in accordance with local authority requirements.

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

Contaminated Packaging: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

SECTION 14: Transport information

ADR

14.1 UN number or ID number:	UN 2209
14.2 UN Proper Shipping Name:	FORMALDEHYDE SOLUTION
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
Hazard No. (ADR):	80
Tunnel restriction code:	(E)
14.4 Packing Group:	III
Limited quantity	5.00L
14.5 Environmental Hazards	
Environmentally Hazardous:	No
14.6 Special precautions for user:	None.

RID

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14.1 UN number or ID number:	UN 2209
14.2 UN Proper Shipping Name:	FORMALDEHYDE SOLUTION
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
Hazard No. (ADR):	80
14.4 Packing Group:	III
Limited quantity	5.00L
14.5 Environmental Hazards	
Environmentally Hazardous:	No
14.6 Special precautions for user:	None.

IMDG

14.1 UN number or ID number:	UN 2209
14.2 UN Proper Shipping Name:	FORMALDEHYDE SOLUTION
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
14.4 Packing Group:	III
Limited quantity	5.00L
14.5 Environmental Hazards	
Marine Pollutant:	No
14.6 Special precautions for user:	
	PG

IATA

14.1 UN number or ID number:	UN 2209
14.2 UN Proper Shipping Name:	FORMALDEHYDE SOLUTION
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
14.4 Packing Group:	III
Passenger and cargo aircraft :	852
Limited quantity	None.
14.5 Environmental Hazards	
Environmentally Hazardous:	No

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14.6 Special precautions for user:

	PG
Passenger and cargo aircraft:	Allowed. 852
Cargo aircraft only :	Allowed. 856

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: None present or none present in regulated quantities.

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: None present or none present in regulated quantities.

UK EXP1: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities.

UK EXP2: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities.

UK EXP3: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities.

UK BAN: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities.

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Number on list
Ethanol, 2,2'-oxybis-	111-46-6	3
Formaldehyde	50-00-0	28, 72
Methanol	67-56-1	69

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:

Classification	Lower-tier Requirements	Upper-tier Requirements
Formaldehyde (concentration >= 90 %)	5 t	50 t
Methanol	500 t	5,000 t

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International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Date of first report version: 16.11.2017

Generation date: 24.01.2025

Version #: 4.5

Abbreviations and acronyms:

EH40 WEL:	UK. EH40 Workplace Exposure Limits (WELs), as amended
EH40 WEL / STEL:	Short Term Exposure Limit (STEL):
EH40 WEL / TWA:	Time Weighted Average (TWA):

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EIGA - European Industrial Gases Association; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships;

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n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Notes:

Note B	Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid...%'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.
Note D	Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

Key literature references and sources for data: No data available.

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Classification	Classification procedure
Acute toxicity, Category 4 Oral	Calculation method
Acute toxicity, Category 3 Dermal	Calculation method
Acute toxicity, Category 3 Inhalation - vapor	Calculation method
Skin corrosion, Category 1B	
Serious eye damage, Category 1	
Skin sensitizer, Category 1	On basis of test data
Germ Cell Mutagenicity, Category 2	On basis of test data
Carcinogenicity, Category 1B	On basis of test data
Specific Target Organ Toxicity - Single Exposure, Category 1	

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Specific Target Organ Toxicity - Single Exposure, Category 3	Calculation method
Specific Target Organ Toxicity - Repeated Exposure, Category 2	On basis of test data

Wording of the statements in section 2 and 3

H225	Highly flammable liquid and vapor.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic 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.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H370	Causes damage to organs.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

Training information: No data available.

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Acute Tox. 4, H302
Acute Tox. 3, H311
Acute Tox. 3, H331
Skin Corr. 1B, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
Muta. 2, H341
Carc. 1B, H350
STOT SE 1, H370
STOT SE 3, H335
STOT RE 2, H373

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