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Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE SUPPLIER

1.1 Product identifiers

Product name : LACTIC ACID SOLUTION

1.2 Other means of identification

22-Hydroxy-2-Methylacetic Acid; 2-Hydroxypropionic Acid; Alpha-Hydroxypropionic Acid; Racemic Lactic Acid

1.3 Recommended use of the product and restrictions on use

To be used as an acidulant, acidity modifier, flavour, antioxidant, stabiliser, preservative or bactericidal agent in the food feed industries.

1.4 Details of supplier of the safety data sheet

Company	: AGent Sales & Services Pty Ltd
Street address	: 38 May Holman Drive, Bassendean, Western Australia 6054
Telephone	: (+61 8) 6270 4500 / 1300 833 844
Fax	: (+61 8) 6270 4544

1.5 Emergency telephone number

Telephone : 1800 995 539

2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; DANGEROUS GOODS.

2.1 GHS Classification

Corrosive to metals (Category 1)
Skin corrosion/irritation (Category 1B)
Serious eye/damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)

H318	Causes serious eye damage.
H314	Causes sever skin burns and eye-damage
H290	May be corrosive to metals

Precautionary statement(s)

Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P234	Keep only in original container.

Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P310	Immediately call a POISON CENTRE or doctor/physician.
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

P405	Store locked up.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national regulations.

Other hazards
None.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Classification	Concentration (%)
Lactic acid	50-21-5	H290, H314, H318	80 – 98
Water	7732-18-5	Not listed	Balance

For the full text of the H-Statements mentioned in this section, see Section 16

4. FIRST AID MEASURES

4.1 Description of First Aid measures

General advice
Contact the Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If inhaled in, move person into fresh air. If not breathing, give artificial respiration. If rapid recovery does not occur, seek medical advice.

In case of skin contact
Remove contaminated clothing and wash affected areas with soap and running water for at least 15 minutes. Launder clothing before reuse. If skin irritation occurs, seek medical advice.

In case of eye contact
In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water for at least 15 minutes, keeping eyelids open. If eye irritation persists, seek medical advice/attention.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically. May aggravate skin and respiratory disorders.

4.4 First Aid facilities
Eye wash facilities and safety shower should be available.

5. FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media
Water fog (or if unavailable, fine water spray), foam, dry chemical powder, carbon dioxide

5.2 Special hazards arising from the chemical
Combustible liquid. Will burn if dried and heated with a flame. Will burn if involved in a fire. Incompatible with oxidising agents, reducing agents, strong bases, nitric acid, sulphuric acid, hydrofluoric acid, metals and sources of ignition. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Hazardous Decomposition Products include carbon monoxide, carbon dioxide and smoke.

5.3 Special protective equipment and precautions for fire fighters
Wear positive-pressure self-contained breathing apparatus and suitable protective clothing (or chemical splash suit). Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire-fighting water to reach waterways, drains or sewers. Store fire-fighting water for treatment.

5.4 Hazchem code
2X

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

6.3 Methods and materials for containment and cleaning up
Slippery when spilt. Avoid accidents, clean up immediately. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. Wash area down with excess water.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour, mist and aerosol. Observe good personal hygiene, including washing hands before eating.

For precautions see Section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated place. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters
Not value assigned for this specific material by SWA.

Biological Limits
None allocated for this product.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment (PPE)

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

Eye/face protection
Splash-proof goggles or safety glasses with side shields. See Australian Standards (AS/NZS 1336 & 1337).

Skin protection
Wear impervious gloves and protective clothing (splash apron or equivalent chemical impervious outer garment and rubber boots) appropriate for the risk of exposure. See Australian Standards (AS 2161 & 2919 and AS/NZS 2210).

Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.

Respiratory protection
Where risk assessment shows inhalation risk exists, wear an approved P1 or P2 particulate filter respirator. See Australian Standards (AS/NZS 1715 & 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form : Viscous liquid
	Colour : Clear, colourless
Odour:	Faintly acetic (vinegar)
Odour Threshold:	No data available
pH:	1.5 – 2.5 (1% solution)
Freezing Point (ºC):	17
Boiling Point/Range (ºC):	122
Decomposition Temperature:	No data available
Evaporation Rate:	No data available
Flash Point:	> 122
Flammability Limits:	Not applicable
Specific Gravity:	1.2
Vapour Density (air=1):	3.1
Vapour Pressure:	No data available
% Volatiles:	No data available
Solubility in water:	Miscible in water

10. STABILITY AND REACTIVITY

10.1 Reactivity
Corrosive liquid.

10.2 Chemical stability
Product is stable under normal conditions of use, storage and temperature

10.3 Possibility of hazardous reactions
Lactic acid self-polymerizes, but does not form more hazardous chemicals.

10.4 Conditions to avoid
Avoid excessive heat, direct sunlight, moisture, freezing, static charges, flames, sparks and high temperatures.

10.5 Incompatible materials
Incompatible with oxidizing agents, reducing agents, strong bases, nitric acid, sulphuric acid, hydrofluoric acid, metals and sources of ignition

10.6 Hazardous decomposition products

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Hazardous decomposition products include carbon monoxide, carbon dioxide and smoke.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. LD_{50} (Mouse): 4875 mg/kg; LD_{50} (Rat): 3543 mg/kg

Chronic: Harmful effects were not observed in rats dermally exposed to a cosmetic product which contained a small amount of lactic acid for 13 weeks. No ill effects were observed in 2 dogs given 600-1600 mg/kg lactic acid orally 42 times over 2.5 months.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
There is no human information available on lactic acid. Mostly negative results have been obtained in bacteria and cultured mammalian cells. Positive results have been attributed to the effect of pH, rather than mutagenicity.

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
One study has shown that lactic acid can produce fetotoxicity (decreased bone ossification) in presence of maternal toxicity. Mice were fed 570 mg/kg on days 6-15 of pregnancy. Maternal toxicity was evidenced by lower food consumption & liver weight.

Specific target organ toxicity (STOT) - single exposure

No data available

Specific target organ toxicity (STOT) - repeated exposure
No data available

Aspiration hazard
No data available

Health Effects
No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. LD_{50} (Mouse): 4875 mg/kg; LD_{50} (Rat): 3543 mg/kg

Eye Contact: May cause irreversible eye injury. Causes severe eye irritation and burns. Risk of serious damage to eyes. Draize test (Rabbit, eye): 750 µg Severe

Skin Contact: Causes severe skin irritation and burns. Not expected to cause an allergic skin reaction. The severity of injury depends on the concentration of the solution and the duration of exposure. Draize test (Rabbit, skin): 5 mg/24h Severe; Draize test (Rabbit, skin): 100 mg/24h Moderate

Inhalation: Causes severe respiratory tract irritation with possible burns. Material has a very low vapour pressure and inhalation exposures are not expected unless material is heated or misted.

11.2 Information on possible routes of exposure
The substance can be absorbed into the body by ingestion, inhalation of its vapour, mist or aerosol, eye contact and skin contact.

11.3 Additional Information
RTECS: Not available

12. ECOGICAL INFORMATION

12.1 Ecotoxicity
Avoid contaminating waterways.

Toxicity to fish:
LC_{50} (Brachydanio rerio): 320 mg/L/96h; LC_{50} (Lepomis Macrochirus): 100-180 mg/L/96h; EC_{50} (Daphnia magna): 240mg/L/48h; EC_{50} (Selenastrum Capricornutum): 3.5 mg/L/70h

12.2 Persistence and degradability
Calcium salt precipitation may occur in hard water at very high concentrations. May undergo bimolecular esterification to form 6-membered lactide rings. Subject to biodegradation.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods and containers
Ensure waste disposal conforms to relevant local, state and federal authority waste disposal regulations

14. TRANSPORT INFORMATION

Classified as **DANGEROUS GOODS** by the criteria of the ADG Code for transport by road or rail.
Classified as **DANGEROUS GOODS** by the criteria of the IMDG Code for transport by sea.
Classified as **DANGEROUS GOODS** by the criteria of the IATA Code for transport by air.

14.1	**UN number**	3265
14.2	**Proper shipping name**	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
14.3	**Transport hazard class**	8
14.4	**Packing group**	II
14.5	**Environmental hazards**	No
14.6	**Special precautions for users**	None allocated
14.7	**Hazchem code**	2X
14.8	**Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010)**	36
14.9	**EMS**	FA, SB

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
S6 Scheduled poison.

Carcinogen classification under WHS Regulations 2011, Schedule 10
Not listed

Notification status
AICS On the inventory, or in compliance with the inventory.

SECTION 16 OTHER INFORMATION

Key / legend to abbreviations and acronyms used in the MSDS

ADG	Australian Dangerous Goods
ASCC	Australian Safety and Compensation Council
DEC	Department of Environment and Conservation
GHS	Globally Harmonised System of Classification & Labelling of Chemicals
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
NOHSC	National Occupational Health and Safety Commission
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
RTECS	Registry of Toxic Effects of Chemical Substances.
SWA	Safe Work Australia
Eye Irrit	Eye Irritation
pH	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline

Literature references
"Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA Work Health and Safety Regulations 2011

"Registry of Toxic Effects of Chemical Substances". Ed. D. Sweet, US Dept. of Health & Human Services: Cincinatti, 2012.

Reason(s) for Issue:
Update contact details

Disclaimer

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