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SDS No. P.V. 1.1.1

**Section 1 – Product Identification**

IDENTITY: *Product Name:* **Pavemend SET RETARDANT**

AQUAFIN, INC.  
505 BLUE BALL RD. #160  
ELKTON, MD 21921

Emergency Phone No. (800) 394-1410  
Information Phone No. (410) 392-2300  
[info@aquafin.net](mailto:info@aquafin.net) [www.aquafin.net](http://www.aquafin.net)

Recommended use of the chemical and restriction on use: Refer to the product technical data sheet.  
For industrial and professional users.

**Section 2 – Hazards Identification**

**GHS Classification:**

Reproductive toxicity (Category 2) H361 Suspected of damaging fertility or the unborn child  
Eye irritant (Category 2) H319 Causes serious eye irritation.  
Acute Oral (Category 5) H303 May be harmful if swallowed.

**GHS Label element:**

**Hazard Pictograms**



GHS07 GHS08

Signal Word: WARNING

**Hazard Statements:**

H361 Suspected of damaging fertility or the unborn child  
H319 Causes serious eye irritation.  
H303 May be harmful if swallowed.

**Precautionary Statements:**

**Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P281 Use personal protective equipment as required.

**Response:**

P305+313+338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+313 If exposed or concerned: Get medical advice/ attention.

**Storage:**

P405 Store locked up.

**Disposal:**

P501: Dispose of contents/container to an approved waste disposal site.

**Additional information:**

For Full text of R-S phrases as well as Hazard Class/Statements and Precautionary Statements see Section 16.

**Other Hazards Emergency overview:**

White odorless, powdered substance that is not flammable, combustible, or explosive, and has low acute oral and dermal toxicity.

**Potential health effects:**

Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because it is poorly absorbed through intact skin. Inhalation Occasional mild irritation effects to nose and throat may occur from inhalation at levels higher than 10 mg/m<sup>3</sup>.

**Eye contact:**

A serious eye irritant.

**Skin contact:**

Does not cause irritation to intact skin.

**Ingestion:**

Not intended for ingestion. Has low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

**Reproductive/Developmental:**

Animal ingestion studies in several species, at high doses, cause reproductive and developmental effects. A human study of occupational exposure had no adverse effect on reproduction. A recent epidemiological study and a peer reviewing report of the past epidemiological studies conducted in China didn't show any negative effect of boron on human fertility (10, 11).

**Potential ecological effects:**

Large amounts can be harmful to plants and other species. Therefore releases to the environment should be minimized.

**Signs and symptoms of exposure:**

Symptoms of accidental over-exposure have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling (see Section 11).

**Section 3 – Composition / Information on Ingredients****3.1. Substances:**

The product contains greater than 99.9 percent (%) Retarder Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> · 10H<sub>2</sub>O

Chemical Name	Purity	CAS	ECN	REACH Registration No.	Hazard Statements
Retarder	99.9%	1303-96-4	215-540-4	01-2119490790-32-0002	H361 / H319 / H303

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 not require reporting in this section.

**Section 4 – First Aid Measures**

**After Inhalation:** If symptoms such as nose or throat irritation are observed, remove person to fresh air. If not breathing, give artificial respiration. Seek medical attention.

**After Ingestion:** Immediately seek medical attention. Do not induce vomiting without medical advice. If conscious, drink plenty of water.

**After Skin Contact:** Instantly wash skin with plenty of soap and water for at least 15 minutes. Wash clothing before reuse. Seek medical attention if symptoms persist.

**After Eye Contact:** Rinse opened eye with plenty of running water for at least 15 minutes, lifting upper and lower eyelids occasionally. Consult physician.

### Section 5 – Fire Fighting Measures

**Extinguishing Media:** Use dry chemical fire extinguisher. Do not use water or halogenated compounds.

**Special Fire Fighting Procedures:** As in any fire, wear full protective gear and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode.

**Unusual Fire and Explosion Hazards:** No unusual fire or explosion hazards. Material is itself a flame retardant.

### Section 6 – Accidental Release Measures

**Person-related Safety Precautions:** Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

**Environmental precautions:** Borax decahydrate is a water-soluble white powder that may, at high concentrations cause damage to trees or vegetation by root absorption (see section 12).

**Methods and materials for containment and cleaning up Land spill:** Vacuum, shovel or sweep up borax and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

**Spillage into water:** Where possible, remove any intact containers from the water. 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 (see sections 12, 13 and 15).

**Reference to other sections:** See sections 8 and 13 for further information.

### Section 7 – Handling and Storage

**Handling:** Avoid causing dust. Avoid eye and skin contact. Keep out of reach of children.

**Storage:** Store in a cool, dry enclosed area off the ground in tightly closed containers. Protect against wetness and water. No special measures required against explosion and fires. Store away from foodstuffs.

### Section 8 – Exposure Controls / Personal Protection

**Control parameters:**

*Occupational exposure limits for dust (total and respirable) are treated by OSHA, Cal OSHA and ACGIH as “Particulate Not Otherwise Classified” or “Nuisance Dust”*

Respect regulatory provisions for dust (total and respirable).

ACGIH/TLV 10 mg/m<sup>3</sup>

Cal OSHA/PEL 10 mg/ m<sup>3</sup>  
 OSHA/PEL (total dust) 15 m<sup>3</sup>  
 OSHA/PEL (respirable dust) 5 m<sup>3</sup>

**DNEL values**

Exposure pattern	Type/site of effect	Exposure route	DNEL value
<b>DNELs for workers:</b>			
Acute	Local	Inhalation	22.3 mg/ m <sup>3</sup>
Long-term	Systemic	Inhalation	12.8 mg/ m <sup>3</sup>
Long-term	Systemic	Dermal	42478 mg/day

**DNELs for the general public:**

Acute	Systemic	Oral	1.5 mg/kg bw/day
Acute	Local	Inhalation 22.3 mg/ m <sup>3</sup>	
Long-term	Systemic	Dermal (external)	303.5 mg/kg bw/day
Long-term	Systemic	Dermal (systemic)	1.5 mg/kg bw/day
Long-term	Systemic	Inhalation	6.5 mg/ m <sup>3</sup>
Long-term	Systemic	Oral	1.5 mg/kg bw/day
Long-term	Local	Inhalation	22.3 mg/ m <sup>3</sup>

Source: Chemical Safety Report of disodium tetraborate

**PNEC values**

PNEC add, freshwater, marine water = 1.35 mg B/L  
 PNEC add aqua intermittent = 9.1 mg B/L  
 PNEC add freshwater sediment, marine water sediment = 1.8 mg B/kg sediment dry weight  
 PNEC soil = 5.4 mg B/kg soil dry weight  
 PNEC add, STP = 1.75 mg B/L Source: Chemical Safety Report of Boric Acid

**Exposure controls:**

**Appropriate engineering controls:** Maintain air concentrations below occupational exposure standards. Use local exhaust ventilation to keep airborne concentrations of borax decahydrate dust below permissible exposure levels. Wash hands before breaks and at the end of the workday. Remove and wash soiled clothing.

**Individual protection measures, such as personal protective equipment:**

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Eyes and hand protection:** Handle with gloves. Wear eye protection suitable for job tasks.

**Environmental exposure:** No special requirement.

**Section 9 – Physical and Chemical Properties**

<b>Physical State:</b>	Powder or crystalline solid
<b>Appearance/Color:</b>	White
<b>Odor:</b>	Odorless
<b>Solubility in water:</b>	4.7 % @ 68°F (20°C); 65.6% @ 212°F (100°C)
<b>Partition Coefficient: n-octanol/water:</b>	Log Kow (Pow): 1.53 +/- 0.05 (@ 22 +/- 1°C) pH 7.5
<b>Boiling Point:</b>	2,867°F (1575°C)
<b>Melting Point:</b>	1,365.8°F (741°C) (heated in closed space)
<b>Flash Point:</b>	Not applicable
<b>Flammability:</b>	Not flammable
<b>Auto-ignition Temperature:</b>	not applicable

<b>Decomposition Temperature:</b>	Dehydration begins at 140°F (60°C, complete at 608°F (320°C)
<b>Specific Gravity:</b>	1.71-1.73 gr/cm <sup>3</sup> @ 20°C
<b>pH (in water):</b>	pH @ 20°C 9.3 (0.1% solution) 9.2 (1% solution) 9.3 (4.7% solution)
<b>Bulk density:</b>	62.43 lbs/ft <sup>3</sup> (1.0 ton/m <sup>3</sup> )

## Section 10 – Stability and Reactivity

<b>Chemical Stability:</b>	Retarder is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. When heated it losses water, eventually forming anhydrous borax (Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ).
<b>Conditions to Avoid:</b>	Exposure to moisture and incompatible materials.
<b>Hazardous Decomposition Products:</b>	Boranes, hydrogen, boron oxides
<b>Hazardous Polymerization:</b>	Will not occur.
<b>Incompatibilities:</b>	Avoid contact with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals.

## Section 11 – Toxicological Information

### Information on toxicological effect:

**Acute toxicity:** Low acute oral toxicity; LD50 in rats is 6,000 mg/kg of body weight.

**Skin corrosion / irritation:** Low acute dermal toxicity; LD50 in rabbits is greater than 2,000 mg/kg of body weight. Borax decahydrate is poorly absorbed through intact skin. Non-irritant.

**Serious eye damage/ irritation:** Borax decahydrate is a serious eye irritant.

**Respiratory or skin sensitization:** Borax is not a skin sensitizer.

### Germ cell mutagenicity / carcinogenicity:

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

**Reproductive toxicity:** Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes (2). Studies with chemically related boric acid in rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those which humans would normally be exposed to (3, 4, 5). Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

**STOT-single exposure:** N.A

**STOT-repeated exposure:** N.A

**Aspiration hazard:** Low acute inhalation toxicity; LC50 in rats is greater than 2.0 mg/l (or g/m<sup>3</sup>).

## Section 12 – Ecological Information

**Ecological Information:** The unused product is slight water pollutant. Large quantities may be toxic to fish. Do not allow undiluted product or large quantities to reach into waterways or drains.

## Section 13 – Disposal Considerations

**Waste Disposal Method:** Dispose of in a manner consistent with federal, state and local regulations. Do not dispose together with household garbage. Do not allow product to reach sewage system.

**Unused Residue or Dry Spillage:** Pick up dry material. Possibly reuse depending on amount of contamination. Prevent dust exposure. In case of disposal, harden with water and dispose in accordance to local regulations.

**Slurries:** Allow to harden and dispose of as described above.

**Container disposal:** Completely emptied packaging can be given for recycling.

## Section 14 – Transport Information

**RCRA Hazard Class:** Non-hazardous

**USDOT (Domestic Surface)** Not regulated

**IMDG (Ocean) Hazard Class or Division:** Not regulated

**IATA/ICAO (Air) Hazard Class or Division:** Not regulated

**TDG (Canada):** Not regulated

**UN Number:** Not listed

## Section 15 – Regulatory Information

**Safety, health and environmental regulations/substance specific legislation:**

It should be noted that borates are safe under conditions of normal handling and use, besides, they are essential nutrients to plants, and research shows that they play a beneficial role in human health.

**Chemical inventory listing:**

U.S. EPA TSCA Inventory 1330-96-4

Canadian DSL 1330-96-4 ECN 215-540-4

South Korea 9212-848

Japanese MITI (1)-69

Ensure all national/local regulations are observed.

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Chronic Health Hazard

**Massachusetts Right to Know Components:**

Disodium tetraborate decahydrate CAS-No 1303-96-4 Revision Date 2007-03-01

**Pennsylvania Right to Know Components:**

Disodium tetraborate decahydrate CAS-No 1303-96-4 Revision Date 2007-03-01

**New Jersey Right To Know Components:**

Disodium tetraborate decahydrate CAS-No 1303-96-4 Revision Date 2007-03-01

**California Prop. 65 Components:**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Clean Air Act (Montreal Protocol):**

Borax decahydrate was not manufactured with and does not contain any Class I or Class II ozone depleting substances.

**EU Reach Regulation:**

Disodium tetraborates are listed in the Candidate List of Substances of Very High Concern "SVHC" for eventual inclusion in Annex XIV to REACH Regulation 1907/2006 ("Authorization List") (18.06.2010- ED/30/2010).

Disodium tetraborates are listed in the Annex XVII of REACH Regulation 1907/2006 (EU No.109/2012) and its use in consumer products above specific concentration limits is restricted. Note that this restriction is only specific to consumer products and do not cover its industrial and/or professional applications. Disodium Tetraborates can be used in consumer products below specific concentration limits (which is C  $\geq$  8.5% for Borax decahydrate).

**Section 16 – Other Information****Full text of H-Statements referred to under sections 2 and 3.**

H361 Suspected of damaging fertility or the unborn child  
H319 Causes serious eye irritation.  
H303 May be harmful if swallowed.

**Abbreviations and acronyms:**

USDOT: United States Department of Transportation.  
IMDG: International Maritime Code for Dangerous Goods.  
IATA: International Air Transport Association.  
CAS: Chemical Abstracts Service (Division of the American Chemical Society).  
LC50: Lethal concentration, 50 percent.  
LD50: Lethal dose, 50 percent.

**SDS prepared by:** Aquafin product safety department.

**DISCLAIMER:**

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END OF SDS

(February 18, 2019)