



HURST SCIENTIFIC

Safety Data Sheet
Hurstchem Rapid Decal Solution

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Hurstchem Rapid Decal Solution
Product number	HRD-500M, 1L, 2.5L, 5L
Brand	Hurstchem

1.2 Other means of identification

Decalcification Reagent

1.3 Recommended use of the chemical and restrictions on use

Laboratory Reagent

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

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.

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 8

- Flammable liquids, Cat. 2
- Corrosive to metals, Cat. 1
- Acute toxicity, oral, Cat. 4
- Acute toxicity, inhalation, Cat. 4
- Skin corrosion/irritation, Cat. 1A
- Specific target organ toxicity, single exposure, Cat. 3

2.2 GHS label elements, including precautionary statements

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Pictograms



Signal word

Warning

Hazard statement(s)

H225	Highly flammable liquid and vapor
H290	May be corrosive to metals
H302	Harmful if swallowed
H332	Harmful if inhaled
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness

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.
P271	Use only outdoors or in a well-ventilated area.
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].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P316	Get emergency help immediately.
P317	Get medical help.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use ... to extinguish.
P390	Absorb spillage to prevent material-damage.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

Classified as a Dangerous goods according to the ADG Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

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Hazardous components

1. Formic acid

Concentration 1 - 25 % (volume)
CAS no. 64-18-6

2. Hydrochloric acid ($\geq 32\%$)

Concentration 0.5 - 2 % (volume)
CAS no. 7647-01-0

3. Water/Aqua/Eau

Concentration Not specified
CAS no. 7732-18-5

Trade secret statement

Select Buffers < 3.5% Trade Secret

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled	Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.
In case of skin contact	Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.
In case of eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If swallowed	Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

4.2 Most important symptoms/effects, acute and delayed

Irritation of eyes, skin, nose, throat; skin burns, blisters, dermatitis; lacrimation; rhinorrhoea; cough, dyspnea; nausea; eye redness, pain, burns, blurred vision; pulmonary oedema; metabolic acidosis; unconsciousness, haemolysis, haematuria (blood in the urine); central nervous system depression, headache; vomiting bronchitis [potential occupational carcinogen] ; INGES. ACUTE: Burning sensation, sore throat, abdominal pain, cramps, vomiting, diarrhea

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

Get medical advice/attention if you feel unwell. Seek medical attention immediately for acute exposure.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Dry chemical, carbon dioxide, alcohol foam, water.

5.2 Specific hazards arising from the chemical

Toxic gases may evolve.

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Formic acid: Carbon oxides

5.3 Special protective actions for fire-fighters

Wear SCBA (Self-Contained Breathing Apparatus) and full protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment to avoid exposure. Ensure adequate ventilation and avoid dust generation and contact with skin and eyes.

6.2 Environmental precautions

Prevent release to the environment by using barriers.

6.3 Methods and materials for containment and cleaning up

Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Do not breathe vapours. Do not eat, drink, or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Formic acid (CAS: 64-18-6)

TWA (Inhalation): 5 ppm; 9.4 mg/m³; Australia (AU/SWA)

STEL (Inhalation): 10 ppm; 19 mg/m³; Australia (AU/SWA)

2. Hydrochloric acid (>=32%) (CAS: 7647-01-0)

TWA (Inhalation): 5 Peak limitation ppm; 7.5 Peak limitation mg/m³; Australia (AU/SWA)

8.2 Appropriate engineering controls

Use in a well-ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

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

Eye/face protection

Safety glasses or goggles.

Skin protection

Gloves and laboratory coat.

Respiratory protection

If ventilation hood not available wear respirator. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirators when necessary.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

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Physical state	Liquid
Appearance	Colourless
Color	Clear
Odor	Pungent
Melting point/freezing point	Not available
Boiling point or initial boiling point and boiling range	Not available
Flammability	Not available
Lower and upper explosion limit/flammability limit	Not applicable
Decomposition temperature	Not available
pH	Less Than 1
Solubility	Water soluble
Vapor pressure	Not available
Evaporation rate	Not available
Density and/or relative density	Not available
Relative vapor density	Not available

SECTION 10: Stability and reactivity

10.1 Reactivity

Non-reactive

10.2 Chemical stability

Stable under normal conditions of temperature and pressure

10.3 Possibility of hazardous reactions

N/A

10.4 Conditions to avoid

Heat, sources of ignition

10.5 Incompatible materials

Strong oxidising agents, ethoxy ethyl alcohols, arsenates, phosphates, tartrates, lead, barium, strontium and calcium.

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

10.6 Hazardous decomposition products

Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapours (I.e. Carbon monoxide) may be released in a fire.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

N/A

Skin corrosion/irritation

Corrosive to skin, may cause permanent damage, redness, pain and death.

Serious eye damage/irritation

Corrosive to eyes, may cause permanent corneal damage, redness, and pain.

Respiratory or skin sensitization

Inhalation: Toxic by inhalation. May cause bronchitis, severe respiratory distress. Ingestion: Poison to drink. Very corrosive. May cause burns to mouth, throat, stomach, and gastrointestinal tract.

Germ cell mutagenicity

No classification.

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Carcinogenicity

Corrosive to eyes, may cause permanent corneal damage, redness, and pain.

Reproductive toxicity

No classification.

Specific target organ toxicity (STOT) - single exposure

No classification.

Specific target organ toxicity (STOT) - repeated exposure

No classification.

Aspiration hazard

No classification.

Additional information

HEALTH EFFECTS:

Eye Contact Can cause abrasive irritation, otherwise no adverse effects expected.

Skin Contact No adverse effects expected but dust can cause minor irritation, may be harmful if absorbed through the skin.

Inhalation Irritation of the upper respiratory tract may occur causing coughing, headache, dizziness and nausea.

Ingestion Magnesium salts are slowly absorbed. Can cause nausea and vomiting, abdominal pain and diarrhoea.

Formic acid: *TOXICITY:

typ. dose mode specie amount units other

LD50 orl rat 1100 mg/kg

LC50 ihl rat 15 gm/m3/15M

LD50 orl mus 700 mg/kg

LC50 ihl mus 6200 mg/m3/15M

LD50 ipr mus 940 mg/kg

LD50 ivn mus 145 mg/kg

LD50 orl dog 4000 mg/kg

LDLo ivn dog 3000 mg/kg

LDLo ivn rbt 239 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:

THR = MODERATE via intraperitoneal, oral and intravenous routes. SEVERE eye irritation in rabbits. MILD skin toxicity in rabbits. A substance migrating to food from packaging materials.

*CARCINOGENICITY:

Status: NTP Carcinogenesis Studies; selected, June 1986

*MUTATION DATA:

test lowest dose | test lowest dose

----- | -----

mno-esc 70 ppm/3H | pic-esc 100 mmol/L

sln-dmg-ihl 1000 ppm/24H | sln-dmg-ohl 1000 ppm

oms-nml:oth 100 mmol/L | cyt-nml:oth 100 mmol/L

*TERATOGENICITY (Reproductive Effects Data): Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z

Transitional Limit: PEL-TWA 5 ppm [610]

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Final Limit: PEL-TWA 5 ppm [610]
ACGIH: TLV-TWA 5 ppm [015,413]
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): 3
Flammability (F): 2
Reactivity (R): 0

H3: Materials extremely hazardous to health but areas may be entered with extreme care (see NFPA for details).

F2: Materials which must be moderately heated before ignition will occur (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:

Skin and Eye Irritation Data:

skn-rbt 610 mg open MLD

eye-rbt 122 mg SEV

Review: Toxicology Review-2

Standards and Regulations: DOT-Hazard: Corrosive material; Label: Corrosive

DOT-Hazard: Corrosive material; Label: Corrosive, solution

Status: "NIOSH Manual of Analytical Methods" Vol 1 232, Vol 5 S173#

"NIOSH Manual of Analytical Methods" to be revised by June, 1985

Reported in EPA TSCA Inventory, 1983

Meets criteria for proposed OSHA Medical Records Rule

Estimated fatal dose: 30 mL

SECTION 12: Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Not expected to bio-accumulate.

Mobility in soil

Not available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Dispose of in accordance with local authority guidelines.

Packaging disposal

Dispose of in accordance with local authority guidelines.

SECTION 14: Transport information

14.1	UN Number	1779
	Hazchem emergency action code (EAC)	2W
14.2	UN Proper Shipping Name	Formic Acid
14.3	Transport hazard class(es)	8, Sub Risk 3
14.4	Packing group	II

SECTION 15: Regulatory information

15.2 Chemical Safety Assessment

- Poison Schedule: Not scheduled.
- 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

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.
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16.2 Preparation information

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).