SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878 and Regulation (EC) No. 1272/2008

Issuing Date 05-Dec-2022 **Revision Date** 05-Dec-2022 **Revision Number** 1

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

1.1. Product identifier

Product Name Halt GX

Synonyms None

Pure substance/mixture Mixture

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

Recommended use Embalming chemical

Uses advised against Use only for intended applications

1.3. Details of the supplier of the safety data sheet

Manufacturer
The MazWell Group Ltd.
Units 11/14-15 Ardglen Industrial Estate,
Whitchurch, Hampshire,
RG28 7BB, United Kingdom
+44 (0)1256-893883
+44 (0)1256-893868
enquiries@themazwellgroup.com

Supplier
Medenta GmbH
Huckrieden Esch 9,
49549 Ladbergen.
Germany
(05485) 2020
info@medenta.de

For further information, please contact
E-mail address enquiries@themazwellgroup.com

1.4. Emergency telephone number

Emergency telephone No information available

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
France	Numéro ORFILA (INRS) : + 33 (0)1 45 42 59 59
Germany	Poison Control Center - Charité - Universitätsmedizin Berlin Tel (+49) 30 30686700
Italy	06 68593726 (Roma - CAV "Osp. Pediatric Bambino Gesù" Dip. Emergency and DEA Acceptance) 800183459 (Foggia - Centro antiveleni , Az. Osp. Univ. Foggia)

	081-5453333 (Napoli - Centro antiveleni, Az. Osp. "A. Cardarelli") 06-49978000 (Roma - CAV Policlinico "Umberto I") 06-3054343 (Roma - CAV Policlinico "A. Gemelli") 055-7947819 (Firenze - Centro antiveleni , Az. Osp. "Careggi" U.O. Tossicologia Medica) 0382-24444 (Pavia - Centro antiveleni, Centro Nazionale di Informazione Tossicologica) 02-66101029 (Milano - Centro antiveleni, Osp. Niguarda Ca' Granda) 800883300 (Bergamo - Centro antiveleni, Azienda Ospedaliera Papa Giovanni XXII) 800011858 (Verona - Centro antiveleni, Azienda Ospedaliera Integrata Verona)
Netherlands	+31(0)302748888
Romania	+40 (0)21 318 36 06
Spain	+34 91 562 04 20

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flammable liquids	Category 3 - (H226)
Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Inhalation (Vapours)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Respiratory sensitisation	Category 1 - (H334)
Skin sensitisation	Category 1 - (H317)
Chronic aquatic toxicity	Category 3 - (H412)

2.2. Label elements

Contains Glutaraldehyde, Isopropyl alcohol

Signal word
Danger

Hazard statements
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapour
EUH071 - Corrosive to the respiratory tract

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P273 - Avoid release to the environment
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish
P391 - Collect spillage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Unknown acute toxicity

15.523 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
15.523 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).
15.523 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Unknown aquatic toxicity Contains 15.523 % of components with unknown hazards to the aquatic environment.

Additional information
This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards
No information available.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Glutaraldehyde 111-30-8	10 - < 25	No data available	(605-022-00-X) 203-856-5	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Corr. 1B (H314) Resp. Sens. 1 (H334) Skin Sens. 1A (H317) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411) (EUH071)	STOT SE 3 :: 0.5%<=C<5%	1	1
Isopropyl alcohol 67-63-0	5 - < 10	No data available	200-661-7	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	-	-	-
Citric acid 77-92-9	< 1	No data available	(607-750-00-3) 201-069-1	Eye Irrit. 2 (H319) STOT SE 3 (H335)	-	-	-
Propylene Glycol 57-55-6	< 0.1	No data available	200-338-0	Not Classified	-	-	-

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

Acute Toxicity Estimate
If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Glutaraldehyde 111-30-8	252	1800	No data available	0.1642 0.0962	No data available
Isopropyl alcohol 67-63-0	1870	4059	No data available	30.1002	No data available
Citric acid 77-92-9	3000	2002	No data available	No data available	No data available
Propylene Glycol 57-55-6	20000	20800	No data available	No data available	No data available

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No	SVHC candidates
Glutaraldehyde	111-30-8	X

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention. May cause an allergic skin reaction.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention. May produce an allergic reaction.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapours or mists.

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

Symptoms Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. Difficulty in breathing.

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

Note to doctors Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitisation in susceptible persons. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours. Product is or contains a sensitiser. May cause sensitisation by inhalation. May cause sensitisation by skin contact.

5.3. Advice for firefighters

Specific/special fire-fighting measures Fires need to be assessed to determine appropriate protocols and safety measures for firefighting, including establishing safe zones, extinguishing media to be used, firefighter protection, and actions to control or extinguish the fire.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Attention! Corrosive material. Avoid breathing vapours or mists.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Should not be released into the environment. Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information See section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

Storage class (TRGS 510) LGK 3.

7.3. Specific end use(s)

Specific use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Glutaraldehyde 111-30-8	-	TWA: 0.05 ppm TWA: 0.2 mg/m³ STEL 0.05 ppm STEL 0.2 mg/m³ Ceiling: 0.05 ppm Ceiling: 0.2 mg/m³ Sa+ Sh+	-	-	TWA: 0.05 ppm TWA: 0.2 mg/m³ STEL: 0.05 ppm STEL: 0.2 mg/m³ Skin Sensitisation Respiratory Sensitisation
Isopropyl alcohol 67-63-0	-	TWA: 200 ppm TWA: 500 mg/m³	TWA: 200 ppm TWA: 500 mg/m³	STEL: 1225.0 mg/m³ TWA: 980.0 mg/m³	TWA: 400 ppm TWA: 999 mg/m³

		STEL 800 ppm STEL 2000 mg/m³	STEL: 400 ppm STEL: 1000 mg/m³		STEL: 500 ppm STEL: 1250 mg/m³
Propylene Glycol 57-55-6	-	-	-	-	TWA: 150 ppm TWA: 474 mg/m³ TWA: 10 mg/m³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Glutaraldehyde 111-30-8	-	TWA: 0.2 mg/m³ Ceiling: 0.4 mg/m³ S+	Ceiling: 0.2 ppm Ceiling: 0.8 mg/m³	S+ STEL: 0.2 ppm STEL: 0.8 mg/m³	Ceiling: 0.1 ppm Ceiling: 0.42 mg/m³
Isopropyl alcohol 67-63-0	-	TWA: 500 mg/m³ Ceiling: 1000 mg/m³ D*	TWA: 200 ppm TWA: 490 mg/m³	TWA: 150 ppm TWA: 350 mg/m³ STEL: 250 ppm STEL: 600 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ STEL: 250 ppm STEL: 620 mg/m³
Citric acid 77-92-9	-	TWA: 4 mg/m³	-	-	-
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Glutaraldehyde 111-30-8	TWA: 0.1 ppm TWA: 0.4 mg/m³ STEL: 0.2 ppm STEL: 0.8 mg/m³	TWA: 0.05 ppm TWA: 0.2 mg/m³ Sa+ Sh+	TWA: 0.05 ppm TWA: 0.21 mg/m³ Peak: 0.1 ppm Peak: 0.42 mg/m³ respiratory and skin sensitizer	TWA: 0.2 ppm TWA: 0.8 mg/m³ STEL: 0.2 ppm STEL: 0.8 mg/m³	-
Isopropyl alcohol 67-63-0	STEL: 400 ppm STEL: 980 mg/m³	TWA: 200 ppm TWA: 500 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ Peak: 400 ppm Peak: 1000 mg/m³	TWA: 400 ppm TWA: 980 mg/m³ STEL: 500 ppm STEL: 1225 mg/m³	TWA: 500 mg/m³ STEL: 1000 mg/m³ b*
Citric acid 77-92-9	-	TWA: 2 mg/m³	TWA: 2 mg/m³ Peak: 4 mg/m³	-	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Glutaraldehyde 111-30-8	STEL: 0.05 ppm STEL: 0.2 mg/m³ Sens+	-	senR+ senD+ Ceiling: 0.05 ppm Ceiling: 0.2 mg/m³	TWA: 5 mg/m³	J+ Ceiling: 0.2 ppm Ceiling: 0.8 mg/m³
Isopropyl alcohol 67-63-0	TWA: 200 ppm STEL: 400 ppm Sk*	-	TWA: 200 ppm TWA: 492 mg/m³ STEL: 400 ppm STEL: 983 mg/m³	TWA: 350 mg/m³ STEL: 600 mg/m³	TWA: 150 ppm TWA: 350 mg/m³ STEL: 250 ppm STEL: 600 mg/m³
Propylene Glycol 57-55-6	TWA: 10 mg/m³ TWA: 150 ppm TWA: 470 mg/m³ STEL: 1410 mg/m³ STEL: 30 mg/m³ STEL: 450 ppm	-	-	TWA: 7 mg/m³	TWA: 7 mg/m³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Glutaraldehyde 111-30-8	-	-	-	A+ Ceiling: 0.2 ppm Ceiling: 0.8 mg/m³ Ceiling: 0.25 mg/m³	STEL: 0.6 mg/m³ TWA: 0.4 mg/m³
Isopropyl alcohol 67-63-0	-	-	-	TWA: 100 ppm TWA: 245 mg/m³ STEL: 150 ppm STEL: 306.25 mg/m³	STEL: 1200 mg/m³ TWA: 900 mg/m³ skóra*
Propylene Glycol 57-55-6	-	-	-	TWA: 25 ppm TWA: 79 mg/m³ STEL: 37.5 ppm STEL: 118.5 mg/m³	TWA: 100 mg/m³
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Glutaraldehyde 111-30-8	Ceiling: 0.05 ppm Sensitizer activated and inactivated	-	TWA: 0.05 ppm TWA: 0.21 mg/m³ S+ Ceiling: 0.2 mg/m³	TWA: 0.2 mg/m³ TWA: 0.05 ppm STEL: 0.1 ppm STEL: 0.4 mg/m³	STEL: 0.05 ppm STEL: 0.2 mg/m³ Sen+

Isopropyl alcohol 67-63-0	TWA: 200 ppm STEL: 400 ppm	TWA: 81 ppm TWA: 200 mg/m³ STEL: 203 ppm STEL: 500 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ Ceiling: 1000 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ STEL: 400 ppm STEL: 1000 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ STEL: 400 ppm STEL: 1000 mg/m³

Chemical name	Sweden	Switzerland	United Kingdom
Glutaraldehyde 111-30-8	Bindande KGV: 0.1 ppm Bindande KGV: 0.4 mg/m³ S+	S+ TWA: 0.05 ppm TWA: 0.21 mg/m³ STEL: 0.1 ppm STEL: 0.42 mg/m³	TWA: 0.05 ppm TWA: 0.2 mg/m³ STEL: 0.05 ppm STEL: 0.2 mg/m³ Sen+
Isopropyl alcohol 67-63-0	NGV: 150 ppm NGV: 350 mg/m³ Vägledande KGV: 250 ppm Vägledande KGV: 600 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ STEL: 400 ppm STEL: 1000 mg/m³	TWA: 400 ppm TWA: 999 mg/m³ STEL: 500 ppm STEL: 1250 mg/m³
Citric acid 77-92-9	-	TWA: 2 mg/m³ STEL: 4 mg/m³	-
Propylene Glycol 57-55-6	-	-	TWA: 150 ppm TWA: 474 mg/m³ TWA: 10 mg/m³ STEL: 450 ppm STEL: 1422 mg/m³ STEL: 30 mg/m³

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Isopropyl alcohol 67-63-0	-	-	-	50 mg/L - blood (Acetone) - at the end of the work shift 50 mg/L - urine (Acetone) - at the end of the work shift	-

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Isopropyl alcohol 67-63-0	-	-	-	25 mg/L (whole blood - Acetone end of shift) 25 mg/L (urine - Acetone end of shift) 25 mg/L - BAT (end of exposure or end of shift) urine 25 mg/L - BAT (end of exposure or end of shift) blood	25 mg/L (whole blood - Acetone end of shift) 25 mg/L (urine - Acetone end of shift)

Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII
Isopropyl alcohol 67-63-0	-	40 mg/L (urine - Acetone end of shift at end of workweek)	-	40 mg/L - urine (Acetone) - end of shift at end of workweek

Chemical name	Latvia	Luxembourg	Romania	Slovakia
Isopropyl alcohol 67-63-0	-	-	50 mg/L - urine (Acetone) - end of shift	-

Chemical name	Slovenia	Spain	Switzerland	United Kingdom
Isopropyl alcohol 67-63-0	25 mg/L - blood (Acetone) - at the end of the work shift 25 mg/L - urine (Acetone) - at the end of the work shift	40 mg/L (urine - Acetone end of workweek)	25 mg/L (urine - Acetone end of shift) 0.4 mmol/L (urine - Acetone end of shift) 25 mg/L (whole blood - Acetone end of shift) 0.4 mmol/L (whole blood - Acetone end of shift)	-

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Glutaraldehyde 111-30-8	-	6.25 mg/kg bw/day [4] [6]	-
Isopropyl alcohol 67-63-0	-	888 mg/kg bw/day [4] [6]	500 mg/m³ [4] [6]
Propylene Glycol 57-55-6	-	-	168 mg/m³ [4] [6] 10 mg/m³ [5] [6]

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Glutaraldehyde 111-30-8	0.07 mg/kg bw/day [4] [6]	-	-
Isopropyl alcohol 67-63-0	26 mg/kg bw/day [4] [6]	-	89 mg/m³ [4] [6]
Propylene Glycol 57-55-6	-	-	50 mg/m³ [4] [6] 10 mg/m³ [5] [6]

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Glutaraldehyde 111-30-8	0.0025 mg/L	0.006 mg/L	0.00025 mg/L	-	-
Isopropyl alcohol 67-63-0	140.9 mg/L	140.9 mg/L	140.9 mg/L	-	-
Propylene Glycol 57-55-6	260 mg/L	183 mg/L	26 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Glutaraldehyde 111-30-8	0.091 mg/kg sediment dw	0.009 mg/kg sediment dw	0.8 mg/L	0.21 mg/kg soil dw	-
Isopropyl alcohol 67-63-0	552 mg/kg sediment dw	552 mg/kg sediment dw	2251 mg/L	28 mg/kg soil dw	160 mg/kg food
Propylene Glycol 57-55-6	572 mg/kg sediment dw	57.2 mg/kg sediment dw	20000 mg/L	50 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls Showers
Eyewash stations

Ventilation systems.

Personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Colour	No information available
Odour	Characteristic
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point		No data available
Initial boiling point and boiling range	82 - 84 °C	
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point	31 °C	
Autoignition temperature		No data available
Decomposition temperature		No data available
pH	7.4 - 7.6	Concentrated solution
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Vapour pressure		No data available
Relative density	1.045 - 1.055	
Bulk density		No data available
Liquid Density		No data available
Vapour density	> 1	
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

9.2. Other information

VOC	Max 85% Volatile

9.2.1. Information with regards to physical hazard classes

Explosives

Explosive properties	Not considered to be explosive
Oxidising properties	Does not meet the criteria for classification as oxidizing

9.2.2. Other safety characteristics

Evaporation rate	< 1 Butyl acetate = 1

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks. Exposure to air or moisture over prolonged periods. Excessive heat.

10.5. Incompatible materials

Incompatible materials Acids. Bases. Oxidising agent.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause sensitisation in susceptible persons. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitisation by skin contact.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. May cause additional affects as listed under "Inhalation".

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Itching. Rashes. Hives.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral)	1,318.70 mg/kg
ATEmix (dermal)	8,307.30 mg/kg
ATEmix (inhalation-vapour)	0.535 mg/l
ATEmix (inhalation-dust/mist)	0.278 mg/l

Unknown acute toxicity

15.523 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
15.523 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).
15.523 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Glutaraldehyde	= 252 mg/kg (Rat)	= 1800 mg/kg (Rabbit)	= 40.1 ppm (Rat) 4 h = 23.5 ppm (Rat) 4 h
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	> 10000 ppm (Rat) 6 h
Citric acid	= 3 g/kg (Rat)	> 2000 mg/kg (Rat)	-
Propylene Glycol	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	> 317 042 mg/m³ (Rabbit) 2h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

Respiratory or skin sensitisation May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Unknown aquatic toxicity Contains 15.523 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Glutaraldehyde 111-30-8	EC50: =0.61mg/L (72h, Desmodesmus subspicatus) EC50: =0.84mg/L (96h, Desmodesmus subspicatus)	LC50: 7.8 - 22mg/L (96h, Lepomis macrochirus) LC50: 2.6 - 4.8mg/L (96h, Oncorhynchus mykiss) LC50: 7.8 - 13mg/L (96h, Oncorhynchus mykiss) LC50: =5.4mg/L (96h, Pimephales promelas)	-	EC50: =14mg/L (48h, Daphnia magna) EC50: 0.56 - 1.0mg/L (48h, Daphnia magna)
Isopropyl alcohol 67-63-0	EC50: >1000mg/L (96h, Desmodesmus subspicatus) EC50: >1000mg/L (72h, Desmodesmus subspicatus)	LC50: =9640mg/L (96h, Pimephales promelas) LC50: =11130mg/L (96h, Pimephales promelas) LC50: >1400000µg/L (96h, Lepomis macrochirus)	-	EC50: =13299mg/L (48h, Daphnia magna)
Citric acid 77-92-9	-	LC50: =1516mg/L (96h, Lepomis macrochirus)	-	-
Propylene Glycol 57-55-6	EC50: 24200 mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 40613 mg/L (96h, Oncorhynchus mykiss)	-	LC50: 18340 mg/L (48h, Ceriodaphnia dubia)

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Glutaraldehyde	-0.36
Isopropyl alcohol	0.05
Citric acid	-1.72
Propylene Glycol	-1.07

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Glutaraldehyde 111-30-8	The substance is not PBT / vPvB
Isopropyl alcohol 67-63-0	The substance is not PBT / vPvB
Citric acid 77-92-9	The substance is not PBT / vPvB
Propylene Glycol 57-55-6	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number UN2920
14.2 UN proper shipping name CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol)
14.3 Transport hazard class(es) 8
Subsidiary hazard class 3
14.4 Packing group II
Description UN2920, CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol), 8 (3), II, (31°C C.C.)
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions 274

EmS-No	F-E, S-C
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number	UN2920
14.2 UN proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol)
14.3 Transport hazard class(es)	8
Subsidiary hazard class	3
14.4 Packing group	II
Description	UN2920, CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol), 8 (3), II
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	274
Classification code	CF1

ADR

14.1 UN number or ID number	UN2920
14.2 UN proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol)
14.3 Transport hazard class(es)	8
Subsidiary class	3
14.4 Packing group	II
Description	UN2920, CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Glutaraldehyde, Isopropyl alcohol), 8 (3), II
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	274
Classification code	CF1
Tunnel restriction code	(D/E)

IATA

14.1 UN number or ID number	UN2920
14.2 UN proper shipping name	Corrosive liquid, flammable, n.o.s. (Glutaraldehyde, Isopropyl alcohol)
14.3 Transport hazard class(es)	8
Subsidiary hazard class	3
14.4 Packing group	II
Description	UN2920, Corrosive liquid, flammable, n.o.s. (Glutaraldehyde, Isopropyl alcohol), 8 (3), II
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None
ERG Code	8F
Note:	None

SECTION 15: Regulatory information

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

National regulations

France
Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Glutaraldehyde 111-30-8	RG 65,RG 66
Isopropyl alcohol 67-63-0	RG 84
Propylene Glycol 57-55-6	RG 84

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Glutaraldehyde - 111-30-8	75.	-
Isopropyl alcohol - 67-63-0	75.	-
Citric acid - 77-92-9	75.	-

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS
P5b - FLAMMABLE LIQUIDS
P5c - FLAMMABLE LIQUIDS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
Glutaraldehyde - 111-30-8	Product-type 2: Disinfectants and algaecides not intended for direct application to humans or animals Product-type 3: Veterinary hygiene Product-type 4: Food and feed area Product-type 6: Preservatives for products during storage Product-type 11: Preservatives for liquid-cooling and processing systems Product-type 12: Slimicides
Isopropyl alcohol - 67-63-0	Product-type 2: Disinfectants and algaecides not intended for direct application to humans or animals Product-type 4: Food and feed area Product-type 1: Human hygiene
Citric acid - 77-92-9	Product-type 2: Disinfectants and algaecides not intended for direct application to humans or animals Product-type 6: Preservatives for products during storage

International Inventories

Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

EUH071 - Corrosive to the respiratory tract
H225 - Highly flammable liquid and vapour
H301 - Toxic if swallowed
H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H330 - Fatal if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Legend
ATE: Acute Toxicity Estimate
SVHC: Substances of Very High Concern for Authorisation:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set

World Health Organization

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Disclaimer
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End of Safety Data Sheet