HURST SCIENTIFIC

Safety Data Sheet
Acid Alcohol 0.125% - 5%

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Acid Alcohol 0.125% - 5%
Product number	ACDL-0.125% to 5%

1.3 Recommended use of the chemical and restrictions on use

Laboratory use.

1.4 Supplier's details

Name	Hurst Scientific
Address	2 Transit Place 6112 Forrestdale WA Australia
Telephone	1300 778 068
email	sales@hurstscientific.com.au

1.5 Emergency phone number

Australian Poisons Information Centre 131 126
Australian Emergency Services 000

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Skin corrosion/irritation, Cat. 1B
- Flammable liquids, Cat. 2

2.2 GHS label elements, including precautionary statements

Pictograms

1. Corrosion; 2. Flame

Signal word	**Danger**

Hazard statement(s)

H225	Highly flammable liquid and vapor
H314	Causes severe skin burns and eye damage

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands and exposed skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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 [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/doctor/
P321	Specific treatment (see section 4 on this label).
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use alcohol-resistant foam, dry chemical, or carbon dioxide to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with loca, regional, national and international regulations.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

1. Ethanol

Concentration	70 % (volume)
EC no.	200-578-6
CAS no.	64-17-5
Index no.	603-002-00-5

2. Hydrochloric acid (<37%)

Concentration	0.125 - 5 % (volume)
EC no.	231-595-7
CAS no.	7647-01-0
Index no.	017-002-01-X

3. Water

Concentration	<= 30 % (volume)
EC no.	231-791-2
CAS no.	7732-18-5

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled	If fumes, aerosols or combustion products are inhaled remove from contaminated area.
In case of skin contact	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
In case of eye contact	If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
If swallowed	If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

4.2 Most important symptoms/effects, acute and delayed

Skin contact:
Causes severe skin burns. Symptoms include redness, pain, blistering, and possible deep tissue damage.

Eye contact:
Causes serious eye damage. Symptoms include severe irritation, intense pain, tearing, redness, blurred vision, and possible permanent eye injury.

Inhalation:
Vapours may cause irritation of the nose and throat, coughing, headache, dizziness, and drowsiness. High concentrations may cause central nervous system depression.

Ingestion:
May cause burns to the mouth, throat, and stomach. Symptoms may include nausea, vomiting, abdominal pain, and risk of aspiration into the lungs.

Delayed effects:
Severe eye or skin burns may be slow to heal. Repeated high exposure to ethanol vapour may cause central nervous system effects such as fatigue or headache.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate medical attention is required for skin or eye contact, ingestion, or inhalation of high concentrations.
Treat symptomatically.
Do not induce vomiting if swallowed; risk of aspiration.
In case of eye exposure, urgent ophthalmologic evaluation is recommended.
Ensure suitable supportive treatment for chemical burns and monitor for respiratory distress in inhalation cases.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Alcohol stable foam.
Dry chemical powder.
BCF (where regulations permit).
Carbon dioxide.
Water spray or fog - Large fires only.

5.2 Specific hazards arising from the chemical

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.3 Methods and materials for containment and cleaning up

Remove all ignition sources.
Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact with the substance, by using protective equipment.
Contain and absorb small quantities with vermiculite or other absorbent material.
Wipe up.
Collect residues in a flammable waste container.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- DO NOT allow clothing wet with material to stay in contact with skin
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

7.2 Conditions for safe storage, including any incompatibilities

Packing as supplied by manufacturer.
Plastic containers may only be used if approved for flammable liquid.
Check that containers are clearly labelled and free from leaks.

Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

CAS: 64-17-5
Ethanol
AU/SWA (AU): 1000 ppm; 1880 mg/m3 TWA inhalation [Ethyl alcohol]

CAS: 7647-01-0
Hydrochloric acid (<37%)
AU/SWA (AU): 5 Peak limitation ppm; 7.5 Peak limitation mg/m3 TWA inhalation [Hydrogen chloride]; 5 Peak limitation ppm; 7.5 Peak limitation mg/m3 TWA inhalation [Hydrogen chloride]; 5 Peak limitation ppm; 7.5 Peak limitation mg/m3 TWA inhalation [Hydrogen chloride]

8.2 Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can
be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically
"adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a
ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.
For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation
equipment should be explosion-resistant.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh
circulating air required to effectively remove the contaminant.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Safety glasses with side shields.
Chemical goggles.

Skin protection
- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

Respiratory protection
If working within a confined area always use a suitable respirator.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Highly flammable liquid; Mixes with water.
Color	Clear.
Odor	Distinct Alcohol Odour.
Melting point/freezing point	78 °C (Ethanol)
Boiling point or initial boiling point and boiling range	-117 °C (Ethanol)
Flammability	Highly flammable liquid and vapour.
Lower and upper explosion limit/flammability limit	3.5% – 19% (ethanol vapour in air)
Flash point	13 °C (closed cup, ethanol)
Auto-ignition temperature	392 °C (ethanol)
Decomposition temperature	Not available.
pH	< 2 (acidic solution)
Kinematic viscosity	Not available / low viscosity liquid.
Solubility	Completely soluble in water.
Partition coefficient n-octanol/water (log value)	
Vapor pressure	~5.9 kPa (ethanol)
Evaporation rate	~2.6 (ethanol)
Density and/or relative density	0.89 (approx.)
Relative vapor density	1.6 (ethanol vapour)

SECTION 10: Stability and reactivity

10.1 Reactivity
Reacts vigorously with strong oxidising agents. Acidic solution may react with metals to produce hydrogen gas.
Stable at room temperature in closed containers, away from ignition sources.

10.2 Chemical stability
Stable at room temperature in closed containers, away from ignition sources.

10.3 Possibility of hazardous reactions
No dangerous polymerisation occurs.

May react with:
Strong oxidising agents (risk of fire/explosion).
Metals, forming flammable hydrogen gas.
Bases, generating heat and splashing risk.

10.4 Conditions to avoid
Heat, sparks, open flames, hot surfaces.
Static discharge.
Elevated temperatures.
Poorly ventilated areas.
Contact with incompatible materials (oxidisers, bases, metals).
Evaporation leading to vapour accumulation.

10.5 Incompatible materials
Strong oxidising agents (e.g., chromic acid, peroxides, nitrates).
Bases/alkalis (may cause violent neutralisation).
Metals such as aluminium, zinc, magnesium (releases hydrogen gas).
Reducing agents.
Chlorinating agents.
Strong dehydrating agents (e.g., sulfuric acid).

10.6 Hazardous decomposition products
Carbon monoxide (CO)
Carbon dioxide (CO_2)
Hydrogen chloride gas (HCl vapour)
Chlorine compounds (trace amounts under severe decomposition)

Flammable vapours

Water: In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Not classified for acute toxicity as a mixture.
Ethanol is of low acute toxicity by oral and dermal routes (oral LD_{50} rat ~7,000 mg/kg).
Hydrochloric acid at low concentrations may cause irritation but is not acutely toxic at the levels present.
Inhalation of high vapour concentrations may cause headache, dizziness, drowsiness, and CNS depression.
Ingestion may cause burning of the mouth/throat and gastric irritation.

Skin corrosion/irritation
Causes severe skin burns (Skin Corr. 1B).
Due to the presence of hydrochloric acid (≤5%).
Contact may cause severe irritation, redness, blistering, and tissue destruction.
Ethanol may enhance degreasing and drying of the skin.

Serious eye damage/irritation
Causes serious eye damage.
Acidic component can cause severe irritation, redness, pain, and corneal injury.
High ethanol concentrations may cause intense stinging and temporary impairment of vision.

Respiratory or skin sensitization
Not expected to be a respiratory or skin sensitiser.
Neither ethanol nor diluted hydrochloric acid are known sensitising agents.

Germ cell mutagenicity
Not classified.
Ethanol and hydrochloric acid are not considered mutagenic at the concentrations present.

Carcinogenicity
Not classified as carcinogenic.
Ethanol is not classified as a carcinogen in liquid/occupational exposure forms (only alcoholic beverage consumption is carcinogenic).
Hydrochloric acid is not a carcinogen.

Reproductive toxicity
Not expected to cause reproductive harm.
Ethanol has reproductive toxicity concerns only at very high chronic exposures.
The mixture does not present reproductive toxicity at intended use concentrations.

Specific target organ toxicity (STOT) - single exposure
May cause respiratory irritation.
Vapours or mists can irritate the nose, throat, and upper airways.
High ethanol vapour levels may cause CNS depression (dizziness, drowsiness, headache).

Specific target organ toxicity (STOT) - repeated exposure
Not classified.
No evidence of significant organ damage from repeated low-level exposure to this mixture.

Aspiration hazard
Not classified.
Ethanol does not meet viscosity or hydrocarbon criteria for aspiration toxicity.

Not expected to pose an aspiration hazard

SECTION 12: Ecological information

Toxicity
This product is not expected to be acutely hazardous to aquatic life at the concentrations present.
Ethanol is of low aquatic toxicity (LC_{50} values typically > 10,000 mg/L).
Dilute hydrochloric acid may lower pH locally but is rapidly neutralised in the environment.

Persistence and degradability
Ethanol is readily biodegradable.
Hydrochloric acid dissociates completely in water and does not persist as an organic pollutant.

Bioaccumulative potential
Bioaccumulation is not expected.
Ethanol has a low partition coefficient (log Kow –0.3) and does not bioaccumulate.
Hydrochloric acid does not bioaccumulate.

Mobility in soil
High mobility expected.
Ethanol is fully miscible with water and readily moves through soil.
Hydrochloric acid becomes neutralised by minerals present in soil.

Results of PBT and vPvB assessment
This mixture does not contain any substances identified as PBT or vPvB according to REACH criteria.

Endocrine disrupting properties
Contains no substances identified as having endocrine-disrupting properties for the environment.

Other adverse effects
May contribute to local pH changes in the environment due to the acidic component.
No known significant environmental hazards at expected release volumes.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of contents in accordance with local, regional, and national regulations.

Packaging disposal
Empty containers may contain flammable vapour residues.
Do not cut, weld, or reuse containers.
Dispose of cleaned packaging via approved recycling or waste disposal contractors.
Contaminated packaging should be treated as hazardous waste.

Waste treatment
Use a licensed waste management facility.

Sewage disposal
Do not dispose of into sewer systems unless significantly diluted and permitted by local regulations.

Other disposal recommendations
Handle waste in accordance with AS/NZS, EPA, and local environmental authority guidelines.

SECTION 14: Transport information

14.1	UN Number	1170
14.2	UN Proper Shipping Name	Ethanol Solution
14.3	Transport hazard class(es)	3
14.4	Packing group	II

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Australian Inventory of Industrial Chemicals
Chemical name: Ethanol
CAS number: 64-17-5, CR number: 705

Australian Inventory of Industrial Chemicals
Chemical name: Hydrochloric acid
CAS number: 7647-01-0, CR number: 11194

Australian Inventory of Industrial Chemicals
Chemical name: Water
CAS number: 7732-18-5, CR number: 11271

Chemical Safety Assessment
• Poison Schedule: Not applicable.
• TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight hour working day, for a five-day week.
• STEL (Short Term Exposure Limit): The average airborne concentration over a 15-minute period which should not be exceeded at any time during a normal eight-hour workday.

SECTION 16: Other information

16.1 Further information/disclaimer

This SDS is prepared in accordance with the Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals
Code of Practice, (2011). The information contained within is believed to be accurate at the date of preparation/review. Hurst
Scientific makes no claims of the accuracy or completeness of the information and excludes all liability for any loss or damage
related to the supply or use of the information in this material safety data sheet. It is recommended the user make their own
determinations as to the suitability of the information provided to the application in which the product is to be used.

16.2 Preparation information

References
1. Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011).
2. Safe Work Australia, National Code of Practice for the Labelling of Workplace Hazardous Chemicals (2015).
3. Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2013)
4. National Transport Commission Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code); Canprint: Canberra (2007), Volume 1, 7th Edition.
5. Standards Australia, Dangerous Goods Initial Emergency Response Guide: Australian Handbook (SAA/SNZ HB76); Homebush (2004).