

Safety Data Sheet

Zinc Borate

1. IDENTIFICATION OF SUBSTANCE / COMPANY INFORMATION

Chemical Name	Zinc Borate
Synonyms	Boric acid, Zinc salt.
CAS #	1332-07-6
Formula	XZnO. YB ₂ O ₃ . ZH ₂ O
Chemical Family	Inorganic borates
Supplier	SunBoss Chemicals Corp.
Address	8-110 West Beaver Creek Road Richmond Hill, ON L4B 1J9
Telephone	905-707-3433
Fax	905-707-7393

Emergency Information After normal hours call Chemtrec at 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS No.</u>	<u>Concentration %</u>	<u>EC No.</u>
Zinc Borate	1332-07-6	B ₂ O ₃ - 45-48 % ZnO - 37-40 %	215-566-6
	<u>Symbol(s)</u>	<u>Risk Phrase(s)</u>	
	N	R50/53	

3. HEALTH HAZARDS INFORMATION

EMERGENCY OVERVIEW

Signal Word: WARNING!

Avoid Inhalation.

Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Inhalation	Avoid Inhalation. May cause respiratory tract irritation.
Ingestion	May cause slight irritation of the digestive tract if small amount is swallowed.
Skin contact	May cause slight irritation, but Zinc Borate is poorly absorbed through intact skin.

Eye Contact Virtually non-irritating, however, may cause mild eye irritation. Signs/symptoms can include redness, swelling, pain and tearing.

4. EMERGENCY FIRST AID PROCEDURES

Inhalation Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion If swallowed, wash out mouth with water provided the person is conscious. Call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Skin Remove contaminated clothing, wash skin with water, using soap if available. Remove contaminated clothing and launder before reuse. Seek medical attention if irritation persists.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes by separating the eyelids with fingers. Get medical attention if irritation occurs.

Note to Physician Provide symptomatic/supportive care as necessary.

5. FIRE AND EXPLOSION HAZARD MEASURES

Flammability Not determined

Flash Point Not determined

Flash Point Method Not determined

DOT Category UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, PG III, RQ 1001 (Zinc Borate.)

Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Auto Ignition Temperature Not determined

Flammable Limits Not determined

Special Fire Fighting Procedures Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

Special Protective Equipment Fire fighters should wear full protective clothing, including self-contained breathing equipment.

Unusual Fire and Explosion Hazards None

6. ACCIDENTAL RELEASE MEASURES

Procedures Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

Clean up Methods Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe. Scoop up and remove solids. Do NOT spread spilled product with water.

7. HANDLING AND STORAGE

Handling	Wear appropriate protective clothing and gloves. Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Mechanical exhaust required. Close containers of unused product. Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet.
Storage	Store tightly closed containers in a cool, dry, well-ventilated area. Keep away from ignition sources, heat and flame. Store away from strong oxidizing materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	Avoid dust generation. Ensure good ventilation and local exhaustion of the working area as necessary to control any air contaminants to within their exposure limits. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.
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Exposure Limits Zinc Borate

ACGIH TLV
10 mg/m³

OSHA PEL
5mg/m³ (respirable dust)
15 mg/m³ (total dust)
Cal OSHA/PEL
10 mg/m³



Respiratory	Use in well-ventilated area. Use appropriate dust mask and dust filter.
Eyes	Wear safety glasses or goggles to protect against exposure.
Skin	Normal work coveralls. Launder contaminated clothing before reuse.
Gloves	Use gloves as a standard industrial handling procedure. All cleanable impervious glove types are acceptable.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder
Odour	None
Specific Gravity	2.67 @ 20°C
Density	Not determined
Bulk Density	Not determined
Solubility in water	Weak solubility in water

pH	6~7
Other Solubility	Insoluble in organic solvents
Boiling point	Not determined
Melting Point	980°C
Molecular Weight	313.79
Molecular Formula	XZnO. YB ₂ O ₃ . ZH ₂ O

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions of handling, use and transportation.
Conditions to avoid	Avoid contact with strong oxidants and acids, excess heat, dust generation.
Incompatibility	Strong oxidizing agents. Acids.
Hazardous Polymerization	Will not occur
Hazardous Decomposition Products	In case of fire, CO, CO ₂ , PO ₄ and oxides of Al and Zn and black smoke will occur.
Additional Guidelines	None

11. TOXICOLOGICAL INFORMATION

Acute oral LD 50 (mg/kg)	10,000 mg/kg of body weight (Oral Rat)
Acute Dermal LD 50 (mg/kg)	> 10,000 mg/kg (Rabbit)
Acute Inhalation LC50 (mg/l)	< 5 mg/l based on zinc (4:1) borate monohydrate
Principle routes of Exposure	Inhalation.
Ingestion	May cause slight irritation of the digestive tract if small amount is swallowed.
Skin contact	May cause slight irritation, but Zinc Borate is poorly absorbed through intact skin.
Inhalation	Exposure to dust particles may cause irritation of the respiratory tract.
Eye Contact	Virtually non-irritating, however, may cause mild eye irritation. Signs/symptoms can include redness, swelling, pain and tearing.
Aggravated Conditions	None
Carcinogenicity	Not Listed as a carcinogen by IARC, OSHA, NTP or ACGIH.
Primary Irritation Effect	Practically non-irritating.
Genotoxicity	None.

Reproductive/Developmental Toxicity Not determined.

12. ECOLOGICAL INFORMATION

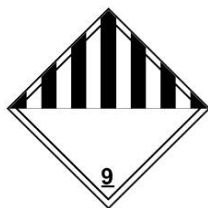
Acute Fish Toxicity	96 Hr – LC ₅₀ (Rainbow Trout) – 2.4 mg/l 96 Hr – LC ₅₀ (Blue Gill) – 335 mg/l
Acute Crustacean Toxicity	48 Hr LC ₅₀ (Daphnia Magna)– 76 mg/l
Octonal/Water Coefficient	No value. Zinc Borate hydrolyzes into H ₂ O to give boric acid and zinc hydroxide.
Chemical Fate Information	No data available.
Other Information	None

13. DISPOSAL CONSIDERATIONS

Waste Disposal	This material is a non-hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.
Contaminated Packaging	If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Dispose of container according to national or local regulations. Do NOT reuse container.

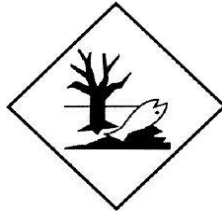
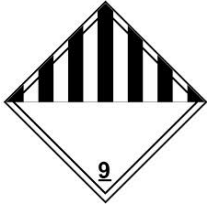
14. TRANSPORT INFORMATION

DOT



UN/ID No.	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc Borate)
Hazard Class	9
Packing Group	III
Reportable Quantity (RQ)	1001
Note	Not listed in DOT Marine Pollutant list Appendix B to 172,101, therefore, not regulated as Marine Pollutant by DOT.

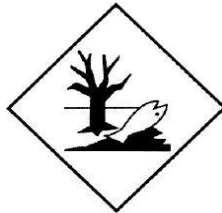
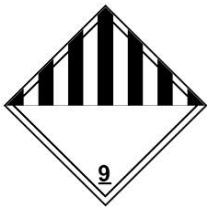
IATA



UN/ID No.
 Proper Shipping Name
 Hazard Class
 Packing Group
 Special Markings
 Note

UN3077
 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc Borate)
 9
 III
 Symbol (fish and tree)
 Subject to ENVIRONMENTALLY HAZARDOUS SUBSTANCE marking requirement (IATA 7.1.6.3)

IMDG



UN/ID No.
 Proper Shipping Name
 Hazard Class
 Packing Group
 Marine Pollutant
 Special Markings

UN3077
 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc Borate)
 9
 III
 No
 Symbol (fish and tree)

TDG (Canada)

Listed as Zinc Borate 9.2 NA 9155, PG III.

15. REGULATORY INFORMATION

LABELLING ACCORDING TO DIR 67/548 EEC

EC Number: 215-566-6
Classification based on: TESTS



DANGEROUS FOR THE ENVIRONMENT (N)

CLASSIFIED ACCORDING TO DIRECTIVE 199/45/EC

Risk Phrases: R50/53 – Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Safety Phrases: S61 – Avoid release to the environment. Refer to Special Instructions/Safety Data Sheet.

FDA Status 21 CFR	Not regulated for use in food contact applications under 21 CRF.
TSCA	Not listed
Canadian DSL	Not listed
EINECS/ELINCS	215-566-6

US Regulations

SARA Section 302	Not Listed
SARA 311/312 Hazard Categories	Immediate, delayed
SARA 313 Chemical	Toxic chemicals release inventory "Zinc compounds"
RCRA Status	Not a RCRA waste

Canadian Regulations

WHMIS Hazard Class



D2A – VERY TOXIC MATERIAL

NPRI

No data available

16. HAZARD RATING SYSTEM

NFPA Rating (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	1
FIRE	0
REACTIVITY	0

HMIS Classification (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	1
FIRE	0
REACTIVITY	0

17. OTHER INFORMATION

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. SunBoss Chemicals Corp. extends no warranty and assumes no responsibility for the accuracy or sufficiency of the content and expressly disclaims all liability for reliance thereon. This material safety data sheet provides guidelines for the safe handling of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. It is the responsibility of the user to comply with all Federal, State and local laws and regulations. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

Abbreviations and Acronyms

- ACGIH: American Conference of Governmental Industrial Hygienists Inc.
- CAS: Chemical Abstracts Service (Division of American Chemical Society)
- DOT: Department of Transportation (USA)

EINECS: European Inventory of Existing Commercial Chemical Substances
HMIS: Hazardous Materials Identification System (USA)
IARC: Internal Agency for Research on Cancer
IATA: International Air Transport Association
IMDG: International Marine Code for Dangerous Goods
LD50: Lethal Dose Medium
LC50: Lethal Concentration Medium
EC50: Effective Concentration Medium
NIOSH: National Institute for Occupational Safety and Health
NFPA: National Fire Protection Association (USA)
NPRI: National Pollutant Release Inventory (Canada)
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration (USA)
PEL: Permissible Exposure Limits
TDG: Transportation of Dangerous Goods (Canada)
TLV: Threshold Limit Value
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Information Systems (Canada)

18. REVISION DATE

Revision number: 2

Date of Issue: September 26, 2014

Changes: Number and format of headings changed; Updates to Sections 1: Identification of Substance - EC information added; 2: Health Hazards Information; 8: Specific Personal Protection Equipment - pictograms added; 14: Transport information - pictograms added; 15: Regulatory information - EC information added; 16: Hazard Rating System - table added; 17: Abbreviations and Acronyms added