

	n number: 12.0 lentifier: V9202SS	Revision: 2023-11-08
SEC	TION 1: Identification	
1.1	Product identifier	
	SDS Identifier	V9202SS
	Catalog numbers	A-9202, S-9202, S-9202T
1.2	Relevant identified uses of the substance or m	ixture and uses advised against
	Relevant identified uses	Components of water analysis test kits
1.3	Details of the supplier of the safety data sheet	
	AquaPhoenix Scientific, Inc. 860 Gitts Run Road Hanover PA 17331 United States	
	Telephone: (717) 632-1291 e-mail: info@aquaphoenixsci.com Website: https://www.aquaphoenixsci.com/	
	e-mail (competent person)	scraig@aquaphoenixsci.com (Stephen Craig)
1.4	Emergency telephone number	
	Emergency information service	ChemTel Inc.: 1-800-255-3924, +01-813-248-0585
SEC	TION 2: Hazard(s) identification	
2.1	Classification of the substance or mixture	
	Classification acc. to GHS	

Classification acc. to GHS

Hazard class	Category	Hazard class and cat- egory	Hazard state- ment
acute toxicity (oral)	3	Acute Tox. 3	H301
acute toxicity (inhal.)	4	Acute Tox. 4	H332
hazardous to the aquatic environment - acute hazard	2	Aquatic Acute 2	H401

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements



Version number: 12.0 SDS Identifier: V9202SS	Revision: 2023-11-08
Labeling	
- Signal word	danger
- Pictograms	
GHS06	
- Hazard statem	ents
H301	Toxic if swallowed.
H332	Harmful if inhaled.
H401	Toxic to aquatic life.
- Precautionary s	statements
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P301+P316	IF SWALLOWED: Get emergency medical help immediately.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P317	Get medical help.
P321	Specific treatment (see on this label).
P330	Rinse mouth.
P405	Store locked up.
P501	Dispose of contents/container to industrial combustion plant.
- Hazardous ingr	redients for labelling barium chloride, dihydrate
2.3 Other hazards	
Results of PBT a	nd vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of \geq 0.1%.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\ge 0.1\%$.



Version number: 12.0 SDS Identifier: V9202SS Revision: 2023-11-08

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
barium chloride, dihydrate	CAS No 10326-27-9 10361-37-2	100	Acute Tox. 3 / H301 Acute Tox. 4 / H332 Aquatic Acute 2 / H401	

For full text of abbreviations: see SECTION 16.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Brush off loose particles from skin. Rinse skin with water/shower.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none



Version number: 12.0 SDS Identifier: V9202SS

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Alcohol resistant foam, ABC-powder

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains, Take up mechanically

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.



Version number: 12.0 SDS Identifier: V9202SS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Wear impact- and splash-resistant eyewear.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres
- Removal of dust deposits.

Control of the effects

Protect against external exposure, such as

heat, high temperatures, light, UV-radiation/sunlight

- Ventilation requirements

Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters



Revision: 2023-11-08

Occup	Occupational exposure limit values (Workplace Exposure Limits)										
Coun- try	Name of agent	CAS No	Identi- fier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Nota- tion	Source
US	particulates not otherwise classified		REL							appx-D	NIOSH REL
US	particulates not otherwise classi- fied (PNOC)		PEL	1,766	15					partml, i, dust	29 CFR 1910.100 0
US	particulates not otherwise classi- fied (PNOC)		PEL	529.5	5					partml, r, dust	29 CFR 1910.100 0
US	Particulates not otherwise regu- lated		PEL (CA)		10					dust	Cal/ OSHA PEL
US	Particulates not otherwise regu- lated		PEL (CA)		5					r	Cal/ OSHA PEL
US	barium, soluble compounds	10361-37-2	PEL (CA)		0.5					Ва	Cal/ OSHA PEL
US	barium, soluble compounds	10361-37-2	TLV®		0.5					Ва	ACGIH® 2023
US	barium, soluble compounds	10361-37-2	PEL		0.5					Ва	29 CFR 1910.100 0
US	barium chloride	10361-37-2	REL		0.5 (10 h)					Ва	NIOSH REL

Notation

Notation	
appx-D	see Appendix D - Substances with No Established RELs
Ва	calculated as Ba (barium)
Ceiling-C	ceiling value is a limit value above which exposure should not occur
dust	as dust
i	inhalable fraction
partml	particles/ml
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time- weighted average (unless otherwise specified

Relevant DNELs of components							
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time	
barium chloride, di- hydrate	10326-27-9 10361-37-2	DNEL	8.8 mg/m³	human, inhalatory	worker (industry)	chronic - systemic ef- fects	



Revision: 2023-11-08

Relevant DNELs of components							
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time	
barium chloride, di- hydrate	10326-27-9 10361-37-2	DNEL	43.2 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic ef- fects	

Relevant PNECs of components

	-					
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
barium chloride, di- hydrate	10326-27-9 10361-37-2	PNEC	174 ^{µg} / _l	aquatic organisms	freshwater	short-term (single in- stance)
barium chloride, di- hydrate	10326-27-9 10361-37-2	PNEC	94.3 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single in- stance)
barium chloride, di- hydrate	10326-27-9 10361-37-2	PNEC	908 ^{mg} / _{kg}	aquatic organisms	freshwater sediment	short-term (single in- stance)
barium chloride, di- hydrate	10326-27-9 10361-37-2	PNEC	314.9 ^{mg} / _{kg}	terrestrial organ- isms	soil	short-term (single in- stance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

In the case of wanting to use the gloves again, clean them before taking off and air them well.

- Other protection measures

Wash hands thoroughly after handling.

Respiratory protection

Particulate filter device (EN 143).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.



Version number: 12.0 SDS Identifier: V9202SS

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Product description: Plastic bottle, contains approximately 14.5 g of powder reagent. Test kits contain one (1) bottle of Activator Powder

Physical state	solid
Color	white
Odor	odorless
Melting point/freezing point	962 °C at 1,003 hPa
Boiling point or initial boiling point and boiling range	1,560 °C
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	5 – 8 (in aqueous solution: 5 % (^w / _w), 20 °C)
Kinematic viscosity	not relevant

Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available
---------------------------------------------------	-----------------------------------

Vapor pressure	not determined



Revision: 2023-11-08

Density and/or relative density

Density	not determined
Relative vapour density	information on this property is not available
Relative density	3.86 (water = 1)

Particle characteristics	no data available	

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)



Revision: 2023-11-08

Acute toxicity

Toxic if swallowed. Harmful if inhaled.

- Acute toxicity estimate	e (ATE)
Oral	100 ^{mg} / _{kg}
Inhalation: dust/mist	1.5 ^{mg} / _l /4h

Acute toxicity estimate (ATE) of compor	ients		
Name of substance	CAS No	Exposure route	ATE
barium chloride, dihydrate	10326-27-9 10361-37-2	oral	100 ^{mg} / _{kg}
barium chloride, dihydrate	10326-27-9 10361-37-2	inhalation: dust/mist	1.5 ^{mg} / _l /4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.



Version number: 12.0 SDS Identifier: V9202SS

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life.

Aquatic toxicity (acute) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
barium chloride, di- hydrate	10326-27-9 10361-37-2	LC50	>3.5 ^{mg} / _l	fish	96 h
barium chloride, di- hydrate	10326-27-9 10361-37-2	EC50	25.78 ^{mg} / _l	aquatic invertebrates	48 h
barium chloride, di- hydrate	10326-27-9 10361-37-2	ErC50	>1.15 ^{mg} / _l	algae	72 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB. Does not contain a PBT-/vPvB-substance in a concentration of \geq 0.1%.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\ge 0.1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Please consider the relevant national or regional provisions.



Version number: 12.0 SDS Identifier: V9202SS

SECTION 14: Transport information

14.1		
	DOT	UN 1564
	IMDG-Code	UN 1564
	ICAO-TI	UN 1564
14.2	UN proper shipping name	
	DOT	Barium compounds, n.o.s.
	IMDG-Code	BARIUM COMPOUND, N.O.S.
	ICAO-TI	Barium compound, n.o.s.
	Technical name (hazardous ingredients)	barium chloride, dihydrate
14.3	Transport hazard class(es)	
	DOT	6.1
	IMDG-Code	6.1
	ICAO-TI	6.1
14.4	Packing group	
	DOT	III
	IMDG-Code	III
	ICAO-TI	III
14.5	Environmental hazards	non-environmentally hazardous acc. to the danger- ous goods regulations

14.6 Other relevant information

Shipping container markings and labels, received from CHEMetrics, may vary from the above information. Products that are regulated for transport will be packaged by CHEMetrics as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations. CHEMetrics may also elect to ship certain products as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III. In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.



Information for each of the UN Model Regulations			
Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information			
Particulars in the shipper's declaration	UN1564, Barium compounds, n.o.s., (contains: bari- um chloride, dihydrate), 6.1, III		
Danger label(s)	6.1		
Yest I			
Special provisions (SP)	IB8, IP3, T1, TP33		
ERG No	154		
International Maritime Dangerous Goods Code (IMDG) - Additional information		
Marine pollutant	-		
Danger label(s)	6.1		
Special provisions (SP)	177, 223, 274		
Excepted quantities (EQ)	E1		
Limited quantities (LQ)	5 kg		
EmS	F-A, S-A		
Stowage category	A		
International Civil Aviation Organization (ICAO-I	ATA/DGR) - Additional information		
Danger label(s)	6.1		
Special provisions (SP)	A3, A82		
Excepted quantities (EQ)	E1		
Limited quantities (LQ)	10 kg		



Version number: 12.0 SDS Identifier: V9202SS

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA)

all ingredients are listed (ACTIVE) or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Cher	nical Listings	
Name of substance	Remarks	Effective date
barium chloride, dihydrate	except for barium sulfate (CAS No. 7727- 43-7)	1986-12-31

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4) none of the ingredients are listed

Clean Air Act

none of the ingredients are listed

Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	Remarks	Classifications
barium chloride, dihydrate		

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed



Revision: 2023-11-08

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)
VN	NCI	all ingredients are listed
Legend		

Legend	
AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.



Version number: 12.0 SDS Identifier: V9202SS Revision: 2023-11-08

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Sub- stances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2023	From ACGIH®, 2023 TLVs® and BEIs® Book. Copyright 2023. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presenta-tions/tlv-bei-position-statement
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
ATE	Acute Toxicity Estimate
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
ΙΑΤΑ	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code



Version number: 12.0 SDS Identifier: V9202SS Revision: 2023-11-08

Abbr.	Descriptions of used abbreviations
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP	No-Longer Polymer
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture. Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H301	Toxic if swallowed.
H332	Harmful if inhaled.
H401	Toxic to aquatic life.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.