

Material Safety Data Sheet

Date Printed: 27/JAN/2005

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Version 1.4

According to 91/155/EEC

1 - Product and Company Information

Product Name HYDRANAL-WORKING MEDIUM K SOLVENT FOR
VOLUMETRIC KARL FISCHER TITRATION IN
KEYTONES AND ALDEHYDES

Product Number 34817

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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
HYDRANAL WORKING MEDIUM K	None	None	None

Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
CHLOROFORM	>= 30 <= 60	67-66-3	200-663-8	602-006-00-4

Carc. Cat.3

Symbols: Xn

R-Phrases: 22 38 40 48/20/22

Harmful if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

2-CHLOROETHANOL	>= 30 <= 60	107-07-3	203-459-7	603-028-00-7
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Symbols: T+

R-Phrases: 26/27/28

Very toxic by inhalation, in contact with skin and if swallowed.

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Very toxic by inhalation, in contact with skin and if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

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.

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

Absorb on sand or vermiculite and place in closed containers for 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 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.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator in

nonventilated areas and/or for exposure above the TLV or PEL.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	60 °C	
MP/MP Range	N/A	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	1.35 g/cm ³	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to light.

Materials to Avoid: Strong oxidizing agents, Strong bases, Magnesium, Sodium, Lithium.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Exposure can cause: Nausea, dizziness, and headache. Vomiting. Gastrointestinal disturbances. Exposure to and/or consumption of alcohol may increase toxic effects.

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: Readily absorbed through skin. May be fatal if

absorbed through skin.

Eye Contact: Causes severe eye irritation.

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

Ingestion: May be fatal if swallowed.

TARGET ORGAN INFORMATION

Cardiovascular system. Blood. Liver. Kidneys. Nerves. Eyes.

CHRONIC EXPOSURE - CARCINOGEN

Result: This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 2810

Class: 6.1

PG: I

Proper Shipping Name: Toxic liquid, organic, n.o.s.

IMDG

UN#: 2810

Class: 6.1

PG: I

Proper Shipping Name: Toxic liquid, organic, n.o.s.

Marine Pollutant: No

Severe Marine Pollutant: No

Technical Name: Required

IATA

UN#: 2810

Class: 6.1

PG: I

Proper Shipping Name: Toxic liquid, organic, n.o.s.

Inhalation Packing Group I: Yes

Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T+

Very toxic.

R-PHRASES: 26/27/28 38 40 48/20/22

Very toxic by inhalation, in contact with skin and if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to

health by prolonged exposure through inhalation and if swallowed.

S-PHRASES: 7/9 36/37 45

Keep container tightly closed and in well-ventilated place. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 3

NORWAY

Labelling for organic solvents where the package is 1 liter or more.

YL-tall m3/l: 207000

YL-group: 5

Safety phrases: 38 42 210

In case of insufficient ventilation, wear suitable respiratory equipment. During fumigation/spraying wear suitable respiratory equipment. Use compressed air- or fresh air line breathing apparatus in confined spaces.

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.

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