Material Safety Data Sheet

Version 3.6
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Formamide
Product Number	:	47680
Brand	:	Fluka
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect, Irritant, Teratogen, Reproductive hazard, Mutagen

Target Organs

Blood, Central nervous system, Liver, KidneyBlood, Central nervous system, Liver, Kidney

GHS Classification

Acute toxicity, Inhalation (Category 3)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 1B)
Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H318	Causes serious eye damage.
H331	Toxic if inhaled.
H340	May cause genetic defects.
H360	May damage fertility or the unborn child.

Precautionary statement(s)

P201	Obtain special instructions before use.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Amide C1
Formic amide

Formula : CH_3NO
Molecular Weight : 45.04 g/mol

Component		Concentration
Formamide		
CAS-No.	75-12-7	-
EC-No.	200-842-0	
Index-No.	616-052-00-8	
Registration number	01-2119496064-35-XXXX	

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Formamide	75-12-7	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Skin & eye irritation Liver & kidney damage Danger of cutaneous absorption			
		TWA	20 ppm 30 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	30 ppm 45 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	10 ppm 15 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption			

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Immersion protection
Material: Nature latex/chloroprene
Minimum layer thickness: 0.6 mm
Break through time: > 480 min
Material tested:Lapren® (Aldrich Z677558, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested:Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	7.1 at 23 g/l
Melting point/freezing point	Melting point/range: 2 - 3 °C (36 - 37 °F)
Boiling point	210 °C (410 °F)
Flash point	150 °C (302 °F) - closed cup
Ignition temperature	500 °C (932 °F)
Autoignition temperature	no data available
Lower explosion limit	2.7 %(V)
Upper explosion limit	19 %(V)
Vapour pressure	0.11 hPa (0.08 mmHg) at 20 °C (68 °F) 40.00 hPa (30.00 mmHg) at 129 °C (264 °F) 1.29 hPa (0.97 mmHg) at 70 °C (158 °F)
Density	1.134 g/mL at 25 °C (77 °F)
Water solubility	completely miscible
Partition coefficient: n-octanol/water	log Pow: -0.82
Relative vapour density	1.56 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
acids, Bases, Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

Thermal decomposition
> 90 °C

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 5,577 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 6 h - 3900 ppm

Dermal LD50
LD50 Dermal - rabbit - 17,000 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitization
Did not cause sensitization on laboratory animals.

Germ cell mutagenicity
In vivo tests showed mutagenic effects

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	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.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - rat - Oral
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

May cause reproductive disorders.

no data available

Teratogenicity

Developmental Toxicity - rat - Skin

Effects on Embryo or Fetus: Fetal death.

May cause congenital malformation in the fetus.

Presumed human reproductive toxicant

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: LQ0525000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - > 4,600 - < 9,300 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - > 500 mg/l - 48 h
Toxicity to algae	- Desmodesmus subspicatus (green algae) - 1,141 mg/l - 72 h
Toxicity to bacteria	- Pseudomonas putida - > 10,000 mg/l - 17 h

Persistence and degradability
Readily biodegradable, according to appropriate OECD test.

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

Adsorbed organic bound halogens (AOX)	Remarks: Product does not contain any organic halogens.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Irritant, Teratogen, Reproductive hazard, Mutagen

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

SARA 313 Components
SARA 313: 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 Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Formamide	75-12-7	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Formamide	75-12-7	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Formamide	75-12-7	2007-03-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.