

## Material Safety Data Sheet

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Version 1.6

According to 91/155/EEC

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1 - Product and Company Information

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Product Name HYDRANAL TITRANT 5E  
Product Number 34732

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

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
HYDRANAL TITRANT 5E	None	None	None

Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
ETHYL ALCOHOL, NON-DENATURED, 200 PROOF	>= 80 <= 90	64-17-5	200-578-6	603-002-00-5

Symbols: F

R-Phrases: 11

Highly flammable.

IODINE	>= 5 <= 10	7553-56-2	231-442-4	053-001-00-3
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Symbols: Xn N

R-Phrases: 20/21 50

Harmful by inhalation and in contact with skin. Very toxic to aquatic organisms.

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3 - Hazards Identification

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SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable.

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4 - First Aid Measures

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## 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.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

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

#### SPECIAL RISKS

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

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

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

#### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Avoid contact with eyes, skin, and clothing. Do not breathe vapor. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep container closed. Keep away from heat, sparks, and open flame.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

## PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	77 °C	
MP/MP Range	N/A	
Flash Point	17 °C	Method: closed cup
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	0.888 g/cm <sup>3</sup>	
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	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Alkali metals, Ammonia, Oxidizing agents, Peroxides.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen iodide, Iodine, Nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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### SENSITIZATION

Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

### SIGNS AND SYMPTOMS OF EXPOSURE

Can cause CNS depression. Narcotic effect. Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.

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.  
Eye Contact: Causes eye irritation.  
Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.  
Ingestion: May be harmful if swallowed.

#### TARGET ORGAN INFORMATION

Nerves. Liver. Heart. Thyroid. Kidneys. Bladder. Brain.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

#### CHRONIC EXPOSURE - TERATOGEN

Result: Exposure to excessive amounts of iodine during pregnancy is capable of producing fetal hypothyroidism. Iodine-containing drugs have been associated with fetal goiter.

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#### 12 - Ecological Information

No data available.

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#### 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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#### 14 - Transport Information

#### RID/ADR

UN#: 1993  
Class: 3  
PG: I  
Proper Shipping Name: Flammable liquid, n.o.s.

#### IMDG

UN#: 1993  
Class: 3  
PG: II  
Proper Shipping Name: Flammable liquid, n.o.s.  
Marine Pollutant: No  
Severe Marine Pollutant: No  
Technical Name: Required

#### IATA

UN#: 1993  
Class: 3  
PG: II  
Proper Shipping Name: Flammable liquid, n.o.s.  
Inhalation Packing Group I: No  
Technical Name: Required

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CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F

Highly Flammable.

R-PHRASES: 11

Highly flammable.

S-PHRASES: 16

Keep away from sources of ignition - no smoking.

NORWAY

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

YL-tall m3/l: 955-1075

YL-group: 3

Risk phrases: 20

Harmful by inhalation.

Safety phrases: 38 42

In case of insufficient ventilation, wear suitable respiratory equipment. During fumigation/spraying wear suitable respiratory equipment.

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16 - Other Information

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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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