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Hach Company  
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(970) 669-3050

MSDS No: M00217

## SAFETY DATA SHEET

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### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Sulfate Reagent A  
**Catalog Number:** HCT125A

HACH LANGE GmbH  
Willstätterstrasse 11  
40549 Düsseldorf, Germany  
+49-(0)211-52880

Emergency Telephone Numbers:  
(Poison Information Center Main)  
(+49 (0) 6131 19240) 24 HR

**SDS Number:** M00217

**Chemical Name:** Barium Chloride, Dihydrate

**Chemical Formula:** BaCl<sub>2</sub> · 2H<sub>2</sub>O

**Chemical Family:** Inorganic Salt

**Use of the substance/preparation:** Laboratory Reagent

**CAS No.:** 10326-27-9

**Hazard:** May cause irritation. Toxic.

**Date of MSDS Preparation:**

**Day:** 26

**Month:** April

**Year:** 2007

**Additional Emergency Response Numbers:** Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33-(0)1-40370404, Italy: +39-02-66101029, Netherlands: +31-(0)30-2748888, Switzerland: +41-(0)1-2515151

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### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Barium Chloride

**EEC Number:** 2337881

**CAS No.:** 10326-27-9

**Percent Range:** 100,0

**Percent Range Units:** weight / weight

**Ingredient EEC Symbol:** T - TOXIC

**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 20 R 25

**TLV:** 0,5 mg/m<sup>3</sup> as Ba

**PEL:** 0,5 mg/m<sup>3</sup> as Ba

**EU Occupational Exposure Limits:** 0,5 mg/m<sup>3</sup> as Ba

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### 3. HAZARDS IDENTIFICATION

#### **Emergency Overview:**

**Appearance:** Colorless crystals

**Odor:** Not determined

**EU Symbols:** T - TOXIC

**R PHRASES:** R 20: Harmful by inhalation. R 25: Toxic if swallowed.

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** None reported

**Skin Contact (EC):** None reported

**Skin Absorption (EC):** None Reported

**Target Organs (SA E):** None Reported

**Ingestion (EC):** Toxic Barium compounds cause central nervous system stimulation followed by central nervous system depression. Barium compounds cause stimulation of the muscles which may result in muscle twitching, cramps and weakness; blood pressure effects; disturbance in the heart's action and respiratory weakness. Causes: dizziness abdominal pain Can cause: paralysis of tongue limb immobility death

**Target Organs (Ing E):** Cardiovascular system Muscles Central nervous system

**Inhalation:** Harmful Barium compounds cause central nervous system stimulation followed by central nervous system depression. Barium compounds cause stimulation of the muscles which may result in muscle twitching, cramps and weakness; blood pressure effects, disturbance in the heart's action and respiratory paralysis. Causes: dizziness abdominal pain convulsions Can cause: paralysis of tongue limb immobility death

**Target Organs (Inh E):** Central nervous system Muscles Cardiovascular system

**Medical Conditions Aggravated:** None reported

**Chronic Effects:** Chronic overexposure may cause kidney damage

**Cancer / Reproductive Toxicity Information:**

IARC Listed: No

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

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## 4. FIRST AID MEASURES

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with plenty of water. Call physician if irritation develops.

**Ingestion (First Aid):** Induce vomiting using syrup of ipecac or by sticking finger down throat. Give 1 tablespoon of epsom salt in a glass of water. Call physician immediately. Never give anything by mouth to an unconscious person.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Does not burn, but may melt in a fire, releasing toxic fumes.

**Hazardous Combustion Products:** This material will not burn.

**Fire / Explosion Hazards:** This product will not burn or explode.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Extinguishing Media NOT To Be Used:** Not applicable

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

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## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Releases of this material may contaminate the environment. Stop spilled material from being released to the environment.

**Clean-up Technique:** Avoid contact with spilled material. Sweep up material. Dispose of material in an E.P.A. approved hazardous waste facility.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

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## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes skin Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Store away from: acids Protect from: heat moisture

**Special Packaging Instructions:** Not applicable

**Use of the substance/preparation:** Laboratory Reagent

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain adequate ventilation to keep vapor level below TWA for chemicals in this product. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin / Hand Protection:** disposable latex gloves lab coat

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Protect from: heat moisture

**TLV:** 0,5 mg/m<sup>3</sup> as Ba

**PEL:** 0,5 mg/m<sup>3</sup> as Ba

**EU Occupational Exposure Limits:** 0,5 mg/m<sup>3</sup> as Ba

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Colorless crystals

**Physical State:** Solid

**Odor:** Not determined

**pH:** 5% solution = 5,2-8,2

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** 963 °C 1765,4 °F

**Flash Point:** Not applicable

**Method:** Not applicable

**Autoignition Temperature:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Specific Gravity (water = 1):** 3,86

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Soluble in methanol

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Extreme temperatures Excess moisture

**Reactivity / Incompatibility:** Incompatible with: 2-furan percarboxylic acid bromine trifluoride

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: chlorides

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD50 = 118 mg/kg Oral Human LDLo = 11400 µg/kg

**LC50:** None Reported

**Dermal Toxicity Data:** None Reported

**Skin and Eye Irritation Data:** None Reported

**Mutation Data:** No Mammalian data reported

**Reproductive Effects Data:** None reported

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**Ingredient Toxicological Data: --**

Not applicable

IARC Listed: No

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information: --**

No ecological data available for this product.

**Ingredient Ecological Information: --**

Not applicable

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## 13. DISPOSAL CONSIDERATIONS

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Barium compound, N.O.S.

(Barium Chloride)

**ICAO Hazard Class:** 6,1

**ICAO Subsidiary Risk:** NA

**ICAO UN/ID Number:** UN1564

**ICAO Packing Group:** III

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Barium compound, N.O.S.

(Barium Chloride)

**I.M.O. Hazard Class:** 6,1

**I.M.O. Subsidiary Risk:** NA

**I.M.O. UN Number:** UN1564

**I.M.O. Packing Group:** III

**A.D.R.:**

**A.D.R. Proper Shipping Name:** Barium Compounds, N.O.S.  
(Barium Chloride)

**A.D.R. Hazard Class:** 6,1

**A.D.R. Subsidiary Risk:** NA

**A.D.R. UN-Number::** 1564

**A.D.R. Packing Group:** III

**Additional Information:** This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

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## 15. REGULATORY INFORMATION

**National Inventories:**

**EEC Inventory Status:** EINECS Listed: Yes

**EEC Number:** 2337881

**EEC LABEL COPY:**

**EU Symbols:** T - TOXIC

**R PHRASES:** R 20: Harmful by inhalation. R 25: Toxic if swallowed.

**S PHRASES:** S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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## 16. OTHER INFORMATION

**References:** NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987. Technical Judgment. In-house information. Vendor Information. Patty, Frank A. Industrial Hygiene and Toxicology, 3rd Revised Edition. Volume 2. New York: A Wiley-Interscience Publication, 1981. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. EU Occupational Exposure Limits On Line.

**R PHRASES:** R 20: Harmful by inhalation. R 25: Toxic if swallowed.

**Use of the substance/preparation:** Laboratory Reagent

**Revision Summary:** Updates in Section(s) 14,

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### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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MSDS No: M01965

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Sulfate Vial Reagent  
**Catalog Number:** HCT125R

HACH LANGE GmbH  
Willstätterstrasse 11  
40549 Düsseldorf, Germany  
+49-(0)211-52880

Emergency Telephone Numbers:  
(Poison Information Center Main)  
(+49 (0) 6131 19240) 24 HR

**SDS Number:** M01965

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Use of the substance/preparation:** Sulfate determination

**CAS No.:** Not applicable

**Hazard:** May cause eye irritation.

**Date of MSDS Preparation:**

**Day:** 13

**Month:** 01

**Year:** 2006

**Additional Emergency Response Numbers:** Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33 (0)1-40370404, Italy: +39-0266101029, Netherlands: +31-(0)30-2748888, Switzerland: +41-(0)1-2515151

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Hydrochloric Acid

**EEC Number:** 2315957

**CAS No.:** 7647010

**Percent Range:** 0,1 - 1,0

**Percent Range Units:** weight / weight

**Ingredient EEC Symbol:** Not applicable

**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable

**TLV:** 5 ppm ceiling

**PEL:** 5 ppm ceiling

**EU Occupational Exposure Limits:** Hydrogen chloride: 5 ppm (8 mg/m<sup>3</sup>); STEL 10 ppm (15<sup>3</sup>)

#### Sodium Chloride

**EEC Number:** 2315983

**CAS No.:** 7647145

**Percent Range:** 15,0 - 25,0

**Percent Range Units:** weight / weight

**Ingredient EEC Symbol:** Not applicable

**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

#### Demineralized Water

**EEC Number:** 2317912

**CAS No.:** 7732185

**Percent Range:** 75,0 - 85,0  
**Percent Range Units:** volume / volume  
**Ingredient EEC Symbol:** Not applicable  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** Not established

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, colorless liquid  
**Odor:** Odorless  
**EU Symbols:** Not applicable  
**R PHRASES:** Not applicable

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** None reported  
**Skin Contact (EC):** No effects are anticipated  
**Skin Absorption (EC):** No effects anticipated  
**Target Organs (SA E):** Not applicable  
**Ingestion (EC):** Very large doses may cause: dehydration nausea vomiting diarrhea muscular twitching rigidity collapse blood pressure problems death  
**Target Organs (Ing E):** None Reported  
**Inhalation:** No effects anticipated  
**Target Organs (Inh E):** Not applicable  
**Medical Conditions Aggravated:** Pre-existing: Eye conditions  
**Chronic Effects:** None reported  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Hydrochloric acid  
**Additional Cancer / Reproductive Toxicity Information:** In a laboratory test, mice given a 2% NaCl solution in place of drinking water during pregnancy produced hypertensive adult offspring. In a laboratory test, single subcutaneous injection of NaCl into pregnant mice @ 2500 mg/Kg caused fetal deaths and malformations.  
**Toxicologically Synergistic Products:** None reported

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### 4. FIRST AID MEASURES

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician if irritation develops.  
**Skin Contact (First Aid):** Wash skin with plenty of water.  
**Ingestion (First Aid):** Give large quantities of water or milk. Call physician immediately.  
**Inhalation:** None required.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn.  
**Hazardous Combustion Products:** This material will not burn.  
**Fire / Explosion Hazards:** This product will not burn or explode.  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Use media appropriate to surrounding fire conditions  
**Extinguishing Media NOT To Be Used:** Not applicable  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

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### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Cover spilled material with an inert ingredient and calcium carbonate. Scoop up slurry into a large beaker. Dilute with a large excess of water. Flush the spilled material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

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## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use. Protect from: extreme temperatures

**Special Packaging Instructions:** Not applicable

**Use of the substance/preparation:** Sulfate determination

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin / Hand Protection:** lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes Wash thoroughly after handling. Protect from: heat freezing

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:**

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Odor:** Odorless

**pH:** Not determined

**Vapor Pressure:** Not determined

**Vapor Density (air = 1):** Not determined

**Boiling Point:** Not determined

**Melting Point:** Not determined

**Flash Point:** Not applicable

**Method:** Not applicable

**Autoignition Temperature:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Specific Gravity (water = 1):** Not determined

**Evaporation Rate (water = 1):** Not determined

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Miscible

**Acid:** Not determined

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.



**Conditions to Avoid:** Evaporation  
**Reactivity / Incompatibility:** None reported  
**Hazardous Decomposition:** No hazardous decomposition products known.  
**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported  
**LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** None reported  
**Reproductive Effects Data:** None reported

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**Ingredient Toxicological Data:** Sodium Chloride: Oral rat LD50 = 3000 mg/kg; Hydrochloric Acid: Oral rabbit LD50 = 900 mg/kg, Inhalation rat LC50 = 3124 ppm/1 hour

An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Hydrochloric acid

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Hydrochloric Acid: LC100 trout 10 mg/L 24-hr; LC50 shrimp 100 to 330 ppm/48-hr (salt water); LC50 Starfish 100 to 330 mg/L/48-hr; LC50 cockle 330 to 1,000 mg/L/48-hr; TLm mosquito fish 282 ppm/96 hr (fresh water); LC50 goldfish 178 mg/L

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## 13. DISPOSAL CONSIDERATIONS

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

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**ICAO Hazard Class:** NA  
**ICAO Subsidiary Risk:** NA  
**ICAO UN/ID Number:** NA  
**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

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**I.M.O. Hazard Class:** NA  
**I.M.O. Subsidiary Risk:** NA  
**I.M.O. UN Number:** NA  
**I.M.O. Packing Group:** NA

**A.D.R.:**

**A.D.R. Proper Shipping Name:** Not Currently Regulated

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**A.D.R Hazard Class:** NA  
**A.D.R. Subsidiary Risk:** NA  
**A.D.R. UN-Number::** NA  
**A.D.R. Packing Group:** NA

**Additional Information:** This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

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## 15. REGULATORY INFORMATION

**National Inventories:**

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**EEC Number:** Not applicable

**EEC LABEL COPY:**

**EU Symbols:** Not applicable

**R PHRASES:** Not applicable

**S PHRASES:** Not applicable

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## 16. OTHER INFORMATION

**References:** Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. In-house information. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**R PHRASES:** Not applicable

**Use of the substance/preparation:** Sulfate determination

**Revision Summary:** Updates in Section(s) 14,

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**Legend:**

NA - Not Applicable

w/w - weight/weight

ND - Not Determined

w/v - weight/volume

NV - Not Available

v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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MSDS No: M01919

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** Sulfate Zero Solution  
**Catalog Number:** HCT125Z

HACH LANGE GmbH  
Willstätterstrasse 11  
40549 Düsseldorf, Germany  
+49-(0)211-52880

Emergency Telephone Numbers:  
(Poison Information Center Main)  
(+49 (0) 6131 19240) 24 HR

**SDS Number:** M01919  
**Chemical Name:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Use of the substance/preparation:** Standard solution  
**CAS No.:** Not applicable  
**Hazard:** Practically non-toxic.  
**Date of MSDS Preparation:**  
**Day:** 13  
**Month:** 01  
**Year:** 2006

**Additional Emergency Response Numbers:** Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33 (0)1-40370404, Italy: +39-0266101029, Netherlands: +31 -(0)30-2748888, Switzerland: +41-(0)1-2515151

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Demineralized Water

**EEC Number:** 2317912  
**CAS No.:** 7732185  
**Percent Range:** > 99,0  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** Not applicable  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** Not established

#### Sulfuric Acid

**EEC Number:** 2316395  
**CAS No.:** 7664939  
**Percent Range:** < 0,1  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** Not applicable  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable  
**TLV:** 1 mg/m<sup>3</sup> (TWA); 3 mg/m<sup>3</sup> (STEL)  
**PEL:** 1 mg/m<sup>3</sup>  
**EU Occupational Exposure Limits:** 0,1 mg/m<sup>3</sup>

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, colorless liquid  
**Odor:** None  
**EU Symbols:** Not applicable  
**R PHRASES:** Not applicable

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** No effects are anticipated  
**Skin Contact (EC):** No effects are anticipated  
**Skin Absorption (EC):** None Reported  
**Target Organs (SA E):** Not applicable  
**Ingestion (EC):** Practically non-toxic  
**Target Organs (Ing E):** Not applicable  
**Inhalation:** No effects anticipated  
**Target Organs (Inh E):** Not applicable  
**Medical Conditions Aggravated:** None reported  
**Chronic Effects:** No effects anticipated  
**Cancer / Reproductive Toxicity Information:**  
This product does NOT contain any IARC listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported  
**Toxicologically Synergistic Products:** None reported

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#### 4. FIRST AID MEASURES

**Eye Contact:** Flush eyes with water. Call physician if irritation develops.  
**Skin Contact (First Aid):** Wash skin with plenty of water. Call physician if irritation develops.  
**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.  
**Inhalation:** None required.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn.  
**Hazardous Combustion Products:** This material will not burn.  
**Fire / Explosion Hazards:** This product will not burn or explode.  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Use media appropriate to surrounding fire conditions  
**Extinguishing Media NOT To Be Used:** Not applicable  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

**Clean-up Technique:** Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Dispose of material in an E.P.A. approved hazardous waste facility. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill cleanup. If conditions warrant, increase the size of the evacuation.

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#### 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use.

*Special Packaging Instructions:* Not applicable  
*Use of the substance/preparation:* Standard solution

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

*Engineering Controls:* Maintain general industrial hygiene practices when using this product.

*Personal Protective Equipment:*

*Eye Protection:* safety glasses with top and side shields

*Skin / Hand Protection:* disposable latex gloves

*Inhalation Protection:* adequate ventilation

*Precautionary Measures:* Avoid contact with: eyes Wash thoroughly after handling.

*TLV:* Not established

*PEL:* Not established

*EU Occupational Exposure Limits:* Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

*Appearance:* Clear, colorless liquid

*Physical State:* Liquid

*Odor:* None

*pH:* 2.0

*Vapor Pressure:* Not determined

*Vapor Density (air = 1):* Not determined

*Boiling Point:* 100° C 212° F

*Melting Point:* 0° C 32° F

*Flash Point:* Not applicable

*Method:* Not applicable

*Autoignition Temperature:* Not applicable

*Flammability Limits:*

*Lower Explosion Limits:* Not applicable

*Upper Explosion Limits:* Not applicable

*Specific Gravity (water = 1):* 1.00

*Evaporation Rate (water = 1):* 1

*Volatile Organic Compounds Content:* Not applicable

*Partition Coefficient (n-octanol / water):* Not applicable

*Solubility:*

*Water:* Miscible

*Acid:* Miscible

*Other:* Not determined

*Metal Corrosivity:*

*Steel:* Not determined

*Aluminum:* Not determined

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## 10. STABILITY / REACTIVITY

*Chemical Stability:* Stable when stored under proper conditions.

*Conditions to Avoid:* Exposure to air. Extreme temperatures

*Reactivity / Incompatibility:* None reported

*Hazardous Decomposition:* No hazardous decomposition products known.

*Hazardous Polymerization:* Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

*Product Toxicological Data:*

*LD50:* None reported

*LC50:* None reported

*Dermal Toxicity Data:* None reported

*Skin and Eye Irritation Data:* None reported

*Mutation Data:* None reported

*Reproductive Effects Data:* None reported

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**Ingredient Toxicological Data:** Sulfuric Acid: Oral rat LD50 = 2140 mg/kg; Inhalation rat LC50 = 347 ppm/1hr.

This product does NOT contain any IARC listed chemicals.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Sulfuric Acid: The 48-Hour TLm in flounder is 100 - 300 ppm.

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## 13. DISPOSAL CONSIDERATIONS

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

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**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO UN/ID Number:** NA

**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

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**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. UN Number:** NA

**I.M.O. Packing Group:** NA

**A.D.R.:**

**A.D.R. Proper Shipping Name:** Not Currently Regulated

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**A.D.R Hazard Class:** NA

**A.D.R. Subsidiary Risk:** NA

**A.D.R. UN-Number::** NA

**A.D.R. Packing Group:** NA

**Additional Information:** This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

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## 15. REGULATORY INFORMATION

**National Inventories:**

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**EEC Number:** --

**EEC LABEL COPY:**

**EU Symbols:** Not applicable

**R PHRASES:** Not applicable

**S PHRASES:** Not applicable

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## 16. OTHER INFORMATION

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. In-house information. Lefevre, Marc J. First Aid Manual for Chemical Accidents, 2nd Ed. New York: Van Nostrand Reinhold Company, 1989. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. EU Occupational Exposure Limits On Line.

**R PHRASES:** Not applicable

**Use of the substance/preparation:** Standard solution

**Revision Summary:** Updates in Section(s) 14,

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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