# SAFETY DATA SHEET

Green-Bond™ Additive

**SECTION 1: IDENTIFICATION**

Product identifier used on a label: **Green-Bond™ Additive**
Product code: 5355
Recommended use of the chemical and
restrictions on use: *Surface Finishing, and other manufacturing applications.*
Chemical family: Inorganic acids.
Name, address and phone # of supplier: Aqua Bond Inc.
440 Passmore Ave.
Scarborough, ON, M1V 5J8
(416) 754-7211

**24 Hr. Emergency phone #** **CANUTEC (613) 996-6666**

**SECTION 2: HAZARDS IDENTIFICATION**
**GHS Classifications:**

Acute Oral Toxicity (category 5)
Acute Inhalation Toxicity (category 5)
Skin Irritation (Category 2)
Serious Eye Damage (Category 1)
Corrosive to Metals (Category 1)
**Signal Word**: Danger



**Hazard Statements:**

H290 : May be corrosive to metals.
H303 : May be harmful if swallowed.
H333 : May be harmful if inhaled
H315 : Causes skin irritation.
H318 : Causes serious eye damage.

**Precautionary Statements**:
P280 : Wear protective gloves (rubber/PVC)/protective clothing such as apron, boots and safety glasses with side shields.
P264 : Wash all affected body parts thoroughly after handling.
P273 : Avoid release to the environment.
P234 : Keep only in original packaging.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.
P310 : Immediately call a POISON CENTER/doctor
P302 + P352 : IF ON SKIN: Wash with plenty of soap and water

P332 + P313 : If skin irritation or rash occurs: Get medical advice/attention.

P301 + 312 : IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P304 + P340 : IF INHALED: Remove person to fresh air and keep in position comfortable for breathing.

P391 + P501 : Collect Spillage. Dispose of contents/container in accordance with local/state/federal regulations.

P406 : Store in corrosive resistant Glass, PVC, PP or PE container/in container with a resistant inner liner

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Name:** Etidronic Acid

**EC Number:** 220-552-8

| Ingredient name | CAS Number | Hazard | Concentration % |
|---|---|---|---|
| Dihydrogen monoxide | 7732-18-5 | - | 90 - 95% |
| Etidronic Acid | 2809-21-4 | See Section 2 | 5 - 10% |

**SECTION 4: FIRST AID MEASURES**

**Eyes**: Flush skin with running water for at least fifteen minutes. Remove any contact lenses. Get medical aid/ attention immediately.
**Skin**: Remove contaminated clothing. Wash skin with plenty of running water and soap. Get medical attention/ aid if irritation persists. Contaminated clothing should be washed before use.
**Ingestion**: If the product is swallowed, first rinse mouth. Give large amount of water to drink. Call doctor/ physician/poison center immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. If a person vomits, place him/her in recovery position. Aspiration may cause pulmonary edema and pneumonia.

**Inhalation**: If safe to do so, remove individual from further exposure. Keep warm and at rest. If breathing has ceased, give artificial respiration. Get medical attention/consult a physician.
**Medical conditions likely to be aggravated by exposure**: Pre-existing disorders of liver, kidney. Note to Physician : Treat symptomatically.
**PPE for first responders:** Gloves and safety goggles are highly recommended.

**SECTION 5: FIRE FIGHTING MEASURES**

**Flash Point (°C)**: Not available.
**Flammable Limits**: Not available.
**General Hazard**: Evacuate personnel downwind in-order to avoid inhalation of irritating and/or harmful fumes and smoke.
**Extinguishing Media**: Water spray, alcohol resistant foam, dry chemical powder or carbon dioxide. Appropriate for the surrounding area.
**Hazardous Combustion Products**: Fire may cause evolution of corrosive vapors of phosphorous oxides as well as carbon oxides.
**Fighting Procedures**: Hazardous decomposition and combustion products such as phosphorous and carbon oxides can be formed if product is burning. Cool exposed containers with water spray to prevent overheating.

**Fire Fighting Equipment**: Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (bunker gear) and self-contained breathing apparatus (SCBA) should be used for all fires. Evacuate area and fight fire from safe distance or a protected location. Move fire-exposed containers, if allowable without sacrificing the safety of the firefighters. If possible, firefighters should control run-off water to prevent environmental contamination.

**Sensitivity to Static Discharge**: Not sensitive.
**Sensitivity to Mechanical Impact**: Not sensitive.

**SECTION 6: ACCIDENTAL RELEASE**
**MEASURES Protective Gear for Personnel**
**For Small Spill**: Safety glasses or chemical splash goggles, chemically resistant gloves (rubber), chemically resistant boots, and any appropriate body protection to minimize direct contact to the skin. Wear respiratory protection to avoid inhaling vapors.
**For Large Spill**: Triple gloves (rubber and nitrile over latex), chemical resistant suit, boots, hard hat, full face mask/an air purifying respirator (NIOSH approved). Self contained breathing apparatus must be worn in situations where fumigant gas generation and low oxygen levels are a consequence of contamination from the leak.
**Spill Clean-up Procedures**:
**For Small Spill**: In the event of a small spill, the spill should be contained with an absorbent pad and placed in a properly labeled waste disposal container immediately. Do not use water for clean up. Do not let chemical/waste enter the environment. Dispose as per instructions in section 13.
**For Large Spill**: In the event of a large spill, contain the spill immediately and dispose the spill/waste according to state, federal, and local hazardous waste regulation. Do not let chemical/waste enter the environment.
**Environmental Precaution**: Water spill: use appropriate containment to avoid run off or release to sewer or other waterways. Land spill: use appropriate containment to avoid run off or release to ground. General precaution: remove containers of strong acid, alkali and incompatible materials from the release area.
**Release Notes**: If spill could potentially enter any waterway, including intermittent dry creeks, contact local authorities.

**SECTION 7: HANDLING AND STORAGE**
**Handling**: Use appropriate personal protective equipment as specified in Section 8. Handle in a well-ventilated area. Handle in a manner consistent with good industrial/manufacturing techniques and practices. Wash hands thoroughly with soap and water after use. Remove contaminated clothing and protective equipment before entering eating areas.
**Storage**: Store in a cool, dry well-ventilated area. Keep containers closed when not in use. Keep containers isolated from incompatible materials/conditions such as heat and ignition sources. Protect against physical damage and check regularly for leaks.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**
**Engineering Controls**: Use appropriate engineering controls to minimize exposure to vapors/dust generated via routine use. Maintain adequate ventilation of workplace and storage areas. Personal Protective Equipment : Eyes and face: Wear safety glasses with side shields or face shield when handling this material. Skin: Avoid direct contact with skin. Wear chemically resistant gloves (PVC/rubber), apron, boots or whole chemically resistant bodysuit when handling this product. Respiratory: Avoid breathing vapor or mist. If risk of overexposure, use NIOSH approved respiratory protection equipment. If used, full face-piece replaces the need for face shield and/or chemical goggles. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Work Hygienic Practices: Facilities storing or using this material should be equipped with emergency eyewash, and a safety shower. Good personal hygiene practices should always be followed.

**SECTION 9: CHEMICAL AND PHYSICAL PROPERTIES**
Appearance: Clear Liquid
Odor: Slight caramel odor
Odor threshold: Not available
Color: Colorless to slight yellow
pH: < 2.00 (1% Soln.)
Melting Point: -25 °C
Freezing Point: Not available
Boiling Range: 105 °C
Flash Point: No data available
Ignition Temp. : No data available

Green-Bond™ Additive

Evaporation Rate: < 1 (n-Butyl Acetate = 1)
Lower Explosive Limit: Not explosive
Upper Explosive Limit: Not explosive
Vapor Pressure: 17 mm Hg @ 20 °C
Vapor Density: (Air = 1): 1.46 g/cm3 @ 20°C
Specific Gravity: 1.41 - 1.45 @ 25 °C
Solubility: Soluble in water
Partition Coefficient n-octanol/water: Not available
Auto Ignition Temp. : Not available

**SECTION 10: STABILITY AND REACTIVITY**
**Stability**: The product is stable under recommended storage and handling conditions.
**Hazardous Polymerization**: Polymerization will not occur.
**Hazardous Decomposition Products**: Gives off hydrogen by reaction with metals. Oxides of carbon and oxides of phosphorous formed under decomposition/fire.
**Materials to Avoid**: Corrodes base metals. Reacts with oxidizing substances, alkalies.
**Conditions to Avoid**: Avoid exposure to extreme temperatures, incompatible materials, & combustible materials.

**SECTION 11: TOXICOLOGICAL INFORMATION**
**Acute Oral Toxicity**: $LD_{50}$ Oral - Rat: > 2000 mg/kg
**Acute Inhalation Toxicity**: $LC_{50}$ Inhalation : No data available
**Acute Dermal Toxicity**

$LD_{50}$ Dermal - Rabbit - >10,000 mg/kg

LD50 Dermal - Rat - 7000 mg/kg
**Corrosion/Irritation**
**Skin**: Slightly irritating - Rabbit, Occlusive - 24h (IUCLID)
**Eyes**: Corrosive- Rabbit, 24h (IUCLID)
Remarks: Severe discomfort, copious discharge, corneal ulceration, and destruction of the iris reported in other eye irritation studies of rats.
**Carcinogenicity**: IARC, NTP, OSHA, ACGIH: Not listed
**Sensitization**: No data available
**Mutagenicity**: No data available.
**Reproductive Effects**: No data available.
**Teratogenic Effects**: No data available.
**Routes of Exposure**: Eyes, Skin, Inhalation, Ingestion Potential
**Health Effects**
**Eyes:** Causes serious eye damage.
**Skin**: Can cause irritation to the skin.
**Inhalation**: May be harmful if inhaled. Can cause irritation to the respiratory tract and can induce coughing.
**Ingestion**: May be harmful if swallowed. Can cause slight irritation and discomfort.

**SECTION 12: ECOLOGICAL INFORMATION**
**All work practices must be aimed at eliminating environmental contamination.**
**Biodegradability in Soil/Water**: Not readily biodegradable (T1/2 : 373 days).
**Bioaccumulative Potential**: No data available.
**Terrestrial Ecotoxicity**: This material can be harmful or fatal to plants or animals, especially if large volumes are released into the environments.

**Aquatic Ecotoxicity (Acute) Fish Toxicity**
Rainbow trout (Oncorhynchus mykiss) - LC50 (72h) - 200 mg/l
Rainbow trout (Oncorhynchus mykiss) - NOEC (14d) - 60 mg/l
Bluegill Sunfish (Lepomis macrochirus) - LC50 (96h) - 868 mg/l (OECD 202)
Sheepshead minnow - LC50 (96h) - 2180mg/l

Green-Bond™ Additive

**Aquatic Invertebrates**
Daphnia magna (Big Water Flea) EC50 (48h) - >527 mg/l (OECD 202)
Daphnia magna (Big Water Flea) NOEC (21d) 6.8 mg/l
**Aquatic Plants**
Algae - EC50 (96h) - 3.0 mg/l
Selenastrum capricornutum: NOEC (14d) - 13 mg/l
**Mobility in Soil**
Terrestrial Component
Etidronic acid (anhydrous)
Koc: 653-51600 (acc. to soil type)
Kd: 6.15—182 (acc. to soil-type)
Max. sewage sludge adsorption: >90%/24h
K Neckar-water-sediment test: 2042
**Other Adverse Effects**: Do not allow to penetrate into soil, water bodies, or drains

**SECTION 13: DISPOSAL CONSIDERATIONS**
**Disposal Method**: Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations.
**For Large Spills:** Contain material and call local authorities for emergency assistance.
**Product Disposal**: Dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable local, state and federal laws, regulations and product characteristics at time of disposal.
**Empty Container**: Contaminated container should be labeled and disposed in accordance to local, state and federal laws and regulations.
**General Comments**: Refer to section 6, accidental release measures for additional information.

**SECTION 14: TRANSPORT INFORMATION**
**US DOT** UN: 3265
Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid)
Class: 8
PG:III
Label: Corrosive Sticker

**IMDG** UN3265
Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid)
Class 8
PG: III
Label: Corrosive Sticker

**IATA** UN3265
Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Hydroxyethylidene diphosphonic acid) 8
III Corrosive Sticker

**SECTION 15: REGULATORY INFORMATION**
Canada inventory (DSL): All components are listed on DSL.
CANADIAN WHMIS CLASSIFICATION:
D2(B) - Materials causing other toxic effects; E—Corrosion Material

**U.S. FEDERAL REGULATIONS**
**TSCA**: All components of this product are listed on the TSCA inventory.
**CERCLA**: No components of this product are listed.
**SARA TITLE III (EPCRA) Section 313**: No components of this product are listed.
**SARA TITLE III (EPCRA) Section 311/312**: Immediate (Acute) Health Hazard

**OSHA:** None of the chemicals in this product are considered highly hazardous by OSHA California Proposition 65: No significant risk level

Acute health hazard - Yes
Chronic health hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**SECTION 16: OTHER INFORMATION**

Revision date: September 12, 2018
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labeling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

**Disclaimer**

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.