SAFETY DATA SHEET

According to Regulation (EC) No453/2010

SDS –ACGCS-0001
Version 1.1
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Section 1: IDENTIFICATION OF SUBSTANCE/ MIXTURE AND OF THE COMPANY

1.1 Product identifier

Product name	:	Alcogiene Cold Sterilant
Included product code	:	ACGCS-10P

1.2 Relevant identified uses of the substance or mixture

Identified uses	:	Laboratory chemicals, Manufacture of substances
Uses advised against	:	Not applicable

1.3 Details of the supplier of the safety datasheet

Company	:	Elite Advanced Materials Sdn Bhd No 1, Jalan KPK 1/2, Kawasan Perindustrian Kundang, 48020 Rawang, Selangor, Malaysia
E-mail address	:	enquiry@eamaterials.com

1.4 Emergency telephone number

Emergency	:	+60 3-6034 3766 (Local business hours only)

Section 2: HAZARDS INDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Oxidizing Liquids	Category 1
Organic Peroxides	Type G
Corrosive to Metals	Category 1
Skin Corrosion/ Irritation	Category 1A
Serious Eye Damage/ Eye Irritation	Category 1
Acute Toxicity (Inhalation)	Category 4
Specific Target Organ Systemic Toxicity - Single Exposure	Category 3

2.2 Label elements

Labeling in compliance to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hazard pictograms

GHS03

GHS05

GHS07

Signal word

Danger

Hazard statement

H271	May cause fire or explosion; strong oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness and dizziness.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition source. No smoking.
P221	Take any precaution to avoid mixing with combustibles (metals, oxidizing materials, alkalis, caustics, chlorine, formaldehyde, salts, flammable organics).
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353+P310	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
P304+P340+ P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P305+P351+P338+ P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P371 + P380 + P375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No data available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixture

Hazardous components according to Regulation (EC) No 1272/2008

Component	Identity	Classification Code	H-Code	Concentration
Hydrogen Peroxide	CAS-No.: 7722-84-1	Ox. Liq. 1 Acute Tox. 4 (Oral) Acute Tox 4 (Inh.) Skin Corr. 1A (C ≥70)	H271 H302 H332 H314	10 – 30 %
Acetic Acid	CAS-No.: 64-19-7	Flam. Liq. 3 Acute Tox. 4 (Dermal) Skin Corr. 1A, (C ≥90)	H226 H312 H314	7 – 10 %
Peracetic Acid	CAS-No.: 79-21-0	Flam. Liq. 3, Org. Perox. D, Acute Tox. 4 (Oral) Acute Tox. 4 (Dermal) Acute Tox. 4 (Inh.) Skin Corr. 1A STOT SE 3 Aquatic Acute 1	H226 H242 H302 H312 H332 H314 H335 H400	3 – 7 %
Stabilizer	Proprietary	Eye Dam. 1 Met. Corr. 1	H318 H290	0.5 – 1.5 %

Section 4: FIRST AID MEASURES

4.1 Description of First Aid measures

General information

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical advice/attention.

In case of skin contact

In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get immediate medical advice/attention.

In case of eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get immediate medical advice/ attention.

If swallowed

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2 Most important symptoms and delayed symptoms and effects

Symptoms/injuries after inhalation: Harmful if inhaled. May cause respiratory irritation. May cause dizziness or drowsiness.

Symptoms/injuries after skin contact: Causes severe skin burns. Symptoms may include redness, pain, blisters.

Symptoms/injuries after eye contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/injuries after ingestion: May be harmful if swallowed. May cause stomach distress, nausea or vomiting. May cause burns to the linings of the mouth, throat, and gastrointestinal tract.

4.3 Indication of any immediate medical attention and special treatment

No data available.

Section 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray, dry chemical, foam, carbon dioxide.

Unsuitable extinguishing media

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Fire hazard: Products of combustion may include, and are not limited to: oxides of carbon, oxygen. Danger of developing toxic pyrolyse products.

Explosion hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. This material increases the risk of fire and may aid combustion.

5.3 Advice for fire-fighters

Keep upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

5.4 Further information

Use water spray to cool exposed surfaces.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove ignition sources.

6.2 Environmental precautions

Relevant water authorities should be notified of any large spillage to water course or drain.

6.3 Methods and material for containment and cleaning up

In case of accidental spillage, contain the spill and neutralize it with sodium bicarbonate or sodium carbonate. Use appropriate personal protection equipment (PPE). Scoop up material and place in a disposal container. Absorb spillage to prevent material damage. Provide ventilation. Do not reuse the liquid material.

Section 7: HANDLING AND STORAGE

7.1 Precaution for safe handling

May be corrosive to metals. Keep away from sources of ignition. Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not swallow. Handle and open container with care. Use only outdoors or in a well-ventilated area. When using do not eat, drink or smoke. Never return unused material to original container. Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 Conditions for safe storage, including any incompatibilities

Proper grounding procedures to avoid static electricity should be followed. Keep out of the reach of children. Keep container tightly closed. Keep only in the original container in a cool, well-ventilated place. Store away from other materials. Floor needs a protective coating against acid. Store at temperatures not exceeding 23.9 °C (75 °F). Protect from sunlight. Store locked up.

7.3 Specific end use

No further relevant information available.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	ACGIH TLV	CAL/OSHA PEL	NIOSH REL
Hydrogen Peroxide	TWA: 1 ppm	TWA: 1 ppm	TWA: 1 ppm
Acetic Acid	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm STEL: 15 ppm

8.2 Exposure control

Personal protection measures, such as personal protective equipment

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/ face protection

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Hand protection

Wear chemically resistant protective gloves.

Skin and Body protection

Wear suitable protective clothing. Wear solvent resistant apron and boots for spills.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Clear
Colour	:	Colourless
Odour	:	Acid
Odour threshold	:	No data available
pH	:	0.8 +/- 3
Relative evaporation rate	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapor pressure	:	No data available

Relative vapor density at 20 °C	:	No data available
Relative density	:	1.09 - 1.14
Solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	Strong oxidizer
Explosive limits	:	No data available
SADT	:	>60°C

9.2 Other information

No applicable.

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

May cause or contribute to the combustion of other material generally by yielding oxygen. May be corrosive to metals.

10.2 Chemical stability

Stable under normal storage conditions. Decomposes slowly to release oxygen.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Heat. Sources of ignition. Incompatible materials.

10.5 Incompatible materials

Metals. Oxidizing materials. Alkalis. Caustics. Chlorine. Formaldehyde. Salts. Flammable organics.

10.6 Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxygen. Do not mix with chlorinated products as this could liberate toxic corrosive chlorine gas.

Section 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Harmful if inhaled

Alcogiene Cold Sterilant	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 2.0 but ≤ 10.0 mg/l (Calculated using ATE values)
Hydrogen Peroxide (7722-84-1)	
LD50 Oral Rat	801 mg/kg
LD50 Dermal Rat	4060 mg/kg
LD50 Dermal Rabbit	2000 mg/kg
LC50 Inhalation Rat	2 g/m³/4h
Acetic Acid (64-19-7)	
LD50 Oral Rat	3310 mg/kg
LD50 Dermal Rabbit	1060 mg/kg
Peroxyacetic Acid (79-21-0)	
LD50 Oral Rat	1540 mg/kg

LD50 Dermal Rabbit LC50 Inhalation Mouse	1410 µl/kg 0.524 mg/l/4h
Stabilizer (Proprietary)	
LD50 Oral Rat LD50 Dermal Rabbit	2400 mg/kg > 7940 mg/kg

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Specific target organ toxicity – single exposure

May cause respiratory irritation.

Specific target organ toxicity – repeated exposure

No data available.

Aspiration hazard

No data available.

Additional Information

Symptoms/injuries after inhalation: Harmful if inhaled. May cause respiratory irritation. May cause drowsiness and dizziness.

Symptoms/injuries after skin contact: Causes severe skin burns. Symptoms may include redness, pain, blisters.

Symptoms/injuries after eye contact: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/injuries after ingestion: May be harmful if swallowed. May cause stomach distress, nausea or vomiting. May cause burns to the linings of the mouth, throat, and gastrointestinal tract.

Section 12: ECOLOGY INFORMATION

12.1 Ecotoxicity

Not considered to be harmful to aquatic life.

Hydrogen Peroxide (7722-84-1)	
LC50 Fishes 1	16.4 mg/l (96 h - Pimephales promelas)
EC50 Daphnia 1	18 – 32 mg/l (48 h - Daphnia magna [Static])
LC50 Fish 2	18 – 56 mg/l (96 h - Lepomis macrochirus [Static])
Acetic Acid (64-19-7)	
LC50 Fishes 1	79 mg/l (96 h - Pimephales promelas [Static])
EC50 Daphnia 1	65 mg/l (48 h - Daphnia magna [Static])
LC50 Fish 2	75 mg/l (96 h - Lepomis macrochirus [Static])
Stabilizer (Proprietary)	
LC50 Fishes 1	868 mg/l (96 h - Lepomis macrochirus [Static])
EC50 Daphnia 1	527 mg/l (48 h - Daphnia magna)

LC50 Fish 2 NOEC (acute)	360 mg/l (96 h - Oncorhynchus mykiss [Static]) 1000 mg/kg (14 Days - Eisenia foetida [soil dry weight])

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Alcogiene Cold Sterilant	
Bioaccumulative potential	Not established.
Hydrogen peroxide (7722-84-1)	
BCF fish 1	No bioaccumulation.
Acetic Acid (64-19-7)	
Log Pow	-0.31 (at 20 °C)
Peroxyacetic acid (79-21-0)	
BCF fish 1	Not bioaccumulative, rapid degradation.
Stabilizer (Proprietary)	
BCF fish 1 Log Pow	< 50 3.49

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment.

No data available.

12.6 Other adverse effects

No data available

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment method

Product

Waste material must be disposed according to national and local regulations. Keep the chemicals in its specific waste container according to the waste classification.

According to Quality Environment Regulation (Scheduled Waste) 2005, waste need to be sent to designated premise for recycle, treatment or disposal. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

Section 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3149	IMDG: 3149	IATA-DGR: 3149

14.2 UN proper shipping name

ADR/RID:	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED
IMDG:	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED
IATA-DGR:	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED

14.3 Transport hazard class(es)

ADR/RID: 5.1(8)	IMDG: 5.1(8)	IATA-DGR: 5.1(8)

14.4 Packaging group

ADR/RID: II	IMDG: II	IATA-DGR: II

14.5 Environmental hazards

ADR/RID: No	IMDG Marine pollutant: No	IATA-DGR: No

14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available.

14.7 Special precautions for user

No data available.

Section 15: REGULATORY INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

Section 16: OTHER INFORMATION

This information is based on present level of our knowledge, however, this shall not constitute a guarantee product features and shall not establish a legally valid contractual relationship.

Abbreviations:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inh.)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 3	Flammable liquids, Category 3
Met. Corr. 1	Corrosive to metals, Category 1
Org. Perox.	G Organic Peroxides, Type G
Ox. Liq. 1	Oxidising Liquids, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3

ADR	European agreement concerning the international carriage of dangerous goods by road.
IMDG	International Maritime Dangerous Goods.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
RID	Regulations concerning the International Carriage of Dangerous goods by rail.

Notice to reader

The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the products and should not be construed as any guarantee of technical performance or suitability for particular application.

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