SAFETY DATA SHEET

BORIC ACID (TECHNICAL)

CAS No.: 10043-35-3

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

BORIC ACID (TECHNICAL)
Boracic Acid; Orthoboric Acid; Hydrogen Borate
CAS: 10043-35-3

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Industrial chemical intermediate, flux for ceramics/glass/enamels, wood preservative, buffering agent, textile and metallurgical applications. For industrial user only.

Uses advised against: Food, drug, pesticide or biocidal product use. All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Repr. 1B	Reproductive toxicity, Category 1B, H360FD

GHS label elements, including precautionary statements

GHS: Danger

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.
P264: Do not breathe dust/fume/gas/mist/vapors/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
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 which do not result in classification

None identified (HNOC).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Boric Acid (H3BO3)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 10043-35-3	Boric acid (H3BO3) – Repr. 1B: H360FD – Danger	≤100%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove to fresh air. 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. Get medical attention immediately if symptoms occur.

By skin contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

By eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

By ingestion/aspiration

Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed	Irritating to eyes and skin. Acute and delayed effects are indicated in sections 2 and 11.
Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	**Suitable:** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. **Unsuitable:** No information available.
Specific hazards arising from the chemical	Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes (oxides of boron).
Special protective actions for fire-fighters	As in any fire, wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. **Additional provisions** NFPA: Health 2, Flammability 0, Instability 1.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	**For non-emergency personnel** Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. **For emergency responders** Wear protective equipment as above. See section 8.
Environmental precautions	Should not be released into the environment. See section 12 for additional ecological information.
Methods and materials for containment and cleaning up	Sweep up and shovel into suitable containers for disposal. Avoid dust formation.
Reference to other sections	See sections 8 and 12.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use
Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest.

B. Technical recommendations for the prevention of fires and explosions
Not applicable – product is non-combustible.

C. Technical recommendations on general occupational hygiene
Handle in accordance with good industrial hygiene and safety practice.

D. Technical recommendations to prevent environmental risks
Should not be released into the environment.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Storage condition	Dry, cool and well-ventilated place, containers tightly closed
Incompatible materials	Strong oxidizing agents, strong bases

B. General conditions for storage
Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid exposure to moisture.

Specific end use(s)	Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Identification	Occupational Exposure Limit Type	Value
Boric acid (H3BO3) CAS: 10043-35-3	ACGIH TLV (TWA)	2 mg/m³
	ACGIH TLV (STEL)	6 mg/m³

Appropriate engineering controls
Ensure that eyewash stations and safety showers are close to the workstation location. Use local exhaust ventilation to control dust.

B. Respiratory protection
Follow OSHA respirator regulations (29 CFR 1910.134) or European Standard EN 149. Use a NIOSH/MSHA or EN 149 approved respirator if exposure limits are exceeded or irritation is experienced.

C. Specific protection for the hands
Wear appropriate protective gloves to prevent skin exposure.

D. Eye and face protection
Wear appropriate protective eyeglasses or chemical safety goggles (OSHA 29 CFR 1910.133 / EN166).

E. Bodily protection
Wear appropriate protective clothing to prevent skin exposure.

F. Additional emergency measures
Emergency eyewash stations and safety showers should be available.

Environmental exposure controls
Should not be released into the environment; do not empty into drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid
Appearance	White solid
Color	White
Odor	Odorless
Odour threshold	No information available
Volatility	
Boiling point at atmospheric pressure	No information available
Vapour pressure at 20°C	2.7 mbar
Evaporation rate	Not applicable
Product Description	
Density / Relative density	No information available
Molecular weight	61.83 g/mol
pH	3.8–4.8 (33 g/l aqueous solution)
Vapour density	Not applicable
Partition coefficient n-octanol/water	No data available
Solubility in water	Soluble
Decomposition temperature	100°C
Melting point/freezing point	169°C (336.2°F)
Flammability	
Flash Point	No information available (non-combustible)
Flammability (solid, gas)	No information available
Autoignition temperature	No information available
Lower / Upper flammability limit	No data available

Other information

Explosive properties	No information available
Oxidising properties	No information available
Corrosive to metals	Not established

10. STABILITY AND REACTIVITY

Reactivity None known, based on information available.

Chemical stability Moisture sensitive; otherwise stable under normal conditions.

Possibility of hazardous reactions None under normal processing. Hazardous polymerization does not occur.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid excess heat	Not applicable	Exposure to moisture

Incompatible materials Strong oxidizing agents, strong bases.

Hazardous decomposition products Oxides of boron.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)
Oral LD50 (rat) 2660 mg/kg.

B. Inhalation (acute effect)
LC50 inhalation: not listed.

C. Contact with skin and eyes (acute effect)
Irritating to eyes and skin. Dermal LD50 (rabbit) > 2000 mg/kg.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)
Reproductive Toxicity Category 1B: may damage fertility, may damage the unborn child. Adverse reproductive effects have occurred in humans; developmental and teratogenic effects have occurred in experimental animals. Not listed as a carcinogen by IARC, NTP, ACGIH, OSHA or Mexico.

E. Sensitizing effects
No information available.

F. Specific target organ toxicity (STOT) – single exposure
None known.

G. Specific target organ toxicity (STOT) – repeated exposure
None known.

H. Aspiration hazard
No information available.

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Boric acid (H3BO3) CAS: 10043-35-3	LD50 oral: 2660 mg/kg	Rat
	LD50 dermal: >2000 mg/kg	Rabbit

12. ECOLOGICAL INFORMATION

Do not empty into drains.

Toxicity

Acute Toxicity	Species	Genus
LC50: 5600 mg/l (96h)	Gambusia affinis	Fish
EC50: 115–153 mg/l (48h)	Daphnia magna	Water flea

Persistence and degradability

Persistence is unlikely.

Bioaccumulative potential

No information available. Log Pow: -0.757.

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not established	Not established	Likely to be mobile in the environment due to its water solubility	

Results of PBT and vPvB assessment

Not established for this grade.

Other adverse effects

The toxicological properties have not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste and must consult local, regional and national hazardous waste regulations to ensure complete and accurate classification.

Refer to national and local regulations on waste management.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID / national road transport rules)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by sea (IMDG)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	None known
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

Transport of dangerous goods by air (IATA/ICAO)

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	None known
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not applicable

15. REGULATORY INFORMATION

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

This product does not contain any substances listed under California Proposition 65. It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

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16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

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

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources

Supplier reference SDS for Boric Acid (CAS 10043-35-3); publicly available GHS classification guidance.

Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists | TLV: Threshold Limit Value | STEL: Short Term Exposure Limit | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | IARC: International Agency for Research on Cancer | NTP: National Toxicology Program

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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