

SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

Date Printed: 08/08/2005
Date Updated: 03/11/2004
Version 1.7

Section 1 - Product and Company Information

Product Name FORMAMIDE, 99+%,
SPECTROPHOTOMETRIC GRADE
Product Number 295876
Brand ALDRICH

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS MO 63103 US
Technical Phone: 314 771 5765
Emergency Phone: 414 273 3850 Ext. 5996
Fax: 800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
FORMAMIDE	75-12-7	No

Formula CH3NO
Synonyms Amid kyseliny mravenci (Czech) * Carbamaldehyde *
Formamide (ACGIH) * Formimidic acid * Methanamide
* Methanoic acid, amide
RTECS Number: LQ0525000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause harm to the unborn child. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Target organ(s): Blood. Central nervous system. Readily absorbed through skin.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 1
REACTIVITY: 1

NFPA RATING

HEALTH: 2
FLAMMABILITY: 1
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

302 °F 150 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2.7 % Upper: 19 %

AUTOIGNITION TEMP

500 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe vapor. Do not breathe mist. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	10 PPM
Remarks: Skin			
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	10 PPM (SK)

EXPOSURE LIMITS

Country	Source	Type	Value
USA	ACGIH	TLV	18 mg/m3

Section 9 - Physical/Chemical Properties

Appearance	Color: Colorless Form: Clear liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	45.04 AMU	
pH	4 - 5	
BP/BP Range	210 °C	760 mmHg
MP/MP Range	2 °C	
Freezing Point	2 - 3 °C	
Vapor Pressure	0.08 mmHg	20 °C
Vapor Density	1.55 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.132 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.1 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: -1.51	
Decomposition Temp.	180 °C	
Flash Point	302 °F 150 °C	Method: closed cup
Explosion Limits	Lower: 2.7 % Upper: 19 %	
Flammability	N/A	
Autoignition Temp	500 °C	
Refractive Index	1.447	
Optical Rotation	N/A	
Miscellaneous Data	N/A	

Solubility

Solubility in Water:Miscible.

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong oxidizing agents, Acids, Bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Readily absorbed through skin.

Eye Contact: Causes severe eye irritation.

Inhalation: May be harmful if inhaled. Vapor or mist is irritating to the mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Blood. Central nervous system. Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CONDITIONS AGGRAVATED BY EXPOSURE

Material can cause severe burns and blistering which may not be immediately painful or visible. The full extent of tissue damage may not exhibit itself for 12-24 hours after exposure.

TOXICITY DATA

Oral

Rat

5,577 mg/kg

LD50

Oral

Mouse

3,150 mg/kg

LD50

Skin

Rabbit

17,000 mg/kg

LD50

6 HR.

Inhalation

Rat

3,900 mg/kg

LC50

Oral

Rat
5577 mg/kg
LD50
Remarks: Autonomic Nervous System:Other (direct)
parasympathomimetic. Behavioral:Ataxia. Kidney, Ureter,
Bladder:Incontinence.

Inhalation
Rat
> 3,900 ppm
LC50

Intraperitoneal
Rat
5700 MG/KG
LD50

Subcutaneous
Rat
>4 GM/KG
LD50

Oral
Mouse
3150 mg/kg
LD50

Intraperitoneal
Mouse
2450 MG/KG
LD50

Skin
Rabbit
17000 mg/kg
LD50

Intraperitoneal
Guinea pig
1250 MG/KG
LD50
Remarks: Autonomic Nervous System:Other (direct)
parasympathomimetic. Behavioral:Somnolence (general depressed
activity). Behavioral:Convulsions or effect on seizure threshold.

Oral
Mammal
3150 mg/kg
LD50

IRRITATION DATA

Eyes
Rabbit
100 mg
Remarks: Severe irritation effect

CHRONIC EXPOSURE - TERATOGEN

Result: May cause congenital malformation in the fetus.

Species: Rat
Dose: 7980 MG/KG

Route of Application: Oral
Exposure Time: (7-12D PREG)
Result: Specific Developmental Abnormalities: Craniofacial
(including nose and tongue). Specific Developmental
Abnormalities: Musculoskeletal system.

Species: Rat
Dose: 1200 MG/KG
Route of Application: Skin
Exposure Time: (10-11D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 2 GM/KG
Route of Application: Oral
Exposure Time: (7D PREG)
Result: 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).

Species: Rabbit
Dose: 910 MG/KG
Route of Application: Oral
Exposure Time: (6-18D PREG)
Result: 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). Specific Developmental Abnormalities:
Musculoskeletal system.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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. Observe all federal, state, and local
environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is
considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air
transport.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T
Indication of Danger: Toxic.

R: 61

Risk Statements: May cause harm to the unborn child.

S: 53 45

Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: May cause harm to the unborn child. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. Do not breathe vapor.

US Statements: Target organ(s): Blood. Central nervous system. Readily absorbed through skin.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.