SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/17/2018 Version 1.4

SECTION 1.Identification

Product identifier

Product number	BX0865
Product name	Boric Acid GR ACS
CAS-No.	10043-35-3

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd | 109 Woodbine Downs Blvd. Unit 5 | Etobicoke | Ontario M9W 6Y1 | Canada | General Inquiries: +1 800-645-5476 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.

Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Reproductive toxicity, Category 1B, H360

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word

Danger

Hazard Statements

H360 May damage fertility or the unborn child.

Precautionary Statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	H_3BO_3	BH_3O_3 (Hill)
Molar mass	61.83 g/mol	

Hazardous ingredients

Chemical name (Concentration)
CAS-No.
Boric acid (>= 90 % - <= 100 %)
10043-35-3

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Ingestion
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

drop in temperature, agitation, spasms, Diarrhea, Nausea, Vomiting, Tiredness, ataxia (impaired locomotor coordination)

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Not combustible.
Ambient fire may liberate hazardous vapors.
Fire may cause evolution of:
boron compounds

Advice for firefighters
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
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
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling
Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Conditions for safe storage, including any incompatibilities
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
Boric acid 10043-35-3			
CAD BC OEL	Time Weighted Average (TWA):	2 mg/m³	Form of exposure: Inhalable
	Short Term Exposure Limit (STEL):	6 mg/m³	Form of exposure: Inhalable
CAD MB OEL	Short Term Exposure Limit (STEL):	6 mg/m³	Form of exposure: Inhalable fraction.
	Time Weighted Average (TWA):	2 mg/m³	Form of exposure: Inhalable fraction.
CAD ON OEL	Time Weighted Average (TWAEV):	2 mg/m³	Form of exposure: Inhalable fraction.
	Short Term Exposure Limit (STEV):	6 mg/m³	Form of exposure: Inhalable fraction.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
protective clothing

Respiratory protection
required when dusts are generated.
Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	white
Odor	odorless
Odor Threshold	Not applicable
pH	3.8 - 4.8 at 33 g/l 68 °F (20 °C)
Melting point	Not applicable, (decomposition)
Boiling point	No information available.
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable. Flammability (solids)
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	< 1 Pa at 77 °F (25 °C) Method: OECD Test Guideline 104
Relative vapor density	No information available.
Density	1.489 g/cm3 at 73 °F (23 °C) Method: OECD Test Guideline 109
Relative density	No information available.

Water solubility	49.2 g/l at 68 °F (20 °C) Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	log Pow: -1.09 (22 °C) OECD Test Guideline 107 Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	158 °F (70 °C)
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	not combustible
Bulk density	ca.400 - 600 kg/m3

SECTION 10. Stability and reactivity

Reactivity
See below

Chemical stability
hygroscopic

Possibility of hazardous reactions
Risk of explosion with:

Acetic anhydride

Violent reactions possible with:

strong oxidizing agents, Bases

Conditions to avoid
no information available

Incompatible materials
no information available

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact, Ingestion

Acute oral toxicity
LD50 Rat: 3,450 - 4,080 mg/kg (ECHA)

Acute inhalation toxicity
LC50 Rat: > 2.03 mg/l; 4 h ; dust/mist
OECD Test Guideline 403
(highest concentration to be prepared)

Acute dermal toxicity
LD50 Rabbit: > 2,000 mg/kg
(ECHA)

Skin irritation
Rabbit
Result: No skin irritation
(ECHA)

Eye irritation
Rabbit
Result: slight irritation
OECD Test Guideline 405

Sensitization
Buehler Test Guinea pig
Result: negative
Method: OECD Test Guideline 406

Genotoxicity in vivo
In vivo micronucleus test
Mouse
Result: negative
Method: OECD Test Guideline 474

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

Mutagenicity (mammal cell test):
MOUSE LYMPHOMA TEST
Result: negative
Method: OECD Test Guideline 476

Mutagenicity (mammal cell test):
Chinese hamster ovary cells
Result: negative
Method: OECD Test Guideline 482

Teratogenicity
Application Route: Oral
Rat
Number of exposures: daily
Method: OECD Test Guideline 414

CMR effects
Teratogenicity / Reproductive toxicity: May damage fertility or the unborn child.

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
After absorption of large quantities:
Vomiting, Nausea, Diarrhea, agitation, spasms, Tiredness, ataxia (impaired locomotor coordination), drop in temperature
Other dangerous properties can not be excluded.
This substance should be handled with particular care.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
flow-through test LC50 Oncorhynchus mykiss (rainbow trout): 79 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 Daphnia magna (Water flea): 133 mg/l; 48 h (ECOTOX Database)

Toxicity to algae
static test EC50 Pseudokirchneriella subcapitata (green algae): 52.4 mg/l; 74.5 h
Analytical monitoring: yes
OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)
semi-static test NOEC Danio rerio (zebra fish): 6.4 mg/l; 34 d

OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
semi-static test NOEC Daphnia magna (Water flea): 34.2 mg/l; 21 d

OECD Test Guideline 211

Persistence and degradability
Biodegradability

The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: -1.09 (22 °C)
OECD Test Guideline 107
Bioaccumulation is not expected.

Mobility in soil
No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

Labeling
Hazard pictograms

Signal Word
Danger

Hazard Statements
H360 May damage fertility or the unborn child.

Precautionary Statements
Prevention
P201 Obtain special instructions before use.
Response
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

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