HURST SCIENTIFIC

Safety Data Sheet
HCL/Formic Acid 8% Solution

SECTION 1: Identification

GHS Product identifier

Product name	HCL/Formic Acid 8% Solution
Product number	HCLFOR8-500M, 1L, 2.5L,5L, 10L
Brand	Hurstchem

Other means of identification

HCL/Formic Acid 8% Solution

Recommended use of the chemical and restrictions on use

Laboratory Reagent

Supplier's details

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

Emergency phone number

Australian Poisons Information Centre 131 126
Australian Emergency Services 000

SECTION 2: Hazard identification

General hazard statement

Classified as a Hazardous substance according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.
Classified as a Dangerous goods according to the ADG Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 8

- Corrosive to metals, Cat. 1
- Skin corrosion/irritation, Cat. 1A
- Eye damage/irritation, Cat. 1

- Flammable liquids, Cat. 4

GHS label elements, including precautionary statements

Pictograms

1. Corrosion; 2. Exclamation mark

Signal word	**Danger**

Hazard statement(s)

H227	Combustible liquid
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
H335	May cause respiratory irritation
H318	Causes serious eye damage

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing 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 affected areas with water [or shower].
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use … to extinguish.
P390	Absorb spillage to prevent material-damage.
P403	Store in a well-ventilated place.
P406	Store in a corrosive resistant/… container with a resistant inner liner.
P501	Dispose of contents/container to …

SECTION 3: Composition/information on ingredients

Mixtures

Hazardous components

1. Hydrochloric acid

Concentration	0.1 - < 10 % (volume)
EC no.	231-595-7
CAS no.	7647-01-0
Index no.	017-002-01-X

2. Formic acid

Concentration	0.1 - < 10 % (volume)
EC no.	200-579-1
CAS no.	64-18-6
Index no.	607-001-00-0

3. Water

Concentration	Balance (volume)
EC no.	231-791-2
CAS no.	7732-18-5

SECTION 4: First-aid measures

Description of necessary first-aid measures

If inhaled	Evacuate to fresh air immediately. If unconscious place in recovery position, provide artificial respiration if breathing ceases.
In case of skin contact	Remove contaminated clothing and wash affected area with soap and water thoroughly. Seek medical attention.
In case of eye contact	Flush eyes with copious amounts of water for at least 15 minutes. Seek immediate medical attention.
If swallowed	DO NOT induce vomiting. Rinse mouth out with water. Seek immediate medical attention.

Personal protective equipment for first-aid responders
Eye wash station, safety shower and First Aid kit.

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use media suitable for other material involved in fire.

Specific hazards arising from the chemical
Toxic gases may evolve (Hydrogen Chloride).

Formic acid: Carbon oxides

Special protective actions for fire-fighters
Wear SCBA (Self-Contained Breathing Apparatus) and full protective equipment.

Further information
Hazchem code 2W

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Ensure adequate ventilation. Avoid breathing in vapours, mist or gas. If possible contain the spill. Evacuate all
unnecessary personnel.

Methods and materials for containment and cleaning up

Absorb with vermiculite or similar and place into a suitably labelled container. Dispose of waste according to local authority guidelines. Wash the affected area with a large volume of water. Do not contaminate drains or waterways.

SECTION 7: Handling and storage

Precautions for safe handling
Use only in an adequately ventilated area. Avoid breathing in mists or vapours. Wear appropriate protective clothing to avoid any exposure and practice good personal hygiene.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated area. Keep container tightly closed. Metal containers must be lined.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 64-18-6
Formic acid
AU/SWA (Australia): 10 ppm; 19 mg/m3 STEL inhalation; 5 ppm; 9.4 mg/m3 TWA inhalation

CAS: 7647-01-0 (EC: 231-595-7)
Hydrochloric acid
7.5mg/m3, 5ppm TWA

Appropriate engineering controls
Ensure adequate ventilation to maintain airborne concentrations below national exposure standards.

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

Eye/face protection
Safety glasses or goggles,

Skin protection
Chemical-resistant gloves and laboratory coat.

Body protection
Biological Limit Values Not available for this product.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, colourless, fuming liquid. Hygroscopic
Color	Clear
Odor	Characteristic, benzaldehyde-like, pungent, penetrating odour
Odor threshold	Reported values vary widely and are not reliable; 13-340 ppm (detection); 11-13 ppm (recognition); 20 ppm (100% recognition) (100% formic acid)
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	Combustible
Lower and upper explosion limit/flammability limit	No data available.
Flash point	>65C
Auto-ignition temperature	No data available.

pH	Acidic
Kinematic viscosity	No data available.
Solubility	Water soluble
Vapor pressure	No data available.
Density and/or relative density	Not available
Relative vapor density	No data available

SECTION 10: Stability and reactivity

Reactivity
Non-reactive under recommended conditions for use and storage.

Chemical stability
Stable under recommended conditions for use and storage.

Possibility of hazardous reactions
Polymerisation will not occur.

Conditions to avoid
Metals and incompatibles.

Incompatible materials
Metals. Will react with water or steam to produce toxic and corrosive fumes. Keep away from strong oxidising agents, strong bases, cyanides and sulphides. Avoid contact with metals. Reacts with zinc, brass, galvanised iron, aluminium, copper and copper alloys.

Formic acid: Strong oxidizing agents, Strong bases, Powdered metals

Hazardous decomposition products
Toxic gases (Hydrogen Chloride) may evolve.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
HEALTH EFFECTS:
ACUTE:
Eye Contact Will irritate the eyes, resulting in pain, stinging, redness, lacrimation and possible corneal burns (and blindness).
Skin Contact Will cause burns and irritation, resulting in pain, redness and swelling. Can also cause dermatitis.
Inhalation Will cause irritation to the mucous membranes of the nose, throat and respiratory system.
Ingestion Will cause burns, nausea, vomiting and abdominal pain.

Skin corrosion/irritation
Slight irritation.

Serious eye damage/irritation
Slight irritation.

Respiratory or skin sensitization
No classification available.

Germ cell mutagenicity
No data available.

Carcinogenicity

No data available.

Reproductive toxicity
No data available.

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.

Additional information
Additional information
Chronic Effects: Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation.
Prolonged or repeated exposure to low concentrations may cause skin irritation and burns, with the possibility of sensitization dermatitis, particularly in workers previously sensitized to formaldehyde. Repeated or prolonged exposure to the substance can damage the kidneys (indicated by albuminuria and hematuria), liver, respiratory tract, lungs, skin, eyes, lens or cornea, or central nervous system (CNS).

SECTION 12: Ecological information

Toxicity
Ecotoxicity: Harmful effect on aquatic organisms. Forms corrosive mixtures with water even if diluted. Damage of fish and plankton.
Harmful effect due to pH shift. Neutralization possible in waste water treatment plants.
Acute Toxicity - Fish: L. idus LC50: 46-100 mg/l /96 h (calculated on the pure substance).
Acute Toxicity - Daphnia: Daphnia magna EC50: 34.2 mg/l /48 h (calculated on the pure substance).
Acute Toxicity - Algae: Desmodesmus subspicatus IC50: 27 mg/l /72 h (calculated on the pure substance).
Acute Toxicity - Bacteria: Ps. putida EC50: 47 mg/l /17 h (calculated on the pure substance).

Persistence and degradability
Not available.

Bioaccumulative potential
Not expected to bio-accumulate.

Mobility in soil
Not available.

Other adverse effects
Environmental fate (exposure) Do not contaminate drains and waterways.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of in accordance with local authority guidelines. Empty containers may still represent a hazard.

Packaging disposal
Dispose of in accordance with local authority guidelines. Empty containers may still represent a hazard.

Other disposal recommendations
Special precautions Nil.

SECTION 14: Transport information

UN Number	3264
Hazchem emergency action code (EAC)	2W
UN Proper Shipping Name	Hydrochloric Acid/Formic Acid 8% Solution
Transport hazard class(es)	8
Packing group	III

Special precautions for user
Class 8 Corrosives are incompatible in a placard load with any of the following: -
Class 1
Class 4.3
Class 5
Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids
Class 7

SECTION 15: Regulatory information

Chemical Safety Assessment
- Poison Schedule: S5.
- 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.

SECTION 16: Other information

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.

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).