

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

MSDS No: M00088

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Ammonia Reagent 1

**Catalog Number:** 2073549

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

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00088

**Chemical Name:** 2,3 - Dihydroxybutanedioic Acid, Monopotassium Monosodium Salt

**CAS Number:** 304-59-6

**Additional CAS No. (for hydrated forms):** -  
6381-59-5 (tetrahydrate)

**Chemical Formula:** C<sub>4</sub>H<sub>4</sub>O<sub>6</sub>KNa 4 H<sub>2</sub>O

**Chemical Family:** Salts of Organic Acids

**Intended Use:** Laboratory reagent

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## 2. HAZARDS IDENTIFICATION

This substance is not classified as hazardous per GHS (UN publication ST/SG/AC.10/36/Add.3)

**GHS Classification:**

**Hazard categories:** Not applicable

**GHS Label Elements:**

Not applicable

**Hazard statements:** Not applicable

**Precautionary statements:** Not applicable

**HMIS:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Not applicable

**WHMIS Symbols:** Not applicable

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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:** No

**Potassium Sodium Tartrate**

**CAS Number:** 304-59-6

**Chemical Formula:** C<sub>4</sub>H<sub>4</sub>O<sub>6</sub>KNa 4 H<sub>2</sub>O

**GHS Classification:** Not applicable

**Percent Range (Trade Secret):** 100.0

**Percent Range Units:** weight / weight  
**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust  
**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Not applicable

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#### 4. FIRST AID MEASURES

**General Information:** In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

**Advice to doctor:** Treat symptomatically.

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

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

**Inhalation:** Remove to fresh air. If you feel unwell, contact a physician

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Rinse mouth with plenty of water. Give large quantities of water. If vomiting occurs, avoid aspiration by keeping head below hips. If you feel unwell, contact a physician.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is not classified as flammable according to GHS criteria. Dusts at sufficient concentrations can form explosive mixtures with air.

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

**Extinguishing Media:** Water. Carbon dioxide Dry chemical.

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

**Fire / Explosion Hazards:** High concentrations of dust may form an explosive mixture with air.

**Hazardous Combustion Products:** May emit acrid smoke and fumes.

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#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

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

**Clean-up Technique:** If permitted by regulation, Scoop up spilled material into a large beaker and dissolve with water. Flush the spilled material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up.

**DOT Emergency Response Guide Number:** Not applicable

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#### 7. HANDLING AND STORAGE

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

**Storage:** Keep container tightly closed when not in use. Store in a cool, dry, well-ventilated place. Protect from: moisture heat. Keep away from: acids / acid fumes. silver salts

**Flammability Class:** Not applicable

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#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

**Personal Protective Equipment:**

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

**Skin Protection:** nitrile gloves

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes Do not breathe: dust Protect from: moisture heat Keep away from: acids/acid fumes silver salts

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Colorless or white crystals

**Physical State:** Solid

**Molecular Weight:** 210.16

**Odor:** Odorless

**Odor Threshold:** Not applicable

**pH:** 7.0 - 8.5 at 50 g/L

**Metal Corrosivity:**

**Corrosivity Classification:** Not classified as corrosive to metals according to GHS criteria.

**Steel:** Not applicable

**Aluminum:** Not applicable

**Specific Gravity/ Relative Density (water = 1; air = 1):** 1.79

**Viscosity:** Not applicable

**Solubility:**

**Water:** 630 g/L

**Acid:** Soluble

**Other:** Insoluble in alcohol

**Partition Coefficient (n-octanol / water):** KOWWIN Estimation:  $\log K_{ow} = -4.28$

**Coefficient of Water / Oil:** Not determined

**Melting Point:** 70 - 80 °C (158 - 176 °F)

**Decomposition Temperature:** Not applicable

**Boiling Point:** 220 °C (428 °F)

**Vapor Pressure:** Not applicable

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

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

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Material is not classified as flammable according to GHS criteria. Dusts at sufficient concentrations can form explosive mixtures with air.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

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## 10. STABILITY AND REACTIVITY

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

**Mechanical Impact:** Not applicable

**Static Discharge:** Not applicable

**Reactivity / Incompatibility:** Incompatible with: acids Silver Nitrate calcium salts magnesium sulfate lead salts

**Hazardous Decomposition:** In a fire, can release toxic fumes of: sodium oxides potassium oxide carbon monoxide carbon dioxide

**Conditions to Avoid:** Avoid creating dust. Excess moisture Excessive heat Extreme temperatures Incompatibles

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No health effects are anticipated in normal use.

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** No Acute Toxicity Data Found Generally Recognized as Safe (GRAS) designation by US Food and Drug Administration Quantitative structure-activity relationship (QSAR) Estimation Estimation of Toxicity Hazard (Chronic Oral Route) Cramer Classification -Class 1: NOEL (mg/kg bw/day): 3.0; human exposure threshold (mg/person/day): 1.8 Cramer Classification exposure threshold assumes 60 kg body weight (Adapted from Munro et al. 1996. Food Chem. Toxicol. 34: 829) Toxtree (Ideaconsult, Ltd) Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met. Data insufficient for classification Summary of findings reported in the literature follow.

Intervenous Mouse 400 mg/kg/Injury to epithelium of the convoluted tubule

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** No data found Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Based on classification principles, the classification criteria are not met. Testing data given below.

Skin - Rabbit - 500 mg - Not irritating

**Eye Damage:** Based on classification principles, the classification criteria are not met. Test data follows.

Eye - Rabbit - 100 mg - Not irritating

**Sensitization:** No data found. Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** Quantitative structure-activity relationship (QSAR) Estimation Benigni / Bossa rules for mutagenicity and carcinogenicity No Alerts for carcinogenic activity No data supporting germ cell mutagenicity, carcinogenicity or reproductive toxicity was found. Based on classification principles, the classification criteria are not met. Summary of findings reported in the literature follow.

Genotoxicity in vitro, AMES test, Salmonella Typhimurium, 0.033-10 mg/plate (Anhydrous) = Negative

NTP Listed: No

O.S.H.A. Listed: No

**Symptoms/Effects:**

**Ingestion:** No Effects Anticipated Large doses may cause: irritation of the mouth and esophagus abdominal pain gastrointestinal disturbances nausea vomiting diarrhea Very large doses may cause: dehydration hypotension blood changes

**Inhalation:** May cause: irritation of nose and throat

**Skin Absorption:** None Reported No effects anticipated

**Chronic Effects:** None reported

**Medical Conditions Aggravated:** None reported

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** ECOSARS Estimation: 96 hr Fish LC50 = 612000 mg/L; 48 hr Crustacean LC50 = 263000 mg/L; 96 hr Green Algae EC50 = 62377.086 mg/L

No ecological data available for this product. Ecological structure-activity relationship (SAR) Estimation (ECOSAR U.S. EPA 2009) SAR Class Neutral Organics Based on classification principles, not classified as hazardous to the environment. Rapidly biodegradable. No bioaccumulation potential Mobility in soil: Highly mobile

CEPA Categorization: Not Persistent or Bioaccumulative. Not inherently toxic to aquatic organisms.

Readily Biodegradable - BOD 75% after 14 days; KOWWIN Estimation:  $\log K_{ow} = -4.28$ ; KOCWIN Estimation:  $\log K_{oc} = -1.33$

**Ingredient Ecological Information:** --

Not applicable

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** Dilute material with excess water making a weaker than 5% solution. If permitted by regulation, Open cold water tap completely, slowly pour the material to the drain. Otherwise, Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

**Empty Containers:** Working in a well-ventilated area, Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste. Dispose of empty container as normal trash.

**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

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

### **T.D.G.:**

**Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA

**Subsidiary Risk:** NA

**UN Number/PIN:** NA

**Packing Group:** NA

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

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

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**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

### **I.M.O.:**

**Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

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## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

**Trade Secret Registry:** Not applicable

### **National Inventories:**

**U.S. Inventory Status:** TSCA Listed: Yes

*CAS Number:* 304-59-6  
*Canadian Inventory Status:* DSL Listed: Yes  
*EEC Inventory Status:* EINECS Listed: Yes  
*Australian Inventory (AICS) Status:* Listed  
*New Zealand Inventory (NZIoC) Status:* Listed  
*Korean Inventory (KECI) Status:* Listed - See anhydrous Chemical Abstract (CAS) Registry Number  
*Japan (ENCS) Inventory Status:* Listed  
*China (PRC) Inventory (MEP) Status:* Listed

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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. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Vendor Information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984.

**Complete Text of H phrases referred to in Section 3:** Not applicable

**Revision Summary:** Substantially Revised MSDS Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

**Date of MSDS Preparation:**

*Day:* 03

*Month:* June

*Year:* 2014

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

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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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