

Section 1 - Identification

Product Name
Dissolved Oxygen Electrode Filling Solution
Product Code
HAC27591
Address

 ThermoFisher Scientific Australia Pty Ltd
 5 Caribbean Drive, Scoresby
 VICTORIA 3179, Australia

Emergency Tel.
CHEMTREC®
03 9757 4559 or +613 9757 4559
Telephone / Fax Numbers

Tel: 1300 735 292

Fax: 1800 067 639

E-mail address

ANZinfo@thermofisher.com

Recommended Use

Laboratory chemicals.

Uses advised against

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as not hazardous according to criteria of Safe Work Australia.

Physical hazards

No hazards identified

Health hazards

No hazards identified

Environmental hazards

No hazards identified

Label Elements

None required

Other information

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Glycerin	56-81-5	90-100
Potassium chloride	7447-40-7	10-30
Glutaraldehyde	111-30-8	<0.1

Section 4 - First Aid Measures

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Self-Protection of the First Aider	No special precautions required.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions

Should not be released into the environment.

Methods for Containment and Clean Up

Clean-up methods - small spillage

Sweep up and shovel into suitable containers for disposal.

Clean-up methods - large spillage

Not applicable, packaged goods.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Exposure limits**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.**UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.**DE** - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Glycerin	TWA: 10 mg/m ³	TWA: 10 mg/m ³		TWA: 10 mg/m ³ 8 hr (mist only)	TWA: 200 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 200 mg/m ³ (8 Stunden). MAK Höhepunkt: 400 mg/m ³
Glutaraldehyde		Ceiling: 0.05 ppm Ceiling: 0.21 mg/m ³	Ceiling: 0.05 ppm	STEL: 0.05 ppm 15 min STEL: 0.2 mg/m ³ 15 min TWA: 0.05 ppm 8 hr TWA: 0.2 mg/m ³ 8 hr Resp. Sens.	TWA: 0.05 ppm (8 Stunden). AGW - exposure factor 2 TWA: 0.2 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 0.05 ppm (8 Stunden). MAK TWA: 0.21 mg/m ³ (8 Stunden). MAK Höhepunkt: 0.1 ppm Höhepunkt: 0.42 mg/m ³

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Exposure Controls**Engineering Measures**

None under normal use conditions.

Personal protective equipment**Eye Protection**

Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	AS/NZS 2161	(minimum requirement)

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection

Long sleeved clothing

Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices

Recommended Filter type:

Particle filter (or AUS/NZ equivalent)

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Colorless	
Physical State	Liquid	
Odor	None	
Odor Threshold	No data available	
pH	7	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	100 °C / 212 °F	
Flash Point	Not applicable	Method - No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	Not applicable	Liquid
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Glycerin	-1.75	
Glutaraldehyde	-0.36	

Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other information

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	None known.
Hazardous Decomposition Products	None under normal use conditions.
Hazardous Polymerization	No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glycerin	12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 2.75 mg/L/4h (Rat)(mist)
Potassium chloride	LD50 = 2600 mg/kg (Rat)		
Glutaraldehyde	66 mg/kg (Rat) 134 mg/kg (Rat)	>2500 mg/kg (Rat)	0.480 mg/L (Rat) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory

No data available

Skin

No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

- (h) STOT-single exposure; No data available
- (i) STOT-repeated exposure; No data available
- Target Organs No information available.
- (j) aspiration hazard; No data available
- Symptoms / effects, both acute and delayed No information available

Section 12 - Ecological Information

Ecotoxicity effects

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Glycerin	LC50: 51 - 57 mg/L, 96h static (Oncorhynchus mykiss)			
Potassium chloride	Lepomis macrochirus: LC50: 1060 mg/L /96h Pimephales promelas: LC50: 750 - 1020 mg/L /96h	EC50: 825 mg/L/48h	EC50: 2500 mg/L/72h	
Glutaraldehyde	LC50: 7.8 - 22 mg/L, 96h static (Lepomis macrochirus) LC50: 2.6 - 4.8 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 7.8 - 13 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 5.4 mg/L, 96h static (Pimephales promelas)	EC50: 0.56 - 1.0 mg/L, 48h Static (Daphnia magna) EC50: = 14 mg/L, 48h (Daphnia magna)	EC50: = 0.61 mg/L, 72h (Desmodesmus subspicatus) EC50: = 0.84 mg/L, 96h (Desmodesmus subspicatus)	EC50 = 13.3 mg/L 17 h EC50 = 76.0 mg/L 5 min

Persistence and Degradability

Persistence Persistence is unlikely.

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Glycerin	-1.75	No data available
Glutaraldehyde	-0.36	No data available

Mobility The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Endocrine Disruptor Information .? is a suspected endocrine disruptor

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues/Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

Other Information

Chemical wastes should be disposed through a licensed commercial waste collection service.

Section 14 - Transport InformationIMDG/IMO

Not regulated

ADG

Not regulated

IATA

Not regulated

Environmental hazards

No hazards identified

Special Precautions

No special precautions required

Additional information

None known

Section 15 - Regulatory InformationSafety, health and environmental regulations/legislation specific for the substance or mixtureNational Regulations**Australia**

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Potassium chloride - 7447-40-7	Schedule 4 listed - in oral preparations for human therapeutic use except: a) when containing ≤ 550 mg of Potassium chloride per dosage unit, b) in preparations for oral rehydration therapy, c) in preparations for oral use for bowel cleansing prior to diagnostic medical and surgical procedures, or d) in preparations for enteral feeding
Glutaraldehyde - 111-30-8	Schedule 2 listed Schedule 5 listed - in preparations except: when included in Schedule 2, or in preparations containing $\leq 0.5\%$ of Glutaral when labelled with the statement: IRRITANT, and Avoid contact with eyes Schedule 6 listed - except when included in Schedule 2 or 5, or in preparations containing $\leq 0.5\%$ of Glutaral when labelled with the statement: IRRITANT and Avoid contact with eyes

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Glycerin - 56-81-5	Present	-
Potassium chloride - 7447-40-7	Present	-
Glutaraldehyde - 111-30-8	Present	Specific information requirement: Obligations to provide information apply. You must tell us within 28 days if the circumstances of your importation or manufacture (introduction) are different to those in our assessment.

Australian - Illicit Drug Precursors/Reagents Substance List

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemicals of Security Concern

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Subject to reporting requirements

Component	National pollutant inventory
Glutaraldehyde - 111-30-8	10 tonne/yr. Threshold category 1

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licensing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Glycerin	X	X	200-289-5	-	X	X	-	X	X	X	X	KE-29297
Potassium chloride	X	X	231-211-8	-	X	X	-	X	X	X	X	KE-29086
Glutaraldehyde	X	X	203-856-5	-	X	X	-	X	X	X	X	KE-27969

Legend: X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their disposal

Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Glycerin	56-81-5	Listed	Not applicable	Not applicable	Not applicable
Potassium chloride	7447-40-7	Listed	Not applicable	Not applicable	Not applicable
Glutaraldehyde	111-30-8	Listed	Not applicable	Not applicable	Not applicable

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Glutaraldehyde	-	Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 203-856-5 - Respiratory sensitising properties, Article 57f - human health

<https://echa.europa.eu/substances-restricted-under-reach>

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances	NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory	EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances	KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances	CAS - Chemical Abstracts Service
TWA - Time Weighted Average	ACGIH - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC)
IARC - International Agency for Research on Cancer	IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association	ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail
MARPOL - International Convention for the Prevention of Pollution from Ships	OECD - Organisation for Economic Co-operation and Development
NZS 5433:2020 - Transport of Dangerous Goods on Land	LC50 - Lethal Concentration 50%
LD50 - Lethal Dose 50%	ATE - Acute Toxicity Estimate
EC50 - Effective Concentration 50%	RPE - Respiratory Protective Equipment
WEL - Workplace Exposure Limit	NOEC - No Observed Effect Concentration
DNEL - Derived No Effect Level	BCF - Bioconcentration factor
POW - Partition coefficient Octanol:Water	PBT - Persistent, Bioaccumulative, Toxic
vPvB - very Persistent, very Bioaccumulative	
VOC - (Volatile Organic Compound)	

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Revision Date	14-Jul-2023
Revision Summary	Update to GHS format.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet