Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

***Product name*:** Glutaraldehyde 50% solution
***Product code*:** XM-005025
Supplier: Kairos Group Sp. z o.o.
Address: Poland, Warszawa, 00-526, uł. Krucza 16/22
Responsible Department: Sales Department
Telephone: +48534328265
e-mail: info@kairosgroup.pl

2. HAZARDS IDENTIFICATION

Classification of the GHS
HEALTH HAZARDS

Acute toxicity (Oral)	Category 3	H301 Toxic if swallowed.
Acute toxicity (Inhalation)	Category 3	H331 Toxic if inhaled.
Skin corrosion	Category 1	H314 Causes severe skin burns and eye damage
Respiratory sensitization	Category1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	Category1	H317 May cause an allergic skin reaction.
Specific target organ toxicity - single exposure (Inhalation) (Respiratory tract irritant.)	Category3	H335 May cause respiratory irritation.
Acute aquatic toxicity	Category 1	H400 Very toxic to aquatic life.

ENVIRONMENTAL HAZARDS Not classified

GHS label elements

Pictograms or hazard symbols	
Signal word	Danger
Hazard statement	Toxic by inhalation and if swallowed. Causes burns. May cause sensitisation by inhalation and skin contact. Very toxic to aquatic organisms.

Precautionary statements

[Prevention]	P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P285 In case of inadequate ventilation wear respiratory protection.
	P273 Avoid release to the environment.
[Response]	P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
[Storage]	P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
[Disposal]	Dispose of contents/container through a waste management company authorised by the local government.

Other hazards which do not result in classification No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

This product is a substance.

CAS-No. /EC-No. /Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 111-30-8 **EC-No.** 203-856-5 **Index** 605-022-00-X	—	50.0 % 50.0%	Glutaral; glutaraldehyde; 1,5-pentanedial water	Acute Tox., 3, H301 Acute Tox., 3, H331 Skin Corr., 1B, H314 Resp. Sens., 1, H334 Skin Sens., 1, H317 STOT SE, 3, H335 Aquatic Acute, 1, H400

4. FIRST AID MEASURES

Inhalation:	Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.
Skin contact:	Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.
Eye contact:	Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably
Ingestion:	If the person is fully alert and cooperative, have the person rinse mouth with plenty of water. In cases of ingestion have the person drink 4 to 10 ounces (120-300 mL) of water. Do not induce vomiting. Do not attempt mouth rinse if the person has respiratory distress, altered mental status, or nausea and vomiting. Call a physician and/or transport to emergency facility immediately. See "Indication of immediate medical attention and special treatment needed". Seek medical attention immediately.
Protection of first-aiders:	A rescuer should wear personal protective equipment, such as rubber gloves and airtight goggles.

5. FIRE-FIGHTING MEASURES

Extinguishing Media	To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Special hazards arising from the substance or mixture	Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.
Advice for firefighters	Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not
Special Protective Equipment for Firefighters:	contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS. Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with elf-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Evacuate area. Keep upwind of spill. Ventilate area of leak or spill. Only trained and properly protected personnel must be involved in clean-up operations. Refer to Section 7, Handling, for additional precautionary measures.

Environmental precautions:	Spills or discharge to natural waterways is likely to kill aquatic organisms. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up:	Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Evacuate area. Keep upwind of spill. Ventilate area of leak or spill. Only trained and properly protected personnel must be involved in clean-up operations. Refer to Section 7, Handling, for additional precautionary measures. Spills or discharge to natural waterways is likely to kill aquatic organisms. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Avoid making contact with spilled material, glutaraldehyde will be absorbed by most shoes. Always wear the correct protective equipment, consisting of splashproof monogoggles, or both safety glasses with side shields and a wraparound full-face shield, appropriate gloves and protective clothing. A self-contained breathing apparatus or respirator and absorbents may be necessary, depending on the size of the spill and the adequacy of ventilation. Small spills: Wear the correct protective equipment and cover the liquid with absorbent material. Collect and seal the material and the dirt that has absorbed the spilled material in polyethylene bags and place in a drum for transit to an approved disposal site. Rinse away the remaining spilled material with water to reduce odor, and discharge the rinsate into a municipal or industrial sewer. Large spills: In case of nasal and respiratory irritation, vacate the room immediately. Personnel cleaning up should be trained and equipped with a self-contained breathing apparatus, or an officially approved or certified full-face respirator equipped with an organic vapor cartridge, gloves, and clothing impervious to glutaraldehyde, including rubber boots or shoe protection. Deactivate with sodium bisulfite (2-3 parts (by weight) per part of active substance glutaraldehyde), collect the neutralized liquid and place in a drum for transit to an approved disposal site.

7. HANDLING AND STORAGE

Handling

General Handling:	Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Do not swallow.
Other Precautions:	Keep container closed. Use with adequate ventilation. Wear goggles, protective clothing and butyl or nitrile gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Storage

Storage conditions:	Do not store in: Aluminum. Carbon steel. Copper. Mild steel. Iron. **Shelf life: Use within 12 Months**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls:	nstall a closed system or local exhaust as possible so that workers should not be exposed directly. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection:	Vapor respirator. Follow local and national regulations.
Hand protection:	Protective gloves.
Eye protection:	Safety glasses. A face-shield, if the situation requires.
Skin and body protection:	Protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Liquid
Form:	Clear
Color:	colourless to yellow
Odor:	Fruity
Ph:	3.1 - 4.5 ASTM E70
Melting point:	No data available
Freezing Point :	-18 °C OECD 102

Boiling Point (760 mmHg)	100.7 °C OECD 103 .
Density:	0.98
Solubility:	No data available
Closed Cup	ASTM D56 (none)
Evaporation Rate (Butyl Acetate = 1)	1.1 Literature
Flammability (solid, gas)	No
Flammable Limits In Air Lower:	No test data available
Upper:	No test data available
Vapor Pressure	0.027 kPa @ 20 °C OECD 104 Active ingredient
Vapor Density (air = 1)	1.1 Literature
Vapor Pressure	0.027 kPa @ 20 °C OECD 104 Active ingredient
Specific Gravity (H2O = 1)	1.129 OECD 109
Solubility in water (by weight)	100 % @ 20 °C Calculated
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	15.4 mPa.s Literature (Brookfield Viscosity - @ 100 rpm, #0 spindle)
Kinematic Viscosity	20.2 mm2/s @ 20 °C Literature
Explosive properties	no data available
Oxidizing properties	no

10. STABILITY AND REACTIVITY

Chemical stability	Thermally stable at typical use temperatures.
Reactivity:	No dangerous reaction known under conditions of normal use.
Possibility of hazardous reactions Conditions to Avoid:	Active ingredient decomposes at elevated temperatures

Incompatible Materials:	Avoid contact with: Amines. Ammonia. Strong acids. Strong bases. Strong oxidizers. Avoid contact with metals such as: Aluminum. Carbon steel. Copper. Iron. Mild steel.
Hazardous decomposition products	Decomposition products depend upon temperature, air supply and the presence of other materials

11. TOXICOLOGICAL INFORMATION

Acute toxicity	*Oral:* Type of value: LD50 Species: rat (male/female) Value: approx. 158 mg/kg (OECD Guideline 401) *Inhalation:* Type of value: LC50 Species: rat (male/female) Value: 0.48 mg/l (OECD Guideline 403) Exposure time: 4 h An aerosol was tested. *Dermal:* Type of value: LD50 Species: rat (male/female) Value: > 2,000 mg/kg (OECD Guideline 402) The data refer to a diluted watery solution of the substance.
Irritation/corrosion	*Skin:* Species: rabbit Result: Corrosive. Method: OECD Guideline 404 The data refer to a diluted watery solution of the substance. *Eye:* Species: rabbit Result: Risk of serious damage to eyes. Method: Draize test The data refer to a diluted watery solution of the substance. *Sensitization:* Open epicutaneous test (OET) Species: guinea pig Result: sensitizing The data refer to a diluted watery solution of the substance.
Other Information	Toxicological data applies only to the water free substance.

12.ECOLOGICAL INFORMATION

Fish:	*Fish* Acute:Fish test acute static Cyprinodon variegatus/LC50 (96 h): 39 mg/l The details of the toxic effect relate to the nominal concentration. Fish test acute static Lepomis macrochirus/LC50 (96 h): 9.4 mg/l The details of the toxic effect relate to the nominal concentration. *Chronic:* See user defined text. Flow through. Oncorhynchus mykiss /NOEC (97 d): 1.6 mg/l The details of the toxic effect relate to the nominal concentration.
Aquatic invertebrates	*Acute:* Daphnia test acute static Daphnia magna/EC50 (48 h): 5.75 mg/l The details of the toxic effect relate to the nominal concentration. other Flow through. mussel/EC50 (96 h): 0.75 mg/l The statement of the toxic effect relates to the analytically determined concentration. OPP 72-3 (EPA-Guideline) Flow through. Mysid shrimp/ LC50 (96 h): 5.5 mg/l The statement of the toxic effect relates to the analytically determined concentration. *Chronic:* OECD Guideline 202, part 2 semistatic Daphnia magna (NOEC) 21 d 2.5 mg/l The statement of the toxic effect relates to the analytically determined concentration.
Aquatic plants	*Toxicity to aquatic plants:* OECD Guideline 201 static green algae/EC50 (72 h): 0.6 mg/l The statement of the toxic effect relates to the analytically determined concentration. ISO/DIS 10253 Skeletonema costatum/EC50 (72 h): 0.92 mg/l The details of the toxic effect relate to the nominal concentration.

Microorganisms	*Toxicity to microorganisms:* OECD Guideline 209 aerobic activated sludge, domestic/EC20 (30 min): approx. 15 mg/l The details of the toxic effect relate to the nominal concentration.
Non-Mammals	*Other terrestrial non-mammals:* LD50: 0.73 ml/kg (50%aq.) Moderately toxic. Bioaccumulation Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected. Environmental mobility: Transport between environmental compartments
Plant	*Toxicity to terrestrial plants:* OECD Guideline 208 vetch/EC20 (19 d): > 450 mg/kg
Degradability/Per sistence	*Test method:* OECD 301 A (new version) (aerobic), activated sludge, domestic
Biological/Abiological Degradation	*Method of analysis:* DOC reduction Degree of elimination: 90-100 % (28 d) Evaluation: Readily biodegradable (according to OECD criteria). Readily biodegradable (according to OECD criteria).
Hydrolysis	Test method: Directive 92/69/EEC, C.7 (abiotic) pH7 Half-life: > 1 a (50 °C) In contact with water the substance will hydrolyse slowly.
Bioaccumulation	ecause of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.
Environmental mobility:	**Transport between environmental compartments** other adsorption/water - soil log KOC: 0.76

13. DISPOSAL CONSIDERATIONS

Waste disposal of substance:

Incinerate in suitable incineration plant, observing local authority regulations.
Do not discharge substance/product into sewer system. Incinerate or dispose of in a RCRA-licensed facility.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorised use of used containers.

14. TRANSPORT INFORMATION

Land transport	
USDOT	
Hazard class:	8
Packing group:	II
ID number:	UN 2922
Hazard label:	8, 6.1, EHSM
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)
Sea transport	
IMDG	
Hazard class:	8
Packing group:	II
ID number:	UN 2922
Hazard label:	8, 6.1, EHSM
Marine pollution:	YES
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)
Air transport	
IATA/ICAO	
Hazard class:	8
Packing group:	II
ID number:	UN 2922

Hazard label:	8, 6.1, EHSM
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)

15. REGULATORY INFORMATION

Safe management ordinance of dangerous chemical product (State Council announces on January 26,2002): Safe Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

16. OTHER INFORMATION

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.