

Material Safety Data Sheet

Formamide



Section 1. Product and Company Identification

Product name : Formamide
Product code : 4650
Synonym : Methanamide
Material uses : Other non-specified industry: Analytical reagent.
Manufacturer : EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday - Friday: 8:00 - 5:00 PM
Validation date : **5/24/2007.**
Print date : 5/24/2007.
In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state : Liquid. (Oily liquid.)
Odor : Ammoniacal.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : WARNING!
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: REPRODUCTIVE SYSTEM, MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
BIRTH DEFECT HAZARD.
CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT.
Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects
Eyes : Irritating to eyes.
Skin : Toxic in contact with skin. Irritating to skin.
Inhalation : Toxic by inhalation. Irritating to respiratory system.
Ingestion : Toxic if swallowed.
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.
See toxicological information (section 11)

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Section 3. Composition/Information on Ingredients

United States

<u>Name</u>	<u>CAS number</u>	<u>% by Weight</u>
Formamide	75-12-7	100

Section 4. First Aid Measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire Fighting Measures

- Flammability of the product** : No specific hazard.
- Products of combustion** : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂ etc.).
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Not available.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Section 7. Handling and Storage

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.
- Additional information** : Refrigerate. Store at 2C to 8C.

Section 8. Exposure Controls/Personal Protection

Product name

Exposure limits

United States

Formamide

ACGIH TLV (United States, 1/2006). Skin

TWA: 18 mg/m³ 8 hour/hours. Form: All forms

TWA: 10 ppm 8 hour/hours. Form: All forms

NIOSH REL (United States, 12/2001). Skin

TWA: 15 mg/m³ 10 hour/hours. Form: All forms

TWA: 10 ppm 10 hour/hours. Form: All forms

OSHA PEL 1989 (United States, 3/1989).

STEL: 45 mg/m³ 15 minute/minutes. Form: All forms

STEL: 30 ppm 15 minute/minutes. Form: All forms

TWA: 30 mg/m³ 8 hour/hours. Form: All forms

TWA: 20 ppm 8 hour/hours. Form: All forms

Consult local authorities for acceptable exposure limits.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended: splash goggles

Skin

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Body: Recommended: lab coat

Respiratory

- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: nitrile rubber

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

- Physical state** : Liquid. (Oily liquid.)
- Flash point** : Open cup: 154.85°C (310.7°F).
- Color** : Colorless to light yellow.
- Odor** : Ammoniacal.
- Molecular weight** : 45.05 g/mole
- Molecular formula** : C-H3-N-O

Section 9. Physical and Chemical Properties

Boiling/condensation point	: Decomposition temperature: 209.85°C (409.7°F)
Melting/freezing point	: 2.85°C (37.1°F)
Relative density	: 1.1334 (Water = 1)
Vapor density	: 1.56 (Air = 1)
Evaporation rate	: 0.004 compared with(n-BUTYL ACETATE=1)

Section 10. Stability and Reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
Hazardous polymerization	: Will not occur.

Section 11. Toxicological Information

Toxicity data

United States

<u>Product/ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Formamide	LD50	5577 mg/kg	Oral	Rat
	LD50	3150 mg/kg	Oral	Mouse
	LD50	3150 mg/kg	Oral	Mammal

Chronic effects on humans : Causes damage to the following organs: the reproductive system, mucous membranes, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Other toxic effects on humans : Very hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Sensitization

Ingestion : No known significant effects or critical hazards.

Inhalation : Irritating to respiratory system.

Eyes : Irritating to eyes.

Skin : Irritating to skin.

Section 12. Ecological Information

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : These products are carbon oxides (CO, CO₂) and water, nitrogen oxides (NO, NO₂ etc.).

Toxicity of the products of biodegradation : The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 13. Disposal Considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	-	CHEMICALS, N.O.S.	-	-		Not available.

PG* : Packing group

Section 15. Regulatory Information

United States

- HCS Classification** : Toxic material
Irritating material
Target organ effects
- U.S. Federal regulations** : TSCA 8(b) inventory: Listed
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Formamide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Formamide : Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
- State regulations** : Pennsylvania RTK: Formamide : (generic environmental hazard)
Massachusetts RTK: Formamide
New Jersey: Formamide

Canada

- WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).
CEPA DSL/CEPA NDSL : CEPA DSL: Formamide

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Section 15. Regulatory Information

Hazard symbol/symbols :



Risk phrases : R61- May cause harm to the unborn child.

Safety phrases : S53- Avoid exposure - obtain special instructions before use.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

International regulations

International lists : Australia (NICNAS): Formamide

China: Formamide

Germany water class: Formamide

Japan (METI): Formamide

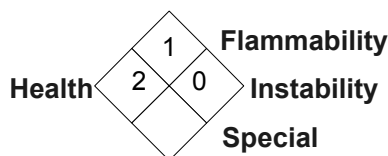
Korea (TCCL): Formamide

Philippines (RA6969): Formamide

Section 16. Other Information

Label requirements : WARNING!
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: REPRODUCTIVE SYSTEM,
MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS
SYSTEM, EYE, LENS OR CORNEA.
BIRTH DEFECT HAZARD.
CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT.

National Fire Protection Association (U.S.A.) :



Notice to reader

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