

Formic acid**33015-1L**

Version 1.1

Revision Date 08/23/2021

Print Date 11/19/2024

SECTION 1. IDENTIFICATION

Product name : Formic acid

Number : 000000020237

Product Use Description : Laboratory chemicals

Manufacturer or supplier's details : Honeywell International Inc.
115 Tabor Road
Morris Plains, NJ 07950-2546

For more information call : 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
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid

Color : colourless

Odor : stinging

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 3
Acute toxicity, Category 4, Oral
Acute toxicity, Category 3, Inhalation
Skin corrosion, Category 1A
Serious eye damage, Category 1

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GHS Label elements, including precautionary statements

Symbol(s)

:



Signal word

: Danger

Hazard statements

: Flammable liquid and vapour.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Toxic if inhaled.

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.
Avoid breathing 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: Rinse mouth. Do NOT induce vomiting.
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.
Immediately call a POISON CENTER/ doctor.
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 container tightly closed.

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Keep cool.
Store locked up.

Disposal:

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

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : CH₂O₂

Chemical nature : Substance

Chemical name	CAS-No.	Concentration
Formic acid	64-18-6	>=90.00 - <=100.00 %

SECTION 4. FIRST AID MEASURES

General advice : First aider needs to protect himself. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation : If inhaled, remove to fresh air. Call a physician immediately.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off immediately all contaminated clothing. Call a physician immediately.

Eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Protect unharmed eye.

Ingestion : Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately.

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Notes to physician

Most important symptoms/effects, acute and delayed : No information available.

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

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during firefighting : Fire may cause evolution of:
Carbon monoxide

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Wear personal protective equipment. Unprotected persons must be kept away.
Remove all sources of ignition.

Environmental precautions : Do not flush into surface water or sanitary sewer system.
Prevent further leakage or spillage if safe to do so.

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Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
Sweep up and shovel into suitable containers for disposal.
Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus.

SECTION 7. HANDLING AND STORAGE**Handling**

Precautions for safe handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Use only acid resistant equipment.

Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking.
Take measures to prevent the build up of electrostatic charge.
Use explosion-proof equipment.
Vapours may form explosive mixtures with air.

Storage

Conditions for safe storage, including any incompatibilities : Store in original container.
Keep containers tightly closed in a dry, cool and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Do not breathe vapours or spray mist.
Do not get in eyes, on skin, or on clothing.

Engineering measures : Use with local exhaust ventilation.

Eye protection : Wear as appropriate:
Goggles or face shield, giving complete protection to eyes

Hand protection : Impervious gloves
Gloves must be inspected prior to use.
Replace when worn.

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- Skin and body protection : acid-proof protective clothing
- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Hygiene measures : Separate rooms are required for washing, showering and changing clothes.
Keep working clothes separately.
Take off all contaminated clothing immediately.
Remove and wash contaminated clothing before re-use.
Wash hands before breaks and at the end of workday.
When using do not eat or drink.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Formic acid	64-18-6	STEL : Short term exposure limit	(10 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Formic acid	64-18-6	TWA : Time weighted average	(5 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Formic acid	64-18-6	REL : Recommended exposure limit (REL):	9 mg/m3 (5 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Formic acid	64-18-6	PEL : Permissible exposure limit	9 mg/m3 (5 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended

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Formic acid	64-18-6	TWA : Time weighted average	9 mg/m3 (5 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Color	: colourless
Odor	: stinging
Odor threshold	: Note: No data available
pH	: Note: acidic
Melting point/range	: 4 °C Method: OECD Test Guideline 102
Boiling point/boiling range	: ca. 100.4 °C at 1,013 hPa Method: OECD Test Guideline 103
Flash point	: 121.1 °F (49.5 °C)
Evaporation rate	: Note: No data available
Lower explosion limit	: 12 %(V) at 42 °C
Upper explosion limit	: 38 %(V) Note: No data available
Vapor pressure	: 42 hPa at 20 °C(68 °F)Method: OECD 104

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Vapor density	: Note: No data available
Density	: 1.22 g/cm ³ at 20 °C Method: OECD Test Guideline 109
Water solubility	: Note: soluble
Partition coefficient: n-octanol/water	: Note: No data available
Ignition temperature	: Note: No data available
Auto-ignition temperature	: 528 °C
Decomposition temperature	: 350 °C Note: Decomposition temperature
Viscosity, dynamic	: 1.72 mPa.s at 20 °C
Viscosity, kinematic	: 1.41 mm ² /s at 20 °C
Molecular weight	: 46.03 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Heating can release hazardous gases. Hazardous polymerisation does not occur.
Conditions to avoid	: Keep away from heat and sources of ignition.

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Incompatible materials : Alkalis
Amines
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute inhalation toxicity : LC50: 7.85 mg/l , vapour
Exposure time: 4 h
Species: Rat
Method: OECD Test Guideline 403

Acute dermal toxicity : Note: No data available

Skin irritation : Species: Rabbit
Result: Causes severe burns.
Classification: Corrosive
Method: OECD

Eye irritation : Species: Rabbit
Result: Risk of serious damage to eyes.
Method: OECD Test Guideline 405

Sensitisation : Buehler Test
Species: Guinea pig
Result: non-sensitizing
Method: OECD Test Guideline 406

Genotoxicity in vitro : Test Method: sister chromatid exchange assay
Cell type: Chinese hamster fibroblasts

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	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	: Species: <i>Drosophila melanogaster</i> (vinegar fly) Method: OECD Test Guideline 477 Result: negative
Carcinogenicity	: Species: Rat Test substance: REACH dossier "read-across" Note: Animal testing did not show any carcinogenic effects.
Reproductive toxicity	: Test Method: Two-generation study Species: Rat Application Route: Oral NOAEL: 1,000 mg/kg bw/d NOAEL: 1,000 mg/kg bw/d Note: REACH dossier "read-across"
Teratogenicity	: Species: Rabbit Application Route: Oral NOAEL: 1,000 mg/kg bw/d NOAEL: 1,000 mg/kg bw/d No observed adverse effect level: 1,000 mg/kg bw/d Method: OECD Test Guideline 414 Note: REACH dossier "read-across"

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

- Toxicity to fish : 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 : 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 : 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
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : semi-static test
NOEC: ≥ 100 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test substance: anhydrous substance
Method: OECD Test Guideline 211

Elimination information (persistence and degradability)

- Bioaccumulation : Note: Bioaccumulation is unlikely.
- Biodegradability : Result: Readily biodegradable
Value: 100 %
Method: OECD 301 E

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Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1779
 Proper shipping name : Formic acid
 Class : 8
 Packing group : II
 Hazard Labels : 8 (3)

IATA UN/ID No. : UN 1779
 Description of the goods : Formic acid
 Class : 8
 Packaging group : II
 Hazard Labels : 8 (3)
 Packing instruction (cargo aircraft) : 855
 Packing instruction (passenger aircraft) : 851
 Packing instruction (passenger aircraft) : Y840

IMDG UN/ID No. : UN 1779
 Description of the goods : Formic acid
 Class : 8
 Packaging group : II
 Hazard Labels : 8 (3)
 EmS Number : F-E, S-C
 Marine pollutant : no
 IMDG Code segregation group 1 – ACIDS,

SECTION 15. REGULATORY INFORMATION

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Inventories

- 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. Inventory of Chemicals and Chemical Substances (PICCS) : 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

National regulatory information

US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 5000 lbs
: Formic acid 64-18-6

SARA 302 Components : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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SARA 313 Components	:	The following components are subject to reporting levels established by SARA Title III, Section 313:
	:	Formic acid 64-18-6
SARA 311/312 Hazards	:	Fire Hazard Acute Health Hazard
CERCLA Reportable Quantity	:	5000 lbs
California Prop. 65	:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
Massachusetts RTK	:	Formic acid 64-18-6
New Jersey RTK	:	Formic acid 64-18-6
Pennsylvania RTK	:	Formic acid 64-18-6

SECTION 16. OTHER INFORMATION

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

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

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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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