



GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>1</td></tr><tr><td>Fire Hazard</td><td>0</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	1	Fire Hazard	0	Reactivity	0	 See Section 15.
Health Hazard	1							
Fire Hazard	0							
Reactivity	0							

Section 1. Chemical Product and Company Identification

Page Number: 1

Common Name/Trade Name Ammonium Pentaborate tetrahydrate		Catalog Number(s). YY709, A1223
Manufacturer SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		CAS# 12046-04-7; 12007-89-5 [anhydrous]
		RTECS Not available.
		TSCA TSCA 8(b) inventory: No products were found. This product is not listed on the TSCA 8(b) Inventory since it is a hydrate. However, the anhydrous form (CAS no. 12007-89-5) is listed on the TSCA 8(b) Inventory.
Commercial Name(s)	Not available.	CI# Not available.
Synonym	Boric acid, (HB5O8), ammonium salt, tetrahydrate	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000
Chemical Name	Ammonium Boron Oxide tetrahydrate	
Chemical Family	Not available.	
Chemical Formula	(NH ₄) ₂ B ₁₀ O ₁₆ ·4H ₂ O	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Ammonium Pentaborate tetrahydrate	12046-04-7; 12007-89-5 [anhydrous]	5			100

Toxicological Data on Ingredients

Ammonium Pentaborate tetrahydrate:
ORAL (LD50): Acute: 4200 mg/kg [Rat].

Continued on Next Page

Section 3. Hazards Identification

Potential Acute Health Effects Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects **CARCINOGENIC EFFECTS:** Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact Not available.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation Not available.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion Not available.

Section 5. Fire and Explosion Data

Flammability of the Product Non-flammable.

Auto-Ignition Temperature Not applicable.

Flash Points Not applicable.

Flammable Limits Not applicable.

Products of Combustion Not available.

Fire Hazards in Presence of Various Substances Not applicable.

Explosion Hazards in Presence of Various Substances Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions Not applicable.

Special Remarks on Fire Hazards Not available.

Special Remarks on Explosion Hazards Not available.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as reducing agents, alkalis.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 10 (mg/m ³) from ACGIH (TLV) [United States] Total. TWA: 15 (mg/m ³) from OSHA (PEL) [United States] Total. TWA: 5 (mg/m ³) from OSHA (PEL) [United States] Respirable. Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Powdered solid. Crystalline solid. Crystalline powder.)	Odor	Odorless, slight Ammoniacal.
		Taste	Not available.
		Color	White.
Molecular Weight	272.2 g/mole		
pH (1% soln/water)	8.35 [Basic.]		
Boiling Point	Not available.		
Melting Point	110°C (230°F)		
Critical Temperature	Not available.		
Specific Gravity	1.58 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		

Solubility	Soluble in hot water. Partially soluble in cold water. Solubility in Water: 7.03 g/100 ml water at 18 deg. C.; 10.6lb/ 100 lb water at 68 deg. F.; 9.6% at 20 deg. C.; 41.2% at 90 deg. C.
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Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials
Incompatibility with various substances	Reactive with reducing agents, alkalis.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard. Reaction with strong bases such as Sodium Hydroxide (NaOH) will generate Ammonia (NH ₃)
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD ₅₀): 4200 mg/kg [Rat].
Chronic Effects on Humans	Not available.
Other Toxic Effects on Humans	Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects Skin: May cause mild skin irritation in sensitive individuals. Poorly absorbed through intact skin. Eyes: May cause mild eye irritation by mechanical action. Inhalation: May cause upper respiratory tract irritation. Ingestion: Ingestion of large amounts of Ammonium Pentaborate may cause nausea, vomiting, diarrhea, skin rash. Ingestion of a large amounts of borates may affect behavior/brain/Central Nervous System/nervous system (excitement, wakefulness or depression, restlessness, lethargy, weakness, somnolence, headache, dizziness, lightheadedness, drowsiness, nervousness, extreme irritability, delirium, altered reflexes, confusion, alteration in consciousness (described as "clouded"), convulsions, collapse, unconsciousness, coma), cardiovascular system(hypotension, dysrhythmia, arhythmias) Chronic Poential Health Effects Skin: Prolonged or repeated skin contact may cause dermatitis, skin redness drying and peeling. Ingestion: Borates may can accumulate in the body with repeated exposure. They can be found in high levels in the brain and accumulate in the bone. Prolonged or repeated ingestion of large amounts of borates may cause borism. Borism is a sign of systemic uptake of boron-containing compounds and is characterized by dry skin, skin eruptions, eczema, and gastric disturbances such as nausea, hypermotility, vomiting, and anorexia and weight loss and cause symptoms similar to acute ingestion.

Section 12. Ecological Information

Ecotoxicity	Ecotoxicity in water (EC50): 242 mg(B)/l 24 hours [Daphnia (daphnia)]. Ecotoxicity in water (LC50): 74 mg(B)/l 96 hours [Fish (Dab, Limanda limanda)]. 88 mg(B)/l 24 hours [Fish (Trout)]. 65 mg(B)/l 7 hours [Fish (Goldfish)].
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	Ammonium Pentaborate decomposes in the environment to natural borate. Ammonium Pentaborate is soluble in water and is leachable through normal soil.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Identification	Not applicable.
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

**Section 15. Other Regulatory Information and Pictograms**

Federal and State Regulations	No products were found.
California Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.
Other Regulations	For CAS no. 12046-04-7: EINECS: This product is not on the European Inventory of Existing Commercial Chemical Substances. Canada: Not listed on Canadian Domestic Substance List (DSL) or Canadian Non- Domestic Substance List (NDSL). China: Not listed on National Inventory. Japan: Not listed on National Inventory (ENCS). Korea: Not listed on National Inventory (KECI). Philippines: Not listed on National Inventory (PICCS). Australia: Not listed on AICS. For CAS no. 12007-89-5: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 234-521-1). Canada: Listed on Canadian Domestic Substance List (DSL). China: Listed on National Inventory. Japan: Listed on National Inventory (ENCS). Korea: Listed on National Inventory (KECI). Philippines: Not listed on National Inventory (PICCS). Australia: Listed on AICS.
Other Classifications	WHMIS (Canada) Not controlled under WHMIS (Canada).

DSCL (EEC)

R52- Harmful to aquatic organisms

S56- Dispose of this material and its container at hazardous or special waste collection point.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	0
Reactivity	0
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada)
(Pictograms)DSCL (Europe)
(Pictograms)TDG (Canada)
(Pictograms)ADR (Europe)
(Pictograms)

Protective Equipment



Gloves



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent.



Safety glasses.

Section 16. Other Information**MSDS Code** A5210**References** Not available.

Other Special Considerations Major Uses: Intermediate for Boron chemicals; mild antiseptic or bacteriostat in eyewashes, mouthwashes, burn dressings, and diaper rash powders; electrolytic capacitors; corrosion inhibition; in preparation of special welding, soldering, and brazing fluxes for stainless steel or various non-ferrous metals, where alkali borates cannot be used
Note: Changed from the Octahydrate form to the Tetrahydrate form since this is the correct degree of hydration.

Validated by Sonia Owen on 1/16/2009.

Verified by Sonia Owen.

Printed 3/13/2009.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.