

Material Safety Data Sheet

Date Printed: 27/JAN/2005

Date Updated: 14/MAR/2004

Version 1.4

According to 91/155/EEC

1 - Product and Company Information

Product Name HYDRANAL-COMPOSITE 1, ONE-COMPONENT
REAG FOR VOLUMETRIC KF TITRATION
Product Number 34827
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 |
|---|---------------|-----------|-----------|-------------------------|
| HYDRANAL-COMPOSITE 1 | | None | None | None |
| Ingredient Name | Percent | CAS # | EC no | Annex I Index Number |
| DI(ETHYLENE GLYCOL) ETHYL ETHER | <= 68 | 111-90-0 | 203-919-7 | 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 | None |
| Symbols: T R-Phrases: 23 34 Toxic by inhalation. Causes burns. | | | | |
| IODINE | >= 1 <= 10 | 7553-56-2 | 231-442-4 | 053-001-00-3 |
| Symbols: Xn N R-Phrases: 20/21 50 Harmful by inhalation and in contact with skin. Very toxic to aquatic organisms. | | | | |
| 2-METHYLIMIDAZOLE | >= 5 <= 15 | 693-98-1 | 211-765-7 | None |
| Symbols: C R-Phrases: 22 34 Harmful if swallowed. Causes burns. | | | | |

3 - Hazards Identification

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

AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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): Combustible liquid. 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 respirator, chemical safety goggles, 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.

7 - Handling and Storage

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.

8 - Exposure Controls / Personal Protection

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: Government approved respirator.

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 | 3 - 4 | 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 | 1.11 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 | Solubility in Water: Miscible. | |

10 - Stability and Reactivity

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

11 - Toxicological Information

IRRITATION DATA

Skin

Rabbit

Remarks: No irritation effect
Eyes
Rabbit
Remarks: Mild irritation effect

SENSITIZATION

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

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.

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.

12 - Ecological Information

No data available.

13 - Disposal Considerations

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.

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

Not hazardous according to Directive 67/548/EC.

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.