

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

Section 1 - Identification

Product Name Barium hydroxide, anhydrous

CAS No 17194-00-2

Product Code **B47-250; B47-500**

Address ThermoFisher Scientific Australia Pty Ltd
 5 Caribbean Drive, Scoresby
 VICTORIA 3179, Australia

Emergency Tel. **CHEMTREC®**
03 9757 4559 or +613 9757 4559

Telephone / Fax Numbers Tel: 1300 735 292
 Fax: 1800 067 639

E-mail address ANZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Uses advised against This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.
 This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards
 No hazards identified

Health hazards

Acute Oral Toxicity
 Acute Inhalation Toxicity - Dusts and Mists
 Skin Corrosion/Irritation
 Serious Eye Damage/Eye Irritation

Category 4
 Category 4
 Category 1 A
 Category 1

Environmental hazards
 No hazards identified

Label Elements



Exclamation Mark



Corrosion

Signal Word**Danger****Hazard Statements**

H314 - Causes severe skin burns and eye damage

H302 + H332 - Harmful if swallowed or if inhaled

AUH071 - Corrosive to the respiratory tract

Precautionary Statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

P331 - Do NOT induce vomiting

P363 - Wash contaminated clothing before reuse

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

Toxic to terrestrial vertebrates

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Barium hydroxide (Ba(OH) ₂)	17194-00-2	> 95

Section 4 - First Aid Measures**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Ingestion

Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes.

Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

Section 6 - Accidental Release Measures

Emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

Environmental Precautions

Should not be released into the environment. Do not allow material to contaminate ground water system.

Methods for Containment and Clean Up

Clean-up methods - small spillage

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Clean-up methods - large spillage

Typically only supplied in small quantities as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume

hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a cool, well-ventilated place. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Exposure limits

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]

updated in August, 2005. Safe Work Australia **ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace. **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **DE** - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Barium hydroxide (Ba(OH) ₂)	TWA: 0.5 mg/m ³		TWA: 0.5 mg/m ³	STEL: 1.5 mg/m ³ 15 min TWA: 0.5 mg/m ³ 8 hr	TWA: 0.5 mg/m ³ (8 Stunden). AGW - exposure factor 1 TWA: 0.5 mg/m ³ (8 Stunden). MAK Höhepunkt: 4 mg/m ³

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Exposure Controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber	See manufacturers	-	AS/NZS 2161	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection

Long sleeved clothing

Respiratory Protection

Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment

**Recommended Filter type:
Recommended half mask:-**

must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices
 Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
 Particle filtering: EN149:2001 (or AUS/NZ equivalent)
 When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Clear	
Physical State	Solid	
Odor	Odorless	
Odor Threshold	No data available	
pH	12.0	Alkaline
Melting Point/Range	78 °C / 172.4 °F	
Softening Point	No data available	
Boiling Point/Range	780 °C / 1436 °F	
Flash Point	Not applicable	Method - No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	negligible	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	2.18	
Bulk Density	No data available	
Water Solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	
Other information		
Molecular Formula	BaH2O2	
Molecular Weight	171.34	

Section 10 - Stability and Reactivity

Reactivity	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Avoid dust formation, Incompatible products.
Incompatible Materials	None known.
Hazardous Decomposition Products	None under normal use conditions.
Hazardous Polymerization	No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral	Category 4
Dermal	No data available
Inhalation	Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Barium hydroxide (Ba(OH) ₂)	LD50 = 308 mg/kg (Rat)		

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory	No data available
Skin	No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; Not applicable
Solid

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Section 12 - Ecological Information

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Persistence and Degradability

Persistence

Soluble in water, Persistence is unlikely, based on information available.

Degradability

Not relevant for inorganic substances.

Bioaccumulative Potential

Bioaccumulation is unlikely

Mobility

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected substance
This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Chemical wastes should be disposed through a licensed commercial waste collection service. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before discharge.

Section 14 - Transport Information

IMDG/IMO

UN-No	UN3262
Proper Shipping Name	Corrosive solid, basic, inorganic, n.o.s.
Technical Shipping Name	Barium hydroxide (Ba(OH) ₂)
Hazard Class	8
Packing Group	II

ADG

UN-No	UN3262
Proper Shipping Name	Corrosive solid, basic, inorganic, n.o.s.
Technical Shipping Name	Barium hydroxide (Ba(OH) ₂)
Hazard Class	8
Packing Group	II

IATA

UN-No	UN3262
Proper Shipping Name	Corrosive solid, basic, inorganic, n.o.s.
Technical Shipping Name	Barium hydroxide (Ba(OH) ₂)
Hazard Class	8
Packing Group	II

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National Regulations Australia

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Barium hydroxide (Ba(OH) ₂) - 17194-00-2	Schedule 6 listed - except: when included in Schedule 5, Barium sulfate, or in paints or tinters containing ≤5% of Barium calculated on the non-volatile content of the paint or tinter

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Barium hydroxide (Ba(OH) ₂) - 17194-00-2	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemicals of Security Concern

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Not applicable

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Barium hydroxide (Ba(OH) ₂)	X	X	241-234-5	-	X	X	-	X	X	X	X	KE-02060

Legend: X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their disposal

Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Barium hydroxide (Ba(OH) ₂)	17194-00-2	Listed	Not applicable	Not applicable	Not applicable

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Barium hydroxide (Ba(OH) ₂)	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List IECSC - Chinese Inventory of Existing Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances TWA - Time Weighted Average IARC - International Agency for Research on Cancer ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships NZS 5433:2012 - Transport of Dangerous Goods on Land LD50 - Lethal Dose 50% EC50 - Effective Concentration 50% WEL - Workplace Exposure Limit DNEL - Derived No Effect Level POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative VOC - (Volatile Organic Compound)	NZIoC - New Zealand Inventory of Chemicals EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances ENCS - Japanese Existing and New Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances CAS - Chemical Abstracts Service ACGIH - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC) IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code ADG Australian Code for the Transport of Dangerous Goods by Road and Rail OECD - Organisation for Economic Co-operation and Development LC50 - Lethal Concentration 50% ATE - Acute Toxicity Estimate RPE - Respiratory Protective Equipment NOEC - No Observed Effect Concentration BCF - Bioconcentration factor PBT - Persistent, Bioaccumulative, Toxic
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Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>
 Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Revision Date

21-Nov-2022

Revision Summary

Not applicable.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the

date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet