

## Material Safety Data Sheet

Date Printed: 27/JAN/2005

Date Updated: 13/MAR/2004

Version 1.3

According to 91/155/EEC

---

1 - Product and Company Information

---

Product Name HYDRANAL FORMAMIDE DRY, MAX. 0,02 % H2O  
Product Number 34724

Company Sigma-Aldrich Company Ltd.  
The Old Brickyard  
New Road, Gillingham SP8 4XT  
United Kingdom

Technical Phone # 44-(0)-1747-833000

Fax 44-(0)-1747-833313

Emergency Phone # 44-(0)-1747-833100

---

2 - Composition/Information on Ingredients

---

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

Formula CH3NO

Molecular Weight 45.04 AMU

Synonyms Amid kyseliny mravenci (Czech) \* Carbamaldehyde

\* Formamide (ACGIH) \* Formimidic acid \*

Methanamide \* Methanoic acid, amide

---

3 - Hazards Identification

---

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

May cause harm to the unborn child.

Repr. Cat.2

---

4 - First Aid Measures

---

## AFTER INHALATION

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

## AFTER SKIN CONTACT

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

Call a physician.

## AFTER EYE CONTACT

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.

## AFTER INGESTION

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

---

## 5 - Fire Fighting Measures

---

EXTINGUISHING MEDIA

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

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

---

6 - Accidental Release Measures

---

PERSONAL PRECAUTION PROCEDURES 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.

---

7 - Handling and Storage

---

HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not breathe mist. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.

---

8 - Exposure Controls / Personal Protection

---

ENGINEERING CONTROLS

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

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS

Country	Source	Type	Value
USA	ACGIH	TLV	18 mg/m3

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	18 mg/m3
		10 ppm

Remarks: H

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	18 mg/m3

Remarks: H,NL

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	18 mg/m3
		10 ppm

Remarks: H

EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level	20 mg/m3
		10 ppm

Remarks: H

EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	18 mg/m3
		10 ppm

Remarks: H

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	37 mg/m3
		20 ppm
OEL	STEL	56 mg/m3
		30 ppm

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Color: Colorless	
	Form: Clear liquid	
Property	Value	At Temperature or Pressure
pH	4 - 5	
BP/BP Range	210 °C	760 mmHg
MP/MP Range	2 °C	
Flash Point	150 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	500 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	0.08 mmHg	20 °C
SG/Density	1.132 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	1.55 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.1 %	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: Miscible.	

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

---

11 - Toxicological Information

---

RTECS NUMBER: LQ0525000

ACUTE TOXICITY

LD50

Oral

Rat

5,577 mg/kg

LD50

Oral

Mouse

3,150 mg/kg

LD50

Skin

Rabbit

17,000 mg/kg

LC50

Inhalation

Rat

3,900 mg/kg

6 HR.

LD50

Oral

Rat

5577 mg/kg

Remarks: Autonomic Nervous System:Other (direct)  
parasympathomimetic. Behavioral:Ataxia. Kidney, Ureter,  
Bladder:Incontinence.

LC50

Inhalation

Rat

> 3,900 ppm

6H

LD50

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  
Remarks: Autonomic Nervous System:Other (direct)  
parasympathomimetic. Behavioral:Somnolence (general depressed  
activity). Behavioral:Convulsions or effect on seizure threshold.

LD50  
Oral  
Mammal  
3150 mg/kg

#### IRRITATION DATA

Eyes  
Rabbit  
100 mg  
Remarks: Severe irritation effect

#### 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.

#### 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 INFORMATION

Blood. Central nervous system. Liver. Kidneys.

#### 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.

#### 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.

---

#### 12 - Ecological Information

No data available.

---

#### 13 - Disposal Considerations

##### SUBSTANCE DISPOSAL

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.

---

#### 14 - Transport Information

##### RID/ADR

Non-hazardous for road transport.

##### IMDG

Non-hazardous for sea transport.

##### IATA

Non-hazardous for air transport.

---

#### 15 - Regulatory Information

##### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 616-052-00-8

INDICATION OF DANGER: T

Toxic.

R-PHRASES: 61

May cause harm to the unborn child.

S-PHRASES: 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).

#### COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 3

---

#### 16 - Other Information

---

#### 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.

#### DISCLAIMER

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