

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 1 of 11

**1. Identification****Product identifier**

Borate Buffer

**Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Reagents and laboratory chemicals  
Only for laboratory and analysis purposes.

**Uses advised against**

Do not use for private purposes (household).

**Details of the supplier of the safety data sheet****Details of the supplier of the safety data sheet**

Company name: AnalytiChem Services, Unipessoal, Lda  
Street: Rua de Júlio Dinis 676 7º  
Place: P-4050-320 Porto  
Telephone: +351 226002917  
E-mail: info@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Internet: www.analytichem.com  
Responsible Department: SDS service department

**Supplier or manufacturer details**

Company name: AnalytiChem Canada Inc.  
Street: Québec, CANADA  
Place: 21800 Clark Graham Ave  
CDN-H9X 4B6 Baie-D'Urfé  
Telephone: +1 (800) 361-6820  
E-mail: info@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Internet: www.analytichem.com  
Responsible Department: AnalytiChem:  
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20  
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200  
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848  
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500  
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378  
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701  
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333  
Telefax: +1 (800) 253-5549

**Emergency telephone number:**

+1 703-741-5970 (CHEMTREC)

**Further Information**

This product is a mixture. REACH Registration Number see section 3.

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 2 of 11

**2. Hazard identification****Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Repr. 1B; H360FD

Full text of hazard statements: see SECTION 16.

**Label elements****Regulation (EC) No 1272/2008****Hazard components for labelling**

"disodium tetraborate decahydrate; borax decahydrate"

**Signal word:** Danger**Pictograms:****Hazard statements**

H360FD May damage fertility. May damage the unborn child.

**Precautionary statements**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P280 Wear protective gloves/protective clothing and eye protection/face protection.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P405 Store locked up.  
 P501 Dispose of contents/container to hazardous or special waste collection point.

**Special labelling**

Restricted to professional users.

**Other hazards**

No data available

**3. Composition/information on ingredients****Mixtures****Chemical characterization**

Mixtures in aqueous solution

**Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"			< 1 %
	215-540-4	005-011-00-4		
	Repr. 1B; H360FD			

Full text of H statements: see section 16.

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 3 of 11

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
1303-96-4	215-540-4	"disodium tetraborate decahydrate; borax decahydrate"	< 1 %
		inhalation: LC50 = > 2,04 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2500 mg/kg	

**Further Information**

No data available

**4. First-aid measures****Description of first aid measures****General information**

No data available

**After inhalation**

Provide fresh air.

**After contact with skin**

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

**Most important symptoms and effects, whether acute or delayed**

No data available

**Indication of immediate medical attention and special treatment needed**

No data available

**5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

**Specific hazards arising from the hazardous product**

Non-combustible liquids

**Special protective equipment and precautions for fire-fighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

Suppress gases/vapours/mists with water spray jet.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures****General advice**

Do not breathe vapour/aerosol.

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 4 of 11

**For non-emergency personnel**

- Provide adequate ventilation.
- Use personal protection equipment.
- Avoid contact with skin, eyes and clothes.
- Remove persons to safety.
- Emergency procedures
- Consult an expert
- Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**Environmental precautions**

Do not allow to enter into surface water or drains.

**Methods and material for containment and cleaning up****For containment**

Cover drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**Reference to other sections**

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

**7. Handling and storage****Precautions for safe handling****Advice on safe handling**

Do not breathe vapour/aerosol.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

- Take off contaminated clothing.
- Wash hands before breaks and after work.

**Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

- Keep container tightly closed.
- Store in a dry place.

**Hints on joint storage**

Take national regulations into account.

**Further information on storage conditions**

Store in a dry place.

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 5 of 11

Store in a place accessible by authorized persons only.

**Specific end use(s)**

Laboratory chemicals

**8. Exposure controls/Personal protection****Control parameters****Exposure limits (ACGIH)**

CAS No	Chemical name	ppm	mg/m <sup>3</sup>	Category	Origin
1303-96-4	Borate compounds, inorganic: Borates, tetra, sodium salts (decahydrate) (inhalable fraction)		2	TWA (8 h)	ACGIH-2025
			6	STEL (15 min)	ACGIH-2025

**DNEL/DMEL values**

CAS No	Chemical name	Exposure route	Effect	Value
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"			
Worker DNEL, long-term		inhalation	systemic	6,7 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	316,4 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	3,4 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	159,5 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,79 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	0,79 mg/kg bw/day

**PNEC values**

CAS No	Chemical name	Value
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"	
Freshwater		2,9 mg/l
Freshwater (intermittent releases)		13,7 mg/l
Marine water		2,9 mg/l
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		5,7 mg/kg

**Exposure controls****Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 6 of 11

control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

**Skin protection**

Wear suitable protective clothing.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

**Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Thermal hazards**

No data available

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**9. Physical and chemical properties****Information on basic physical and chemical properties**

Physical state:	Liquid	
Colour:	not determined	
Odour:	odourless	
Odour threshold:	not determined	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		not determined
Flammability:		not determined
Lower explosive limits:		not determined
Upper explosive limits:		not determined
Flash point:		X
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value:		not determined
Viscosity / kinematic:		not determined
Water solubility:		not determined
Solubility in other solvents		
not determined		
Dissolution rate:		not determined
Partition coefficient n-octanol/water:		not determined
Dispersion stability:		not determined
Vapour pressure:		not determined
Vapour pressure:		not determined
Density:		not determined
Relative density:		not determined
Bulk density:		not determined
Relative vapour density:		not determined
Particle characteristics:		not determined

**Other information****Information with regard to physical hazard classes**

Explosive properties

not applicable

Sustained combustibility:

No data available

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 7 of 11

Self-ignition temperature

Solid:

not determined

Gas:

not applicable

Oxidizing properties

Not oxidising.

**Other safety characteristics**

Evaporation rate:

not determined

Solvent separation test:

not determined

Solvent content:

not determined

Solid content:

not determined

Sublimation point:

not determined

Softening point:

not determined

Pour point:

not determined

not determined:

Viscosity / dynamic:

not determined

Flow time:

not determined

**Further Information**

not determined

**10. Stability and reactivity****Reactivity**

No data available

**Chemical stability**

The product is stable under storage at normal ambient temperatures.

**Possibility of hazardous reactions**

No data available

**Conditions to avoid**

No data available

**Incompatible materials**

No data available

**Hazardous decomposition products**

No data available

**Further information**

No data available

**11. Toxicological information****Information on toxicological effects****Toxicokinetics, metabolism and distribution**

There are no data available on the mixture itself.

**Acute toxicity**

Based on available data, the classification criteria are not met.

**ATEmix calculated**

ATE (oral) &gt; 2000 mg/kg; ATE (dermal) &gt; 2000 mg/kg; ATE (inhalation vapour) &gt; 20 mg/l; ATE (inhalation dust/mist) &gt; 5 mg/l

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 8 of 11

CAS No	Chemical name				
	Route of exposure	Dose	Species	Source	Method
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"				
	oral	LD50 > 2500 mg/kg	Rat	Study report (1996)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1985)	other: This study was carried out to com
	inhalation (4 h) dust/mist	LC50 > 2,04 mg/l	Rat	Study report (1994)	OECD Guideline 403

**Irritation and corrosivity**

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

**Sensitizing effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

May damage fertility. May damage the unborn child. ("disodium tetraborate decahydrate; borax decahydrate")

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

There are no data available on the mixture itself.

**Specific effects in experiment on an animal**

There are no data available on the mixture itself.

**Additional information on tests**

There are no data available on the mixture itself.

**Practical experience**

There are no data available on the mixture itself.

**Information on other hazards****Endocrine disrupting properties**

There are no data available on the mixture itself.

**Other information**

There are no data available on the mixture itself.

**Further information**

There are no data available on the mixture itself.

**12. Ecological information****Ecotoxicity**

Based on available data, the classification criteria are not met.

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 9 of 11

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"					
	Acute fish toxicity	LC50 79,7 mg/l	96 h	Pimephales promelas	Study report (2010)	other: ASTM E729-95 Standard Guide for C
	Acute algae toxicity	ErC50 66 mg/l	72 h	Phaeodactylum tricornutum	Study report (2011)	ISO 10253
	Acute crustacea toxicity	EC50 102 mg/l	48 h	Ceriodaphnia dubia	Study report (2010)	other: ASTM E729-95 Standard Guide for C
	Fish toxicity	NOEC 6,4 mg/l	34 d	Danio rerio	Study report (2000)	OECD Guideline 210
	Algae toxicity	NOEC mg/l 17,5	3 d	Pseudokirchneriella subcapitata	Study report (2000)	OECD Guideline 201
	Crustacea toxicity	NOEC mg/l 10,8	21 d	Daphnia magna	Study report (2000)	OECD Guideline 211
	Acute bacteria toxicity	EC50 mg/l ( ) > 10000	3 h	activated sludge of a predominantly domestic sewage	Study report (2001)	OECD Guideline 209

**Persistence and degradability**

There are no data available on the mixture itself.

**Bioaccumulative potential**

There are no data available on the mixture itself.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"	-1,53

**BCF**

CAS No	Chemical name	BCF	Species	Source
1303-96-4	"disodium tetraborate decahydrate; borax decahydrate"	0,558	Oncorhynchus nerka	Water Research Vol.

**Mobility in soil**

There are no data available on the mixture itself.

**Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**Other adverse effects**

Do not empty into drains.

**Further information**

Discharge into the environment must be avoided.

**13. Disposal considerations****Waste treatment methods**

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 10 of 11

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

**Contaminated packaging**

Waste codes/waste designations according to EWC/AVV

**14. Transport information****Land transport (ADR/RID)**

**UN number or ID number:** No dangerous good in sense of this transport regulation.  
**United Nations proper shipping name:** No dangerous good in sense of this transport regulation.  
**Transport hazard class(es):** No dangerous good in sense of this transport regulation.  
**Packing group:** No dangerous good in sense of this transport regulation.

**Inland waterways transport (ADN)**

**UN number or ID number:** No dangerous good in sense of this transport regulation.  
**United Nations proper shipping name:** No dangerous good in sense of this transport regulation.  
**Transport hazard class(es):** No dangerous good in sense of this transport regulation.  
**Packing group:** No dangerous good in sense of this transport regulation.

**Marine transport (IMDG)**

**UN number or ID number:** No dangerous good in sense of this transport regulation.  
**United Nations proper shipping name:** No dangerous good in sense of this transport regulation.  
**Transport hazard class(es):** No dangerous good in sense of this transport regulation.  
**Packing group:** No dangerous good in sense of this transport regulation.

**Air transport (ICAO-TI/IATA-DGR)**

**UN number or ID number:** No dangerous good in sense of this transport regulation.  
**United Nations proper shipping name:** No dangerous good in sense of this transport regulation.  
**Transport hazard class(es):** No dangerous good in sense of this transport regulation.  
**Packing group:** No dangerous good in sense of this transport regulation.

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**Special precautions for user**

No dangerous good in sense of this transport regulation.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

not applicable

**15. Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulatory information**

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):  
"disodium tetraborate decahydrate; borax decahydrate"

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to Directive  
2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

**Borate Buffer**

Revision: 14.12.2023

Product code: AC15.04591

Page 11 of 11

**National regulatory information**

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing. Observe employment restrictions for women of child-bearing age.

Water hazard class (D): - - non-hazardous to water

**16. Other information****Abbreviations and acronyms**

Repr. 1B: Reproductive toxicity  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road )  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%

**Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008**

Classification	Classification procedure
Repr. 1B; H360FD	Calculation method

**Relevant H statements (number and full text)**

H360FD May damage fertility. May damage the unborn child.

**Further Information**

Provide appropriate information, instructions and training to users

*(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*