

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

Version 2.0

Issuing date 12/06/2010

Revision Date 11/12/2019

Print Date 08/03/2021

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name : 0.1% Formic Acid in Acetonitrile

Number : 000000011214

Recommended use of the chemical and restrictions on use : Laboratory Use

Manufacturer or supplier's details : Honeywell Specialty Chemicals Seelze GmbH
Wunstorfer Straße 40
Seelze, 30926

For further information, please contact: : 1-800-368-0050
+1-231-726-3171
(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**
: **In Japan: +(81)-345209637**
: (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
Specific target organ toxicity - single exposure, Category 1, Central nervous system

GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: **Danger**

Hazard statements

: **Highly flammable liquid and vapour.**

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Precautionary statements

Harmful if swallowed.

Causes serious eye irritation.

Harmful if inhaled.

Causes damage to organs.

: 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.

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Chemical name

CAS-No.

Concentration

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Acetonitrile	75-05-8	>99.00 %
Acetonitrile		
Formic acid	64-18-6	0.10 %
Formic acid		

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 ₂) 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	: Flammable. Vapours may form explosive mixtures with air. Vapours are heavier than air and may spread along floors.

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Vapors may travel to areas away from work site before igniting/flashback to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Hydrogen cyanide (hydrocyanic acid)
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : 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 and materials for containment and 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).

7. HANDLING AND STORAGE**Handling**

Precautions for 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.

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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

Conditions for safe storage, including any incompatibilities : 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.

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

Components	CAS-No.	Value	Control parameters	Update	Basis
Formic acid Formic acid	64-18-6	TWA : Time weighted average	9.4 mg/m ³ (5 ppm)	04 2007	Japan Society for Occupational Health: Japan Society for Occupational Health allowable concentration recommendation value

Appropriate engineering controls

Use with local exhaust ventilation.

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

Individual protection measures, such as 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.
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 |

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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.

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/cm³ at 20 °C
0.7767 g/cm³ 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

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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. 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 ₂), carbon monoxide (CO), oxides of nitrogen (NO _x), dense black smoke.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: Acute toxicity estimate: 617.62 mg/kg Method: Calculation method
Acute inhalation toxicity	: Acute toxicity estimate: 10.97 mg/l Method: Calculation method
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
Formic acid

: Species: Drosophila melanogaster (vinegar fly)

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Method: OECD Test Guideline 477

Result: negative

Further information
Acetonitrile

: STOT - single exposure:
The substance or mixture is classified as specific target organ
toxicant, single exposure, category 1.
May cause convulsions.
May cause neurotoxic effects.
Based on Human Evidence.

12. ECOLOGICAL INFORMATIONToxicity 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

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Formic acid

Species: *Phaeodactylum tricornutum*

: Growth rate
EC50: 1,240 mg/l
Exposure time: 72 h
Species: *Pseudokirchneriella subcapitata* (green algae)
Test substance: REACH dossier "read-across"
Method: OECD Test Guideline 201

13. DISPOSAL CONSIDERATIONS

WDPCCL Waste Disposal and Public Cleansing Law : Specially Controlled Industrial Waste

Disposal methods : 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

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

15. REGULATORY INFORMATION**National regulatory information**

Fire Service Law : Class 4: Flammable liquid.
JP FSL DS4 Type 1 petroleum
Storage Limit: 400 liters Hazardous rank II - 危険等級II

Component : Acetonitrile 75-05-8

Vessel Safety Law : Flammable liquids (Article 2 and 3 of rules on shipping and
JP VSL storage of dangerous goods and its Attached Table 1)

Component : Acetonitrile 75-05-8

Aviation Law : Flammable liquid (Article 194 of The Enforcement Rules of
JP AVL Aviation Law and its Attached Table 1)

Component : Acetonitrile 75-05-8

Fire Service Law : Group 4 Flammable liquids
Type 1 petroleum
Hazardous rank II
Water soluble
Keep away from fire

Japan. ISHL Hazardous : 15
Substances Labeling Listed
Requirements (ISHL Art. 57, Acetonitrile 75-05-8
Enforcement Order Art. 18,
Enforcement Rule Art. 30 &
31, as amended through 6
April 2018)

Japan. SDS and Risk : 15

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Assessment Requirements
(ISHL Art. 57-2 and 57-3,
Enforcement Order Art. 18-2,
Enforcement Rule Art. 34-2
and 34-2-2), as amended
Poisonous and Deleterious
Substances Control Law

Listed
Acetonitrile 75-05-8

: Deleterious substance not for pharmaceutical use
32.3
Listed
Acetonitrile 75-05-8

Other international regulations**Notification status**

US. Toxic Substances
Control Act : On TSCA Inventory

Australia. Industrial Chemical
(Notification and
Assessment) Act : On the inventory, or in compliance with the inventory

Canada. Canadian
Environmental Protection Act
(CEPA). Domestic
Substances List (DSL) : All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Existing Chemicals
Inventory (KECI) : On the inventory, or in compliance with the inventory

Philippines. The Toxic
Substances and Hazardous
and Nuclear Waste Control
Act : On the inventory, or in compliance with the inventory

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

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	HMIS III	NFPA
Health hazard	: 2*	2
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

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.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group