

8-30-05



SIGMA-ALDRICH

# Material Safety Data Sheet

Date Printed: 05/05/2005  
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Version 1.70

## Section 1 - Product and Company Information

<b>Product Name</b>	Formamide, minimum 99% GC		
<b>Product Number</b>	F7503		
<b>Brand</b>	Sigma Chemical		
<b>Company</b>	Sigma-Aldrich		
<b>Street Address</b>	3050 Spruce Street		
<b>City, State, Zip, Country</b>	SAINT LOUIS, MO 63103 US		
<b>Technical Phone:</b>	314 771 5765	<b>Emergency Phone:</b>	414 273 3850 Ext. 5996
<b>Fax:</b>	800 325 5052		

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
FORMAMIDE	75-12-7	No	200-842-0	616-052-00-8

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

## 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

**Autoignition Temp:** 500 °C

### 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 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**

Country	Source	Type	Value
USA	ACGIH	TLV	18 mg/m3 10 ppm

**Exposure Limits, RTECS**

Country	Source	Type	Value
USA	ACGIH	TWA	10 PPM
New Zealand	OEL		
USA	NIOSH	TWA	10 PPM (SK)

**Section 9 - Physical/Chemical Properties****Appearance**

Color  
Colorless

Form  
Clear liquid

Molecular Weight: 45.04 AMU

**Property Value At Temperature or Pressure**

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	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	302 °F	Method: closed cup
Flash Point °C	150 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	500 °C	
Refractive Index	1.447	

**Solubility**

Solubility in Water: Miscible.

N/A = not available

**Section 10 - Stability and Reactivity****Stability**

Stable  
Stable.

**Conditions to Avoid**  
Protect from moisture.

**Materials to Avoid**  
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.

**RTECS Number:** LQ0525000**Toxicity Data**

Oral - Rat: 5,577 mg/kg(LD50)

Oral - Mouse: 3,150 mg/kg(LD50)

Skin - Rabbit: 17,000 mg/kg(LD50)

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) parasymphomimetic.

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

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
	Result: May cause congenital malformation in the fetus.		
Rat	7980 MG/KG	Oral	(7-12D PREG)
	Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system.		
Rat	1200 MG/KG	Skin	(10-11D PREG)
	Result: Effects on Embryo or Fetus: Fetal death.		

#### Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	2 GM/KG	Oral	(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).		
Rabbit	910 MG/KG	Oral	(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.

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.

Risk Statements R: 61

May cause harm to the unborn child.

Safety Statements S: 53 45

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.