

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00295

# SAFETY DATA SHEET

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

**Product Name:** Amino Acid Reagent for Phosphate and Silica  
**Catalog Number:** 193432

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:** M00295

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Use of the substance/preparation:** Silica determination Phosphate determination

**CAS No.:** Not applicable

**Hazard:** Causes severe eye irritation. May be embryotoxic. Experimental carcinogen.

**Date of MSDS Preparation:**

**Day:** 12

**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:** 65,0 - 75,0

**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

### Other component

**EEC Number:** Not applicable

**CAS No.:** Not applicable

**Percent Range:** < 1,0

**Percent Range Units:** weight / 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

### N,N-Dimethylformamide

**EEC Number:** 2006795

**CAS No.:** 68122

**Percent Range:** 20,0 - 30,0

**Percent Range Units:** volume / volume

**Ingredient EEC Symbol:** T - TOXIC  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 36 R 61  
**TLV:** 10 ppm (skin)  
**PEL:** 10 ppm (skin)  
**EU Occupational Exposure Limits:** 10 ppm (30 mg/m<sup>3</sup>)

#### **Sodium Metabisulfite**

**EEC Number:** 2316730  
**CAS No.:** 7684574  
**Percent Range:** 1,0 - 10,0  
**Percent Range Units:** weight / volume  
**Ingredient EEC Symbol:** Not applicable  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable  
**TLV:** 5 mg/m<sup>3</sup> (ACGIH - TWA)  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

#### **Sodium Sulfite**

**EEC Number:** 2318214  
**CAS No.:** 7757837  
**Percent Range:** 1,0 - 5,0  
**Percent Range Units:** weight / 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:** 3 mg/m<sup>3</sup>, Inhalable dust

---

### **3. HAZARDS IDENTIFICATION**

#### **Emergency Overview:**

**Appearance:** Clear, yellow liquid  
**Odor:** Amine  
**EU Symbols:** T - TOXIC  
**R PHRASES:** R 61: May cause harm to the unborn child. R 36: Irritating to eyes.

#### **Protective Equipment:**

#### **Potential Health Effects:**

**Eye Contact (EC):** Causes severe irritation  
**Skin Contact (EC):** May cause irritation  
**Skin Absorption (EC):** Harmful if absorbed through the skin May cause kidney damage May cause liver damage May cause nausea May cause vomiting  
**Target Organs (SA E):** Liver Kidneys  
**Ingestion (EC):** May cause: abdominal pain nausea vomiting diarrhea blood pressure problems kidney damage liver damage  
**Target Organs (Ing E):** Liver Kidneys  
**Inhalation:** Harmful Effects similar to those of ingestion. May cause: respiratory tract irritation  
**Target Organs (Inh E):** Liver Kidneys  
**Medical Conditions Aggravated:** Pre-existing: Liver conditions Kidney conditions  
**Chronic Effects:** Dimethylformamide is capable of producing cumulative systemic injury when repeatedly inhaled or absorbed through the skin. Chronic overexposure may cause kidney damage liver damage  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Dimethylformamide Metabisulfites Sulfites  
**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental teratogen. an experimental mutagen. In laboratory tests, application of DMF to the skin of pregnant rats caused fetal deaths when the dosages were close to the lethal dose level for the mother.

**Toxicologically Synergistic Products:** Exposure to and/or consumption of alcohol may increase toxic effects of this product.

---

## 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 for 15 minutes. Remove contaminated clothing. Call physician immediately.

**Ingestion (First Aid):** Give a slurry of powdered activated charcoal. Induce vomiting using syrup of ipecac or by sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

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

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Hazardous Combustion Products:** Toxic fumes of: sulfur oxides. dimethylamine nitrogen oxides. carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** May react violently with: strong oxidizers alkali metals metal nitrates chlorine / chlorine compounds nitric acid

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Not applicable

**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:** Releases of this material may contaminate the environment. Absorb spilled liquid with non-reactive sorbent material. Dike large spills to keep spilled material from entering sewage and drainage systems or bodies of water.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Sweep up material. 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 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.

---

## 7. HANDLING AND STORAGE

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

**Storage:** Protect from: heat light Keep away from: acids oxidizers alkali metals halogens halogenated hydrocarbons Store between 10° and 25°C.

**Special Packaging Instructions:** Not applicable

**Use of the substance/preparation:** Silica determination Phosphate determination

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. 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:** chemical splash goggles

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

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: heat Keep away from: acids/acid fumes oxidizers alkali metals halogenated hydrocarbons

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, yellow liquid  
**Physical State:** Liquid  
**Odor:** Amine  
**pH:** 5,8  
**Vapor Pressure:** Not available  
**Vapor Density (air = 1):** Not available  
**Boiling Point:** 102°C; 216°F  
**Melting Point:** Not available  
**Flash Point:** > 100°C; 212°F  
**Method:** Closed cup  
**Autoignition Temperature:** Not available  
**Flammability Limits:**  
**Lower Explosion Limits:** Not applicable  
**Upper Explosion Limits:** Not applicable  
**Specific Gravity (water = 1):** 1,065  
**Evaporation Rate (water = 1):** 0,59  
**Volatile Organic Compounds Content:** Not available  
**Partition Coefficient (n-octanol / water):** Not available  
**Solubility:**  
**Water:** Miscible  
**Acid:** Not determined  
**Other:** Not determined  
**Metal Corrosivity:**  
**Steel:** Not determined  
**Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Extreme temperatures Exposure to direct sunlight.  
**Reactivity / Incompatibility:** Incompatible with: oxidizers alkali metals nitric acid metal nitrates chlorine bromine  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides carbon dioxide carbon monoxide sulfur oxides  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
**LD50:** Oral rat LD50 > 5000 mg/kg  
**LC50:** None reported  
**Dermal Toxicity Data:** DMF skin rabbit LD50 = 4720 mg/kg  
**Skin and Eye Irritation Data:** DMF eye rabbit 100 mg rinsed Draize test - SEVERE  
**Mutation Data:** DMF Cytogenetic analysis - human - inhalation - 12300 µg/m<sup>3</sup>/Y  
**Reproductive Effects Data:** DMF Inhalation - rat TCLo = 4 mg/m<sup>3</sup>/4H 1-19 days after conception - Pre-implantation mortality, fetotoxicity, embryo death  
--  
**Ingredient Toxicological Data:** Sodium Sulfite oral mouse LD50 = 820 mg/kg; DMF oral rat LD50 = 2800 mg/kg; DMF Inhalation mouse LC50 = 9400 mg/m<sup>3</sup>/2 hr  
  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Dimethylformamide Metabisulfites Sulfites

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product.  
**Ingredient Ecological Information:** Sodium sulfite - 2600 ppm/24, 48 & 96 hr/mosquito fish/TLm/fresh water; Sodium metabisulfite - 120 ppm/24, 48 & 96 hours/mosquito fish/TLm/fresh water; Dimethylformamide - 96 hour LC50 (fathead minnow) = 10,600 mg/l

---

### 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.

---

### 14. TRANSPORT INFORMATION

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

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

--

**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

--

**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

--

**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

---

### 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:** T - TOXIC

**R PHRASES:** R 61: May cause harm to the unborn child. R 36: Irritating to eyes.

**S PHRASES:** S 53: Avoid exposure - obtain special instructions before use. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

---

### 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. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. 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. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Technical Judgment. Vendor Information.

**R PHRASES:** R 61: May cause harm to the unborn child. R 36: Irritating to eyes.  
**Use of the substance/preparation:** Silica determination Phosphate determination  
**Revision Summary:** Updates in Section(s) 14,

---

**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.**

**HACH COMPANY ©2006**

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00439

## SAFETY DATA SHEET

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

**Product Name:** Molybdate Reagent  
**Catalog Number:** 223632

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:** M00439

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

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

**CAS No.:** Not applicable

**Hazard:** Harmful if inhaled. Carcinogen. Causes eye burns.

**Date of MSDS Preparation:**

**Day:** 12

**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

#### Ammonium Molybdate

**EEC Number:** 2347224

**CAS No.:** 12054-85-2

**Percent Range:** 1,0 - 10,0

**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 mg/m<sup>3</sup> as Mo

**PEL:** 5 mg/m<sup>3</sup> as Mo

**EU Occupational Exposure Limits:** 5 mg/m<sup>3</sup> as Mo. 3 mg/m<sup>3</sup>, Inhalable dust. For ammonia, 20 ppm (14 mg/m<sup>3</sup>);

STEL: 50 ppm (36 mg/m<sup>3</sup>) Recommended

#### Demineralized Water

**EEC Number:** 2317912

**CAS No.:** 7732185

**Percent Range:** 35,0 - 45,0

**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

#### Other components, each

**EEC Number:** Not applicable

**CAS No.:** Not applicable

**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:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** Not established

#### **Sulfuric Acid**

**EEC Number:** 2316395  
**CAS No.:** 7664939  
**Percent Range:** 40,0 - 50,0  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** C - CORROSIVE  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 35  
**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:** C - CORROSIVE  
**R PHRASES:** R 35: Causes severe burns.

#### **Protective Equipment:**

##### **Potential Health Effects:**

**Eye Contact (EC):** Causes severe burns  
**Skin Contact (EC):** Causes severe burns  
**Skin Absorption (EC):** None Reported  
**Target Organs (SA E):** None Reported  
**Ingestion (EC):** Causes: severe burns May cause: circulatory disturbances diarrhea gastrointestinal tract irritation nausea vomiting rapid pulse and respirations coma death Molybdenum compounds may cause loss of coordination, enzyme activity effects, copper deficiency and gout.  
**Target Organs (Ing E):** None Reported  
**Inhalation:** Causes: severe burns May cause: difficult breathing teeth erosion mouth soreness  
**Target Organs (Inh E):** Lungs  
**Medical Conditions Aggravated:** Pre-existing: Eye conditions Skin conditions Respiratory conditions Gout  
**Chronic Effects:** Molybdenum poisoning signs include loss of appetite, listlessness and reduced growth rate. Excessive exposure to molybdenum compounds may cause gout and anemia. Chronic overexposure may cause erosion of the teeth chronic irritation or inflammation of the lungs cancer  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 1: Recognized Carcinogen  
Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.  
**Additional Cancer / Reproductive Toxicity Information:** None reported  
**Toxicologically Synergistic Products:** None reported

---

### **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 for 15 minutes. Call physician immediately.  
**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.  
**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

---

### **5. FIRE FIGHTING MEASURES**



**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

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

**Fire / Explosion Hazards:** Contact with metals gives off hydrogen gas which is flammable. May react violently with strong bases water

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Dry chemical. Do NOT use water.

**Extinguishing Media NOT To Be Used:** Not applicable. Do NOT use water.

**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. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**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.

---

## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes skin clothing. Do not breathe mist or vapors. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use. Protect from: heat. Keep away from: alkalis oxidizers reducers metals

**Special Packaging Instructions:** Not applicable

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

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. Use general ventilation to minimize exposure to mist, vapor or dust. 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:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing. Do not breathe: mist/vapor. Wash thoroughly after handling. Use with adequate ventilation. Protect from: heat. Keep away from: alkalis oxidizers reducers metals

**TLV:** Not applicable.

**PEL:** Not applicable.

**EU Occupational Exposure Limits:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Odor:** None

**pH:** < 0,5

**Vapor Pressure:** Not determined.

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

**Boiling Point:** Not determined.

**Melting Point:** Not applicable.

**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):** 1,30  
**Evaporation Rate (water = 1):** 0,12  
**Volatile Organic Compounds Content:** None.  
**Partition Coefficient (n-octanol / water):** Not applicable.  
**Solubility:**  
    **Water:** Miscible.  
    **Acid:** Miscible.  
    **Other:** Not determined.  
**Metal Corrosivity:**  
    **Steel:** 4,23 in/yr (107,4 mm/yr)  
    **Aluminum:** Not determined.

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Exposure to light. Extreme temperatures Heating to decomposition.  
**Reactivity / Incompatibility:** May react violently in contact with: acetic acid chlorosulfonic acid strong bases oxidizers reducers Incompatible with: metals  
**Hazardous Decomposition:** Contact with metals may release flammable hydrogen gas. Heating to decomposition releases toxic and/or corrosive fumes of: ammonia nitrogen oxides sulfur oxides  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported.  
    **LC50:** None reported.  
    **Dermal Toxicity Data:** None reported.  
    **Skin and Eye Irritation Data:** This product is not corrosive to skin. Slight to well defined erythema. Absent to slight edema. (OECD Number 404, Acute Dermal Irritation/Corrosion)  
    **Mutation Data:** None reported.  
    **Reproductive Effects Data:** None reported.

--  
**Ingredient Toxicological Data:** Sulfuric Acid: Oral rat LD<sub>50</sub> = 2140 mg/kg; Inhalation rat LC<sub>50</sub> = 347 ppm/1hr.

An ingredient of this mixture is: IARC Group 1: Recognized Carcinogen  
Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.

---

## 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.

---

## 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.

---

## 14. TRANSPORT INFORMATION

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

**I.C.A.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<45% Sulfuric Acid in solution)

**ICAO Hazard Class:** 8

**ICAO Subsidiary Risk:** NA

**ICAO UN/ID Number:** UN3264

**ICAO Packing Group:** III

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<45% Sulfuric Acid in solution)

**I.M.O. Hazard Class:** 8

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

**I.M.O. UN Number:** UN3264

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

**A.D.R.:**

**A.D.R. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.

(<45% Sulfuric Acid in solution)

**A.D.R Hazard Class:** 8

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

**A.D.R. UN-Number::** 3264

**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

---

## 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:** C - CORROSIVE

**R PHRASES:** R 35: Causes severe burns.

**S PHRASES:** S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 37/39: Wear suitable gloves and eye / face protection. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

---

## 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. Cassaret and Doull's Toxicology, 3rd Ed. New York: Macmillan Publishing Co., Inc., 1986. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. 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.

**R PHRASES:** R 35: Causes severe burns.

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

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

---

**Legend:**

NA - Not Applicable

ND - Not Determined

NV - Not Available

w/w - weight/weight

w/v - weight/volume

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.**

**HACH COMPANY ©2006**