

**0.1% Formic Acid in Acetonitrile****LC441-2.5**

Version 1.2 2

Revision Date 11/21/2020

Print Date 08/03/2021

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : 0.1% Formic Acid in Acetonitrile

SDS Number : 000000011214

Product Use Description : Laboratory Use

Manufacturer or supplier's details : CHEMSUPPLY AUSTRALIA PTY LTD  
38-50 Bedford St.  
Gillman SA 5013, Australia

For more information call : +61 8 8440 2000  
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**  
: **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**  
:  
: **CHEMTREC in Australia: +(61)-290372994**  
: (24 hours/day, 7 days/week)

**2. HAZARDS IDENTIFICATION****Classification of the substance or mixture**

Classification of the substance or mixture : Flammable liquids, Category 2  
Acute toxicity, Category 4, Oral  
Acute toxicity, Category 4, Inhalation  
Eye irritation, Category 2A  
Acute toxicity, Category 4, Dermal  
Specific target organ toxicity - single exposure, Category 1,  
Central nervous system

**GHS Label elements, including precautionary statements**

Symbol(s) :



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Signal word : Danger

Hazard statements : Highly flammable liquid and vapour.  
Harmful if swallowed, in contact with skin or if inhaled.  
Causes serious eye irritation.  
Causes damage to organs.

Precautionary statements : **Prevention:**  
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed: Call a POISON CENTER or doctor/ physician.

If eye irritation persists: Get medical advice/ attention.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**

Store in a well-ventilated place. Keep cool.

Store locked up.

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical nature : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration
Acetonitrile	75-05-8	99.9%
Formic acid	64-18-6	0.1%

**4. FIRST AID MEASURES**

- Inhalation : Remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Use oxygen as required, provided a qualified operator is present.  
Call a physician.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Take off contaminated clothing and shoes immediately.  
Wash contaminated clothing before re-use.  
Call a physician.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Call a physician.
- Ingestion : Do NOT induce vomiting.  
Never give anything by mouth to an unconscious person.  
Immediate medical attention is required.
- Notes to physician : Treat as cyanide poisoning.  
Symptoms of poisoning may not appear for several hours.  
Keep under medical supervision for at least 48 hours.

**5. FIREFIGHTING MEASURES**Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)

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	Dry chemical Alcohol-resistant foam Cool closed containers exposed to fire with water spray.
Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	: Highly flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. In case of fire hazardous decomposition products may be produced such as: Hydrogen cyanide (hydrocyanic acid) Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), oxides of nitrogen (NO <sub>x</sub> ), dense black smoke.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus and protective suit.
Further information	: HAZCHEM Code: 2YE

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions	: Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Remove all sources of ignition. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing.
Environmental precautions	: Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.
Methods for cleaning up	: Ventilate the area. No sparking tools should be used. Use explosion-proof equipment. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

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**7. HANDLING AND STORAGE****Handling**

- Advice on safe handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not breathe vapours or spray mist.  
Avoid contact with skin, eyes and clothing.
- Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.  
Take precautionary measures against static discharges.  
Ensure all equipment is electrically grounded before beginning transfer operations.  
Use explosion-proof equipment.  
Keep product and empty container away from heat and sources of ignition.  
No sparking tools should be used.  
No smoking.

**Storage**

- Requirements for storage areas and containers : Store in area designed for storage of flammable liquids.  
Protect from physical damage.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep away from heat and sources of ignition.  
Keep away from direct sunlight.  
Store away from incompatible substances.  
Container hazardous when empty.  
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Materials to avoid : Acids, Bases, Oxidizing agents, Reducing agents, Sulfites, Perchlorates, May attack many plastics, rubbers and coatings.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Acetonitrile	75-05-8	TWA : Time Weighted	40 ppm 67 mg/m3	12 2011	AU NOEL: Australia. National Workplace

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		Average (TWA):			OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended
		SKIN_DES : Skin designation:	Can be absorbed through the skin.	12 2011	AU NOEL: Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended
		STEL : Short Term Exposure Limit (STEL):	60 ppm 101 mg/m <sup>3</sup>	12 2011	AU NOEL: Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended
Formic acid	64-18-6	TWA : Time Weighted Average (TWA):	5 ppm 9.4 mg/m <sup>3</sup>	12 2011	AU NOEL: Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended
		STEL : Short Term Exposure Limit (STEL):	10 ppm 19 mg/m <sup>3</sup>	12 2011	AU NOEL: Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A), as amended

#### Engineering measures

Use with local exhaust ventilation.

Prevent vapour buildup by providing adequate ventilation during and after use.

#### Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.  
Use NIOSH approved respiratory protection.

Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.

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	Replace when worn.
Eye protection	: Do not wear contact lenses. Wear as appropriate: Safety glasses with side-shields If splashes are likely to occur, wear: Goggles or face shield, giving complete protection to eyes
Skin and body protection	: Wear as appropriate: Solvent-resistant apron Flame retardant antistatic protective clothing. If splashes are likely to occur, wear: Protective suit
Hygiene measures	: When using do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately. Remove and wash contaminated clothing before re-use. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing.
Protective measures	: Ensure that eyewash stations and safety showers are close to the workstation location.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid
Colour	: colourless
Odour	: sweet ether-like
pH	: 4.1
Melting point/range	: -46 °C
Boiling point/boiling range	: 82 °C
Flash point	: 46 °F (8 °C) Method: closed cup
Evaporation rate	: 5 Method: Compared to Butyl acetate.

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Lower explosion limit	:	3 %(V)
Upper explosion limit	:	16 %(V)
Vapour pressure	:	97 hPa at 20 °C(68 °F)
Vapour density	:	1.42 Note: (Air = 1.0)
Density	:	0.7822 g/cm <sup>3</sup> at 20 °C 0.7767 g/cm <sup>3</sup> at 25 °C
Water solubility	:	Note: completely soluble
Partition coefficient: n-octanol/water	:	Note: No data available
Ignition temperature	:	524 °C Note: Information regarding ignition temperature applies only to the solvent.
Viscosity, dynamic	:	Note: No data available
Viscosity, kinematic	:	Note: No data available

**10. STABILITY AND REACTIVITY**

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	Heat, flames and sparks.



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Keep away from direct sunlight.

Incompatible materials to avoid

: Acids  
Bases  
Oxidizing agents  
Reducing agents  
Sulfites  
Perchlorates  
May attack many plastics, rubbers and coatings.

Hazardous decomposition products

: In case of fire hazardous decomposition products may be produced such as:  
Hydrogen cyanide (hydrocyanic acid)  
Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

**11. TOXICOLOGICAL INFORMATION**Acute oral toxicity  
Acetonitrile

: LD50: 617 mg/kg  
Species: Mouse, male and female  
Method: OECD Test Guideline 401

Formic acid

: LD50: 730 mg/kg  
Species: Rat  
Method: OECD Test Guideline 401

Acute inhalation toxicity  
Acetonitrile

: LC50: 16000 ppm, vapour  
Exposure time: 4 h  
Species: Rat

Acute dermal toxicity  
Acetonitrile

: LD50: > 2,000 mg/kg  
Species: Rabbit

Formic acid

: Note: No data available

Skin irritation  
Acetonitrile

: Species: Rabbit  
Result: No skin irritation  
Method: OECD Test Guideline 404

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- Exposure time: 4 h
- Formic acid : Species: Rabbit  
Result: Causes severe burns.  
Classification: Corrosive  
Method: OECD
- Eye irritation  
Acetonitrile : Species: Rabbit  
Result: Irritating to eyes.  
Method: OECD Test Guideline 405
- Formic acid : Species: Rabbit  
Result: Risk of serious damage to eyes.  
Method: OECD Test Guideline 405
- Sensitisation  
Acetonitrile : Buehler Test  
Species: Guinea pig  
Result: Did not cause sensitisation on laboratory animals.  
Method: OECD
- Formic acid : Buehler Test  
Species: Guinea pig  
Classification: non-sensitizing
- Genotoxicity in vitro  
Formic acid : Test Method: sister chromatid exchange assay  
Cell type: Chinese hamster fibroblasts  
Metabolic activation: with and without metabolic activation  
Result: negative  
Method: OECD Test Guideline 479
- : Test Method: Ames test  
Metabolic activation: with and without metabolic activation  
Result: negative  
Method: OECD Test Guideline 471
- : Test Method: In vitro gene mutation study in mammalian cells  
Cell type: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Result: negative  
Method: OECD Test Guideline 476

Genotoxicity in vivo

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Formic acid : Species: Drosophila melanogaster (vinegar fly)  
Method: OECD Test Guideline 477  
Result: negative

**12. Ecological information**

Toxicity to fish  
Acetonitrile : flow-through test  
LC50: 1,640 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)

Formic acid : static test  
LC50: 130 mg/l  
Exposure time: 96 h  
Species: Danio rerio (zebra fish)  
Test substance: REACH dossier "read-across"  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates  
Formic acid : Immobilization  
EC50: 365 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
Test substance: REACH dossier "read-across"  
Method: OECD Test Guideline 202

Toxicity to algae  
Acetonitrile : static test  
NOEC: 400 mg/l  
Exposure time: 72 h  
Species: Phaeodactylum tricornutum

static test  
ErC50: 9,696 mg/l  
Exposure time: 72 h  
Species: Phaeodactylum tricornutum

Formic acid : Growth rate  
EC50: 1,240 mg/l  
Exposure time: 72 h

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Species: Pseudokirchneriella subcapitata (green algae)  
Test substance: REACH dossier "read-across"  
Method: OECD Test Guideline 201

**13. DISPOSAL CONSIDERATIONS**

Product : In accordance with local and national regulations.

**14. TRANSPORT INFORMATION****ADR**

UN/ID No. : UN 1648  
Description of the goods : ACETONITRILE SOLUTION  
Class : 3  
Packing group : II  
Classification Code : F1  
Hazard Identification Number : 33  
Labels : 3

**ADG\_ROAD**

UN/ID No. : UN 1648  
Description of the goods : ACETONITRILE SOLUTION  
Class : 3  
Packing group : II  
Hazard Identification Number : 33  
Labels : 3

**IATA**

UN/ID No. : UN 1648  
Description of the goods : Acetonitrile solution  
Class : 3  
Packing group : II  
Labels : 3  
Packing instruction (cargo aircraft) : 364  
Packing instruction (passenger aircraft) : 353  
Packing instruction (passenger aircraft) : Y341

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**IMDG**

UN/ID No. : UN 1648  
Description of the goods : ACETONITRILE SOLUTION  
Class : 3  
Packing group : II  
Labels : 3  
EmS Number 1 : F-E  
EmS Number 2 : S-D  
  
Marine pollutant : no

HAZCHEM Code: 2YE

**15. REGULATORY INFORMATION****National regulatory information**

Standard for the Uniform : No poison schedule number allocated  
Scheduling of Medicines and  
Poisons

**Other international regulations****Notification status**

US. Toxic Substances : On TSCA Inventory  
Control Act  
  
Australia. Industrial Chemical : On the inventory, or in compliance with the inventory  
(Notification and  
Assessment) Act  
  
Canada. Canadian : All components of this product are on the Canadian DSL  
Environmental Protection Act  
(CEPA). Domestic  
Substances List (DSL)  
  
Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory  
  
Korea. Existing Chemicals : On the inventory, or in compliance with the inventory  
Inventory (KECI)  
  
Philippines. The Toxic : On the inventory, or in compliance with the inventory  
Substances and Hazardous

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and Nuclear Waste Control  
Act

China. Inventory of Existing  
Chemical Substances  
(IECSC) : On the inventory, or in compliance with the inventory

New Zealand. Inventory of  
Chemicals (NZIoC), as  
published by ERMA New  
Zealand : On the inventory, or in compliance with the inventory

**16. OTHER INFORMATION****Sources of key data used to compile the Safety Data Sheet:**

1. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]
2. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]
3. List of Designated Hazardous Substances [NOHSC:10005(1999)]
4. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]
5. Australian Dangerous Goods Code, No. 6 [National Road Transport Commission]
6. Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP), No. 19 [NDPSC: 2004]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Prepared by:  
Honeywell Performance Materials and Technologies Product Stewardship Group

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