

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

MSDS No: M00045

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** BariVer™ 4 Barium Reagent  
**Catalog Number:** 1206499

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:** M00045  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Intended Use:** Determination of barium

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## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** . . Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation:Eye Irrit. 2  
Respiratory or Skin Sensitization: Skin Sens.1 Respiratory or Skin Sensitization: Resp. Sens.1

**GHS Label Elements:**

DANGER



**Hazard statements:** . . Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Precautionary statements:** Avoid breathing dust/fume/gas/mist/vapours/spray. Wear eye protection. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. . If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

**HMIS:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class D, Division 2, Subdivision B - Toxic material (other toxic effects)

**WHMIS Symbols:** Other Toxic Effects

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

*Hazardous Components according to GHS:*

**Citric Acid**

*CAS Number:* 77-92-9

*Chemical Formula:*  $C_6H_8O_7$

*GHS Classification:* Eye Irrit. 2, H319; Skin irrit. 2, H315

*Percent Range:* 60.0 - 70.0

*Percent Range Units:* weight / weight

*PEL:* 15 mg/m<sup>3</sup> as total 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:* Other Toxic Effects

**Gum Arabic**

*CAS Number:* 9000-01-5

*Chemical Formula:* Not applicable

*GHS Classification:* Eye Irrit. 2, H319; Skin Sens. 1, H317; Resp. Sens. 1, H334

*Percent Range:* 1.0 - 10.0

*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:* Other Toxic Effects

*Hazardous Components according to GHS: Yes- Aquatic Acute 2 or Aquatic Acute 3*

**Sodium Sulfate**

*CAS Number:* 7757-82-6

*Chemical Formula:*  $Na_2SO_4$

*GHS Classification:* Aquatic Acute 3, H402

*Percent Range:* 20.0 - 30.0

*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.

*Skin Contact (First Aid):* Remove contaminated clothing. Wash skin with soap and plenty of water for 15 minutes. Call physician immediately.

*Inhalation:* Remove to fresh air.

*Ingestion (First Aid):* Do not induce vomiting. Give large quantities of water. Call physician immediately. Never give anything by mouth to an unconscious person.

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### 5. FIRE FIGHTING MEASURES

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

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

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

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

*Fire / Explosion Hazards:* Contact with metal nitrates may cause explosion. May react violently with: strong acids strong bases aluminum / aluminum compounds

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

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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.

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

**Clean-up Technique:** If permitted by regulation, Sweep up material. 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. 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. If conditions warrant, increase the size of the evacuation.

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

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## 7. HANDLING AND STORAGE

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

**Storage:** Store at 10 - 30°C. Protect from: moisture

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

### **Personal Protective Equipment:**

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

**Skin Protection:** disposable latex gloves lab coat. In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.

**Inhalation Protection:** adequate ventilation

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

**TLV:** Not established

**PEL:** Not established

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** White powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Not determined

**Odor Threshold:** Not determined

**pH:** 5% solution = 2.2

### **Metal Corrosivity:**

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

**Steel:** 0.189 in/yr

**Aluminum:** 0.002 in/yr

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.87

**Viscosity:** Not applicable

### **Solubility:**

**Water:** Soluble

**Acid:** Not determined

**Other:** Not determined

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

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

**Melting Point:** 100° C (212° F)

**Decomposition Temperature:** Not determined

**Boiling Point:** Not applicable

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable  
**Evaporation Rate (water = 1):** Not applicable  
**Volatile Organic Compounds Content:** Not determined  
**Flammable Properties:** Can burn in fire, releasing toxic vapors.  
**Flash Point:** Not applicable  
**Method:** Not applicable  
**Flammability Limits:**  
**Lower Explosion Limits:** Not applicable  
**Upper Explosion Limits:** Not applicable  
**Autoignition Temperature:** Not determined  
**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.  
Not applicable

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Mechanical Impact:** None reported  
**Static Discharge:** None reported.  
**Reactivity / Incompatibility:** May explode in contact with: metal nitrites Incompatible with: strong acids strong bases Magnesium aluminum oxidizers  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide sulfur oxides  
**Conditions to Avoid:** Excess moisture Extreme temperatures

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.  
**Toxicologically Synergistic Products:** None reported  
**Acute Toxicity:** Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data  
ATE Oral Rat LD50 = 4494 mg/kg  
Dermal LD50 = > 3000 mg/kg  
**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.  
**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.  
**Skin Corrosion/Irritation:** Irritating to skin.  
**Eye Damage:** Irritating to eyes.  
**Sensitization:** Contains a sensitizing compound. Respiratory Sensitizer Skin Sensitizer  
**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.  
This product does NOT contain any IARC listed chemicals.  
This product does NOT contain any NTP listed chemicals.  
This product does NOT contain any OSHA listed carcinogens.  
**Symptoms/Effects:**  
**Ingestion:** May cause: gastrointestinal tract irritation irritation of the mouth and esophagus hives allergic skin reaction  
**Inhalation:** May cause: irritation of nose and throat allergic skin reaction  
**Skin Absorption:** None Reported  
**Chronic Effects:** Citric acid chronic overexposure may cause effects due to the ability of citric acid to chelate metals, which could impair the body's ability to absorb calcium and iron.  
**Medical Conditions Aggravated:** Allergies or sensitivity to gum arabic. Pre-existing: Eye conditions Respiratory conditions

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Sodium Sulfate: Aquatic Toxicity: TLm 13500 mg/l bluegill sunfish/96 hours, TLm 16500 mg/l mosquito fish/96 hours; Citric Acid: Lepomis macrochirus LC<sub>50</sub>(96 hrs): 1516 mg/L; Daphnia magna LC<sub>50</sub> (72 hrs): 120mg/L

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

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### 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** If permitted by regulation, Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Dispose of material in an E.P.A. approved hazardous waste facility.

**Empty Containers:** Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. Dispose of empty container as normal trash. 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.

**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 meets 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):** Immediate (Acute) Health Hazard

**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):** None

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

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL Listed.

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

**Australian Inventory (AICS) Status:** All ingredients are listed.

**New Zealand Inventory (NZIoC) Status:** All components either listed or exempt.

**Korean Inventory (KECI) Status:** All components of this product are either listed, listed as the anhydrous compound or exempt.

**Japan (ENCS) Inventory Status:** All components either listed or exempt.

**China (PRC) Inventory (MEP) Status:** All components either listed or exempt.

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## 16. OTHER INFORMATION

**References:** 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. In-house information. Sax, N. Irving and Richard J. Lewis, Sr., revised by. Hawley's Condensed Chemical Dictionary, Eleventh Ed. New York: Van Nostrand Reinhold Co., 1987. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Patty, Frank A. Industrial Hygiene and Toxicology, 3rd Revised Edition. Volume 2. New York: A Wiley-Interscience Publication, 1981. Vendor Information.

**Complete Text of H phrases referred to in Section 3:** . H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. .

**Revision Summary:** New SDS 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:** 29

**Month:** July

**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

ND - Not Determined

w/w - weight/weight

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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