SAFETY DATA SHEET

Bench Basics - Borax Powder - Jewelers Grade

Section 1. Identification

Product Identifier	**Bench Basics - Borax Powder - Jewelers Grade**
Chemical Name	Disodium tetraborate pentahydrate
Other Means of Identification	Borax pentahydrate, Sodium tetraborate pentahydrate, Borax 5 mol
Product Type	Solid (Granular powder)
SKU	BB-BRX

Recommended Use of the Chemical and Restrictions on Use

- **Material Uses:** Jewelry fabrication and casting, flux for soldering, crucible glazing.
- **Restrictions on Use:** Not for use in food, drugs, or pesticides. Keep out of reach of children.

Supplier's Details

- **Company:** Pepetools
- **Brand:** Bench Basics
- **Website:** https://pepetools.com
- **Phone:** +1 405-745-4054

Emergency Telephone Number

- **AMERICAS:** +1 866 928 0789 (Toll Free 24 Hr) or +1 215 207 0061 (For advice on chemical emergencies, spillages, fires, or first aid)

Section 2. Hazard Identification

Classification of the Substance or Mixture

- **ACUTE TOXICITY (oral)** - Category 5
- **SERIOUS EYE DAMAGE/EYE IRRITATION** - Category 2A
- **TOXIC TO REPRODUCTION** - Category 2

GHS Label Elements

- **Signal Word:** Warning
- **Hazard Statements:**
  - May be harmful if swallowed.
  - Causes serious eye irritation.
  - Suspected of damaging fertility or the unborn child.

Precautionary Statements

- **General:** Do not handle until all safety precautions have been read and understood.
- **Prevention:** Wear eye protection.
- **Response:** IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Storage:** Not applicable.
- **Disposal:** Dispose of contents/container in accordance with local regulation.

Other Hazards Which Do Not Result in Classification: None known.

Section 3. Composition/Information on Ingredients

- **Substance/Mixture:** Substance
- **Chemical Name:** Disodium tetraborate pentahydrate

Ingredient Name	%	Identifiers
Disodium tetraborate pentahydrate	>99	CAS: 12179-04-3 EC: 215-540-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First Aid Measures

Description of Necessary First Aid Measures

- **Eye Contact:** Use eye wash fountain or fresh water to cleanse the eye. If irritation persists for more than 30 minutes, seek medical attention.
- **Inhalation:** If symptoms such as nose or throat irritation are observed, remove to fresh air.
- **Skin Contact:** No treatment necessary.
- **Ingestion:** Swallowing small quantities (one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

Most Important Symptoms/Effects, Acute and Delayed

- **Eye Contact:** Causes serious eye irritation. Adverse symptoms may include pain or irritation, watering, and redness.
- **Inhalation:** No known significant effects or critical hazards. Adverse symptoms may include respiratory tract irritation and coughing.
- **Skin Contact:** Symptoms of accidental over-exposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhoea, with delayed effects of skin redness and peeling.
- **Ingestion:** This product is not intended for ingestion. Small amounts (e.g., a teaspoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms. Symptoms of accidental over-exposure to high doses of inorganic borate salts have been

associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhoea, with delayed effects of skin redness and peeling.

Indication of Immediate Medical Attention and Special Treatment Needed

- **Notes to Physician:** Supportive care only is required for adult ingestion of less than a few grams of the product. For ingestion of larger amounts, maintain fluid and electrolyte balance and maintain adequate kidney function. Gastric lavage is only recommended for heavily exposed, symptomatic patients in whom emesis has not emptied the stomach. Hemodialysis should be reserved for patients with massive acute absorption, especially for patients with compromised renal function. Boron analyses of urine or blood are only useful for verifying exposure and are not useful for evaluating severity of poisoning or as a guide in treatment.
- **Specific Treatments:** No specific treatment.
- **Protection of First-Aiders:** No special protective clothing is required.

Section 5. Fire-Fighting Measures

Extinguishing Media

- **Suitable Extinguishing Media:** Use extinguishing media that are appropriate to local circumstances and the surrounding environment.
- **Unsuitable Extinguishing Media:** None known.

Specific Hazards Arising from the Chemical: None. The product is not flammable, combustible, or explosive. **Hazardous Thermal Decomposition Products:** None. **Special Protective Actions for Fire-Fighters:** None. **Special Protective Equipment for Fire-Fighters:** Not applicable. **Remark:** Not explosive.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures

- **For Non-Emergency Personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- **For Emergency Responders:** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

Environmental Precautions: The product is a water-soluble white powder that may cause damage to trees or vegetation by root absorption. Avoid contamination of water bodies during clean up and disposal. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level or meets local water quality standards.

Methods and Materials for Containment and Cleaning Up

- **Small Spill:** Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- **Large Spill:** Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and Storage

Precautions for Safe Handling

- **Protective Measures:** Good housekeeping procedures should be followed to minimize dust generation and accumulation. Avoid spills.
- **Advice on General Occupational Hygiene:** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for Safe Storage, Including Any Incompatibilities: No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimize caking of the product, bags should be handled on a first-in first-out basis. The heavy-duty bag provided resists moisture absorption in humid workshop environments.

- **Storage Temperature:** Ambient temperature
- **Storage Pressure:** Ambient pressure
- **Special Sensitivity:** Moisture (Caking)

Section 8. Exposure Controls/Personal Protection

Control Parameters

- **Occupational Exposure Limits:**
  - Argentina, Peru, Venezuela: 1 mg/m^3 [8-hr TWA]; nil mg/m^3 [15 min STEL]
  - Columbia, Costa Rica, Dominican Republic, Ecuador, Nicaragua, Paraguay, Uruguay: 2 mg/m^3 [8-hr TWA]; 6 mg/m^3 [15 min STEL]
- **Biological Exposure Indices:** No exposure indices known.
- **Recommended Monitoring Procedures:** In the absence of a national OEL, an internally applied Occupational Exposure Limit (OEL) of 1 mg B/m^3 is recommended. To convert product into equivalent boron (B) content, multiply by 0.1484.

Appropriate Engineering Controls: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. **Environmental Exposure Controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual Protection Measures

- **Hygiene Measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

- **Eye/Face Protection:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Eye protection according to ANSI Z.87.1 or other national standards are required.
- **Hand Protection:** Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty.
- **Body Protection:** No special protective clothing is required.
- **Respiratory Protection:** Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification.

Section 9. Physical and Chemical Properties

Property	Value
Physical State	Solid. [Crystalline/Granular]
Color	White.
Odor	Odorless.
pH	9.23 [Conc. (% w/w): 3.5%]
Melting Point	>1000°C (>1832°F)
Boiling Point	Not applicable. [melting point >300°C]
Flash Point	Not applicable. Inorganic substance.
Flammability	Non-flammable. The product is not flammable, combustible or explosive.
Vapor Pressure	Not applicable. Melting point >300°C
Relative Density	2.35 @ 26°C (anhydrous); 1.72 @ 23°C (decahydrate)
Density	1.72 g/cm^3 [23°C (73.4°F)]
Solubility in Water	49.74 g/l (Dissolves easily into water to create a flux paste)
Partition Coefficient: n-octanol/water	-1.53 @ 22°C (decahydrate)
Auto-ignition Temperature	Not applicable (solid). [Not self-heating.]
Decomposition Temperature	Not applicable. Melting point >300°C
Viscosity	Dynamic/Kinematic: Not applicable (not liquid).
Molecular Weight	291.35

Section 10. Stability and Reactivity

- **Reactivity:** No specific test data related to reactivity available for this product or its ingredients.
- **Chemical Stability:** Under ambient temperatures, the product is stable. When heated it loses water, eventually forming anhydrous borax (Na2B4O7). This property is utilized when seasoning and glazing ceramic crucibles to create a glassy coating.
- **Possibility of Hazardous Reactions:** Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.
- **Conditions to Avoid:** Avoid contact with strong reducing agents by storing according to good industrial practice.
- **Incompatible Materials:** Strong reducing agents.
- **Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Information on Toxicological Effects

- **Acute Toxicity:**
  - Rat - Oral - LD50: 3305 mg/kg. Toxic effects: Small amounts swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.
  - Rabbit - Dermal - LD50: >2000 mg/kg. Toxic effects: Poorly absorbed through intact skin.
  - Rat - Inhalation - LC50 Dusts and mists: >2 mg/l [4 days]. Toxic effects: Low acute inhalation toxicity.
- **Skin Corrosion/Irritation:** Non-irritating to the skin.
- **Serious Eye Damage/Eye Irritation:** Causes serious eye irritation. Irritating, fully reversible within 14 days. Many years of occupational exposure indicate no adverse effects on human eye.

- **Respiratory or Skin Sensitization:** Not a skin sensitizer. No data to suggest that disodium tetraborates are respiratory sensitizers.
- **Germ Cell Mutagenicity:** Not mutagenic (based on boric acid).
- **Carcinogenicity:** No evidence of carcinogenicity (based on boric acid).
- **Reproductive Toxicity:** Suspected of damaging fertility or the unborn child. Reprotoxicity studies have been conducted with boric acid and disodium tetraborate. A multigeneration study in the rat gave a NOAEL for fertility in males of 17.5 mg B/kg/day. Developmental effects have been observed in laboratory animals. While boron has been shown to adversely affect male reproduction in laboratory animals, there was no clear evidence of male reproductive effects attributable to boron in studies of highly exposed workers.
- **Aspiration Hazard:** Physical form of solid powder indicates no aspiration hazard potential.

Information on the Likely Routes of Exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because product is poorly absorbed through intact skin. **Product is not intended for ingestion.**

Section 12. Ecological Information

Toxicity Data values are expressed as boron equivalents. To convert this product into equivalent boron (B) content, multiply by 0.1484. Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in high quantities. Care should be taken to minimize the amount of this product released to the environment.

- Fish LC50 (Pimephales promelas): 79.7 mg/l (as Boron), Fresh water - Acute
- Invertebrate LC50 (Ceriodaphnia dubia): 91 mg/l (as Boron), Fresh water - Acute

Persistence and Degradability: Not applicable. Inorganic substance. **Bioaccumulative Potential:** LogPow: -0.757. Potential: Low. **Mobility in Soil:** The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant. **Other Adverse Effects:** No known significant effects or critical hazards.

Section 13. Disposal Considerations

Disposal Methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport Information

Regulation	UN Number	UN Proper Shipping Name	Transport Hazard Class(es)	Packing Group	Environmental Hazards
UN	Not regulated.	-	-	-	No.
IMDG	Not regulated.	-	-	-	No.
IATA	Not regulated.	-	-	-	No.

Special Precautions for User: Not applicable. **Transport in Bulk According to IMO Instruments:** Not applicable.

Section 15. Regulatory Information

International Regulations

- Chemical Weapon Convention List Schedules I, II & III Chemicals: Not listed.
- Montreal Protocol: Not listed.

- Stockholm Convention on Persistent Organic Pollutants: Not listed.
- Rotterdam Convention on Prior Informed Consent (PIC): Not listed.
- UNECE Aarhus Protocol on POPs and Heavy Metals: Not listed.

Inventory List

- United States inventory (TSCA 8b): All components are active or exempted.
- Canada inventory: All components are listed or exempted.
- Australia inventory (AIIC): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.

Section 16. Other Information

History

- **Date of Issue:** Prepared for Bench Basics Borax Powder based on source data dated 2025/10/16.

Procedure Used to Derive the Classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 5	Expert judgment
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment
TOXIC TO REPRODUCTION - Category 2	Expert judgment

Additional Information Keep out of reach of children. Do not ingest. Refer to safety data sheet. Not for use in food, drugs or pesticides.

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