

Boric Acid

SANS 10234:2008 and SANS 11014:2010

Date of issue:03/12/2007

Version:1.0

Rev date: 16.02.2023

Section 1. Identification**1.1. Product Identifier:**

Product Name	Boric Acid
Synonyms	Boracic acid, Orthoboric acid
CAS No.	10043-35-3
EC No.	233-139-2
Molecular Formula	H3BO3

1.2. Relevant identified uses of the substance or mixture and uses advised against.**1.2.1. Relevant identified uses:**

Industrial use: Borosilicate glass, ceramics, Detergents, Fertilizers and Fiberglass

1.2.2. Uses advised against:

Consumer uses above the specific concentration limits are not permitted according to REACH Annex XVII, (EU) No 109/2012

1.3. Supplier's details

Company Address	: Rolfes Chemicals Pty Ltd : Cnr Brammer and Strachan Street : Germiston : South Africa
Telephone	
Email	: 011 873 0157 : Info@rolfesza.com
Emergency telephone number	: +27 (0) 0861 114 753

Section 2. Hazards identification**Classification of the substance or mixture**

Reproductive toxicity, category 1B H360FD

Full text of H Statements: see section 16

Specific concentration limits:

(5.5 ≤C<100) Repr.1B, H360FD

Adverse physicochemical, human health and environmental effects

May damage fertility or unborn child

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GHS label elements

Labelling according to Regulation (EC (no 1272/2008 (CLP)

Other hazards

Other hazards which does not result in classification : Dispose of contents/container to hazardous or special waste Collection points, in accordance with local, regional, national and/or international regulations.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Label elements Not a hazardous substance or mixture

Pictogram (CLP)

:



Signal Word (CLP)

: Danger

Hazard Statement

: H360FD – May damage fertility. May damage the unborn child.

: 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/eye protection/face protection.

P308+P313 – If exposed or concerned: Get medical advice/attention.

P405 – Store locked up

Extra phrase

: Restricted to professional users

Section 3 Composition/Information on Ingredients

3.1. Substance:

Substance type

: Mono-constituent

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 (CLP)
BORIC ACID Substance listed as REACH Candidate	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2 (REACH-no) 01-2119486683-250006	>99.9	Repr. 1B, H360FD

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Specific concentration limits:		
Name	Product Identifier	Specific concentration limits:
BORIC ACID	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2 (REACH-no) 01-2119486683-250006	(5.5 ≤C<100) Repr.1B, H360FD

Full Text of H- Statements: see section 16.

3.2. Mixture: Not applicable

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of First-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most Important Symptoms and Effects, both Acute and Delayed

No additional information available.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

- 1 Treat symptomatically.

Section 5. Fire-fighting measures

> Extinguishing Media

Suitable Extinguishing Media

Dry chemical, Water spray and foam .

Unsuitable

Do not use a solid water stream as it may scatter or spread fire.

Extinguishing Media

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> Specific Hazards Arising from the Substance or Mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

> Advice for Firefighters

As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.

Fight fire from a safe distance, with adequate cover.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6. Accidental release measures**> Personal Precautions, Protective Equipment and Emergency Procedures**

For non-emergency personnel: Only qualified personnel equipped with suitable protective equipment may intervene.

For emergency responders:

Protective equipment : Do not attempt to take action without suitable protective equipment. For further Self-contained breathing apparatus. Complete protective clothing

> Environmental Precautions

Prevent further leakage or spillage if safe to do so.

Discharge into the environment must be avoided.

Notify authorities if product enters sewer or public waters.

> Methods and Materials for Containment and Cleaning Up

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewer or public waters.

Other information : Dispose of materials or solid residue at an authorized site.

>Reference to other sections

For further information refer to section 13.

Section 7. Handling and storage

1. Precautions for Safe Handling:
 - Ensure good ventilation of the workstation.
 - Obtain special instructions before use.
 - Do not handle until all safe precautions have been read and understood.
 - Wear personal protective equipment.
2. Hygiene measures:
 - Separate working clothes from normal clothing.
 - Launder separately.
 - Do not eat, drink, or smoke when using this product.
 - Always wash hands after handling the product.

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3. Precautions for Storage

- Dry and indoor storage is recommended between temperatures +5°C to 30°C.
- Store locked up.
- Store in well-ventilated place.
- Keep cool.

Section 8. Exposure controls/personal protection

Components with workplace control parameters

NATIONAL OCCUPATIONAL EXPOSURE LIMITS

8.1. Control Parameters

Boric Acid (10043-35-3)

DNEL/DMEL(Workers)

Long-term – Systemic effects , dermal	392 mg/kg body weight
Long -term – systemic effects, inhalation	8.3 mg/m ³

DNEL/DMEL (General population)

Acute – systemic effects, oral	0.98 mg/kg bodyweight /day
Long-term – systemic effects, oral	0.98 mg/kg bodyweight /day
Long-term – systemic effects, Inhalation	4.15 mg/m ³
Long-term – systemic effects, dermal	196 mg/kg bodyweight/day

PNEC (Water)

PNEC aqua (freshwater)	2.9 mg/l
PNEC aqua (marine water)	2.9 mg/l
PNEC aqua (intermittent, freshwater)	13.7 mg/l

PNEC (Soil)

PNEC (Soil)	5.7 mg/kg dwt
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PNEC (STP)

PNEC (Sewage treatment plant)	10 mg/l
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8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the workstation.

Personal protective equipment:

Dust formulation: dust mask.

Hand protection:	Protective gloves
Eye protection:	Safety glasses
Skin and body protection:	Wear suitable protective clothing
Respiratory protection:	(In case of inadequate ventilation) wear respiratory protection.

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Personal protective equipment symbol (s):



Environmental exposure controls:

Avoid released to the environment.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	White solid. Granular/powder.
Molecular mass	:	61.83 g/mol
Colour	:	white.
Odour	:	odourless
Odour threshold	:	No data available
pH	:	<u>5.1@20 C</u>
pH Solution	:	1%
Relative evaporation	:	no data available
Melting point	:	450°C
Freezing point	:	Not applicable
Boiling point	:	1860°C
Flashpoint	:	non-flammable
Auto ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	non-flammable
Vapour pressure	:	0.000099 Pa Temp.:25°C
Relative vapour density at 20°C	:	No data available
Relative density	:	1.49 Type: 'relative density' Temp.: 23°C
Density	:	1489 kg/m ³ Type: 'density' Temp.: 23°C
Solubility	:	Water: 4.9 % @20 C
Partition coefficient	:	No data available
Viscosity, Kinematic	:	Not applicable
Viscosity, dynamic	:	No data available
Explosive properties	:	Non explosive
Oxidising properties	:	No data available
Explosive limits	:	Not applicable

9.2. Other information: No additional information available

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Section 10. Stability and reactivity

Reactivity	This product is not reactive under normal condition of use, storage and transport.
Chemical stability	Stable under normal conditions
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use
Conditions to avoid	None under recommended storage and handling conditions (see section 7)
Incompatible material	Avoid contact with strong agents such as metal hydrides or alkali metals
Materials to avoid	Strong oxidizing agents
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced

Section 11. Toxicological information

Acute toxicity (Oral)	:	Not classified.
Acute Toxicity (Dermal)	:	Not classified.
Acute Toxicity (Inhalation)	:	Not classified.

Boric acid (10043-35-3)	
LD50 Oral rat	>2600 mg/kg bodyweight animal: rat, animal sex: Male, guideline: OECD guideline401(Acute oral toxicity), guideline: EU Method B.1(Acute Toxicity (Oral))
LD50 dermal rabbit	>2000 mg/kg bodyweight animal: rabbit, guideline: other FIFRA (40CFR 163)
LD50 inhalation rat (mg/l)	>2.12 mg/l air Animal: rat, guideline: OECD guideline 403 (Acute Inhalation Toxicity), Guideline: other : USEPA FIFRA 40CFRPart 160

Skin corrosion/irritation Not classified : pH5.1 @20C

Serious eye damage/irritation Not classified

Respiratory or skin sensitisation pH:5.1@20C
not classified

Germ cell mutagenicity not classified

Carcinogenicity not classified

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Reproductive toxicity May damage fertility. May damage the unborn child.

STOT – single exposure Not classified

STOT – Repeated exposure Not classified

Aspiration hazard Not classified

Boric Acid (10043-35-3)	
Viscosity, Kinematic	Not application

Section 12. Ecological information

12.1. Toxicity

Ecology -General

: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short term Acute

: Not classified.

Hazardous to the aquatic environment, long term Chronic

: Not classified.

Not rapidly degradable

Boric acid (10043-35-3)	
LC50- Fish (1)	79.7 mg/l Test organism (species) : Pimephales promelas
LC50- Fish (2)	74 mg/l Test organism (species) : Limanda limanda
EC50 72h -Algae (1)	66 mg/l Test organism (species) : Phaeodactylum tricornutum
EC50 72h -Algae (2)	54 mg/l Test organism (species) : Phaeodactylum tricornutum
NOEC Chronic fish	6.4 mg/l Test organism (species) : Danio rerio (previous name: Brachydanio rerio) duration: '34 d'

12.2. Persistence and degradability

Boric acid (10043-35-3)	
Persistence and degradability	Boron is naturally occurring and ubiquitous in the environment. Boric acid decomposes in the environment to natural borate.

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12.3. Bioaccumulative potential

Boric acid (10043-35-3)	
Bioaccumulative potential	Not Bioaccumulative

12.4. Mobility in soil

Boric acid (10043-35-3)	
Mobility in soil	The product is soluble in water and leachable through normal soil

12.5. Result of PBT and vPvB assesement

Boric acid (10043-35-3)	
This substance/Mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/Mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects:

Additional information : no other effects known

Section 13: Disposal considerations

Waste treatment methods Dispose of contents/container in accordance with licensed collector's sorting instructions

Section 14. Transport information

In accordance with ADR/ IMDG/ IATA/ AND/ RID

DG Pictogram

Not regulated as dangerous goods

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

MARPOL 73/78 and the IBC Code

Not applicable for product supplied

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Section 15: Regulatory Information

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

EU Regulations:

The following restrictions are applicable according to Annex XVII of the REACH Regulations (EC) no 1907/2006:		
Reference code	Applicable on	Entry title or description
30.	Boric Acid	Substance which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively.

Boric acid is on the REACH candidate list

Boric Acid is not on the REACH Annex XIV list

Boric Acid is not subject to regulation (EU) No 649/2012 of the European Parliament and the council of 4 July 2012 concerning the export and import of hazardous chemicals

Boric Acid is not subject to regulation (EU) No 2019/1021 of the European Parliament and the council of 20 June 2019 persistent organic pollutants

15.2. National Regulations

Listed on IECSC (Inventory of Existing Chemical Substances produced or Imported)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substance list)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on the United States TSCA (Toxic Substances Control Act) Inventory

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Section 16. Other information

Full text of H- and EUH Statements

Repr.1B	Reproductive toxicity, Category 1B
H360FD	May damage fertility. May damage the unborn child.
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/eye protection/face protection.
P308+P313	If exposed or concerned: Get medical advice/attention
P405	Store locked up

Supplier Declaration: Exclusion of Liability

Notice to reader:

All reasonable efforts were exercised to compile this SDS in accordance with available information. The SDS provides information regarding the health, safety, and environmental hazards, at the date of issue, to facilitate the safe receipt, use and handling of the product in the workplace. Rolfes Chemicals cannot anticipate or control all conditions under which the product may be handled, used, and received in the workplace, it remains the obligation of each user, receiver, or handler to, prior to usage, review this SDS in the context within which the product will be received, handled, or used in the workplace. The user, handler, or receiver must ensure that the necessary mitigating measures are in place regarding health and safety. This does not substitute the need or requirement for any relevant risk assessment to be conducted. It further remains the responsibility of the receiver, handler, or user to communicate such information to all relevant parties that may be involved in the receipt, use or handling of the product. Although all reasonable efforts were exercised in the compilation of this SDS, Rolfes Chemicals does not expressly warrant the accuracy or assume any liability for the incompleteness of the information contained herein or any advice given. The product is sold, and risk passes in accordance with the specific terms and conditions of sale.