

## Material Safety Data Sheet

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 Version 1.10  
 Regulation (EC) No 1907/2006

## 1 - Product and Company Information

Product Name HYDRANAL-COMPOSITE 5 ONE-COMPONENT  
 REAGENT VOLUMETRIC KF TITRATION  
 Product Number 34805  
 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  
 E-mail Address eurtechserv@sial.com  
 Emergency Phone # 44-(0)-1747-833100

## 2 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
 Not hazardous according to Directive 67/548/EEC.

## 3 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number	
HYDRANAL-COMPOSITE 5, ONE COMPONENT REAGENT	None	None	None	
Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
Information regarding the specific chemical identity of this material is being withheld as a trade secret of the manufacturer.		None	None	None
IMIDAZOLE	>= 5 <= 15	288-32-4	206-019-2	None
Symbols: C R-Phrases: 22-34 Harmful if swallowed. Causes burns.				
SULFUR DIOXIDE	>= 5 <= 15	7446-09-5	231-195-2	016-011-00-9
Symbols: T R-Phrases: 23-34 Toxic by inhalation. Causes burns.				
IODINE	>= 5 <= 15	7553-56-2	231-442-4	053-001-00-3
Symbols: Xn-N				



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## HANDLING

Directions for Safe Handling: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

## STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat and open flame.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air 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	4.5 - 5.5	20 °C
BP/BP Range	194 °C	
MP/MP Range	N/A	
Flash Point	90 °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	1.17 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	Solubility in Water: Miscible.	

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## 10 - Stability and Reactivity

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#### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

#### HAZARDOUS DECOMPOSITION PRODUCTS

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

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### 11 - Toxicological Information

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#### ACUTE TOXICITY

LD50

Oral

Rat

> 2,000 mg/kg

LD50

Skin

Rat

> 2,000 mg/kg

#### IRRITATION DATA

Skin

Rabbit

Remarks: No irritation effect

Eyes

Rabbit

Remarks: No irritation effect

#### SENSITIZATION

Skin: May cause allergic skin reaction.

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

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

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

#### TARGET ORGAN INFORMATION

Kidneys. Central nervous system. Reproductive system. Skin.

Eyes. Endocrine system. Thyroid. Liver.

#### 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

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No data available.

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### 13 - Disposal Considerations

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SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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14 - Transport Information

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RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

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15 - Regulatory Information

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Not hazardous according to Directive 67/548/EEC.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

Self-Classification

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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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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