Formamide SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Formamide
* Catalog Number: E2922
* CAS Number: 75-12-7
* IUPAC Name: --

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals
* TollFree: +1 877 796-6397
* Tel: +1 832 582-8158
* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Corrosive to metals: Category 1. H290
Skin irritation: Category 3. H316
Eye irritation: Category 2. H320
Specific target organ toxicity (single exposure): Category 3. H336
Carcinogenicity: Category 2. H351
Reproductive toxicity: Category 1. H360
Not classified. H360D
Specific target organ toxicity (repeated exposure): Category 2. H373

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word Danger

Hazard statement(s)	H290: May be corrosive to metals H316: Causes mild skin irritation H320: Causes eye irritation H336: May cause drowsiness or dizziness H351: Suspected of causing cancer H360: May damage fertility or the unborn child H360D: May damage the unborn child H373: May causes damage to organs through prolonged or repeated exposure
Precautionary statement(s)	None.
Prevention	P203: Obtain, read and follow all safety instructions before use. P234: Keep only in original container. P260: Do not breathe dust/fume/gas/mist/vapors/spray. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264+P265: Wash hands thoroughly after handling. Do not touch eyes. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Response	P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351: IF IN EYES: Rinse cautiously with water for several minutes. P318: if exposed or concerned, get medical advice. P319: Get medical help if you feel unwell. P332+P317: If skin irritation occurs: Get medical help. P337+P317: If eye irritation persists: Get medical help. P338: Remove contact lenses, if present and easy to do. Continue rinsing. P390: Absorb spillage to prevent material damage.
Storage	P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up. P406: Store in corrosive resistant container with a resistant inner liner.
Disposal	P501: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Formamide

CAS Number: 75-12-7

PubChem CID: 713

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest. Refer for medical attention.

Skin contact: Remove contaminated clothes. Rinse skin with plenty of water or shower.

Eye contact: Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Ingestion: Rinse mouth. Refer for medical attention .

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO2), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Fire Extinguishing Agents: Dry chemical, water, alcohol foam, or carbon dioxide. (USCG, 1999)

Use water spray, alcohol-resistant foam, powder, carbon dioxide.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: 310 °F (NTP, 1992)

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Store and dispose of according to local regulations.

SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

The following wastewater treatment technologies have been investigated for formamide: Concentration process: Biological treatment.

Women of childbearing potential should handle this substance only in a hood and should take precautions to avoid skin contact with the liquid because of the ease with which it passes through the skin.

SRP: Contaminated protective clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose, or clean the clothing. Quality assurance to ascertain the completeness of the cleaning procedures should be implemented before the decontaminated protective clothing is returned for reuse by the workers. Contaminated clothing should not be taken home at end of shift, but should remain at employee's place of work for cleaning.

SRP: The scientific literature for the use of contact lenses in industry is conflicting. The benefit or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

SMALL SPILLS AND LEAKAGE: If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should store this chemical under refrigerated temperatures, and protect it from moisture. If possible, it would be prudent to store this compound under inert atmosphere. (NTP, 1992)

Separated from oxidants, acids and bases. Dry.

For storage ... tanks of stainless steel or aluminum are indicated. When small amounts of iron are permissible, mild steel can be used for tank cars and drums. Caffeine, adenine and other purines stabilize formamide in storage ...

7.2 Conditions for safe storage, including any incompatibilities

Separated from oxidants, acids and bases. Dry.

For storage ... tanks of stainless steel or aluminum are indicated. When small amounts of iron are permissible, mild steel can be used for tank cars and drums. Caffeine, adenine and other purines stabilize formamide in storage ...

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

Store in original container. Keep upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

skin absorption (H)

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: Formamide appears as a colorless liquid with a faint odor of ammonia. Denser than water. Freezing point 36 °F. (USCG, 1999)

b) Odor: Faint ammonia odor

c) Odor threshold: No data available

d) pH: 7.1 (0.5 molar aqueous soln)

e) Melting point/freezing point: 36.5 °F (NTP, 1992)

f) Initial boiling point and boiling range: 410 °F at 760 mmHg (decomposes) (NTP, 1992)

g) Flash point: 310 °F (NTP, 1992)

h) Evaporation rate: No data available

i) Flammability (solid, gas): No data available

j) Upper/lower flammability or explosive limits: No data available

k) Vapor pressure: 3 mmHg at 86 °F ; 760 mmHg at 410.9 °F (NTP, 1992)

l) Vapor density: No data available

m) Relative density: 1.1334 at 68 °F (USCG, 1999) - Denser than water; will sink

n) Water solubility: greater than or equal to 100 mg/mL at 66 °F (NTP, 1992)

o) Partition coefficient: n-octanol/water: Log P: No data available

p) Auto-ignition temperature: 310 °F (USCG, 1999)

q) Decomposition temperature: No data available

r) Viscosity: nX10+5 @ 20 °C= 4320; @ 30 °C= 2926

s) Explosive properties: No data available

t) Oxidizing properties: No data available

9.2 Other information

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

Incompatible with iodine, pyridine and sulfur trioxide.

Bottles containing a modified Karl Fischer reagent with formamide replacing methanol developed gas pressure during several months and burst. No reason was apparent, but slow absorption of moisture, formation of sulfuric acid and liberation of carbon monoxide from the formamide seems a likely sequence.

A mixture containing 51% of calcium nitrate and 12% ammonium nitrate with 27% formamide and 10% water is detonable @ -20 °C.

Oxidizers, iodine pyridine, sulfur, trioxide, copper, brass, lead [Note: Hygroscopic (i.e., absorbs moisture from the air)].

Formamide is hydrolyzed very slowly at room temperature. Acids, bases and elevated temperatures accelerate the hydrolysis.

Oxidizers, iodine, pyridine, sulfur trioxide, copper, brass, lead [Note: Hygroscopic (i.e., absorbs moisture from the air).]

10.6 Hazardous decomposition products

No data available.

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

No data available.

Serious eye damage/eye irritation:

No data available.

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

Suspected of causing cancer (H351).

Reproductive toxicity:

May damage fertility or the unborn child (H360).

Specific target organ toxicity (single exposure):

H373

Specific target organ toxicity (repeated exposure):

No data available.

Aspiration hazard:

No data available.

11.2 Additional information

Carcinogen classification:

Formamide

TR-541: Toxicology and Carcinogenesis Studies of Formamide (CASRN 75-12-7) in F344/N Rats and B6C3F1 Mice (Gavage Studies) (2008)

05/16/07

No Evidence

No Evidence

Clear Evidence

Equivocal Evidence

Under the conditions of these 2-year gavage studies, there was no evidence of carcinogenic activity of formamide in male or female F344/N rats administered 20, 40, or 80 mg/kg. There was clear evidence of carcinogenic activity of formamide in male B6C3F1 mice based on increased incidences o

Exposure routes:

The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

inhalation, ingestion, skin and/or eye contact

Signs and symptoms of exposure:

Drowsiness. Headache. Nausea. Diarrhoea.

Redness.

Redness.

See Inhalation.

irritation eyes, skin, mucous membrane; drowsiness, lassitude (weakness, exhaustion); nausea; acidosis; skin eruptions; In Animals: reproductive effects

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Formamide's production and use as an intermediate in the chemical industry; to produce heterocyclic compounds, pharmaceuticals, crop protection agents, fungicides, and pesticides; as a solvent in the manufacture and processing of plastics; to produce formic acid; to remove coating from copper conductors; in the spinning of acrylonitrile copolymers; in the antistatic finishing of plastics or formation of conductive coatings on plastic particles; may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 6.1X10-2 mm Hg at 25 °C indicates formamide will exist solely as a vapor in the ambient atmosphere. Vapor-phase formamide will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 8.0 days. If released to soil, formamide is expected to have very high mobility based upon a Koc of 3.6. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.4X10-9 atm-cu m/mole. If released into water, formamide is not expected to adsorb to suspended solids and sediment based upon the Koc. Several biodegradation screening studies have observed significant biodegradation of formamide which suggests that biodegradation may be important. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law c

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

No other adverse ecological effects identified.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered under REACH

SARA 302 Components:

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

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute (short-term) health hazard

Chronic (long-term) health hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: Formamide

- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Reproductive Toxicity Authoritative List - EC Annex VI CMRs - Cat. 1B Report - if used as a fragrance or flavor ingredient

- EFSA Legal Basis: Regulation (EC) No 1831/2003 (amended)

- Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to us

- TSCA Requirements: Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. Formam

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.