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|---------------------------------------------------|-------------------------------------------------|
| FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL: | 1-800-654-6911 (OUTSIDE USA: 1-423-780-2970) |
| FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®: | 1-800-424-9300 (OUTSIDE USA: 1-703-527-3887) |
| FOR ALL SDS QUESTIONS & REQUESTS, CALL: | 1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347) |

PRODUCT NAME: **APPLIED BIOCHEMISTS HCL ADVANTAGE**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Supplier
Applied Biochemists
1400 Bluegrass Lakes Parkway ,
Alpharetta, GA, 30004
USA

Telephone: +17705215999
Telefax: +17705215999
Web: www.poolspacare.com

| | |
|-------------------|------------------|
| REVISION DATE: | 08/21/2015 |
| SUPERCEDES: | 05/26/2015 |
| MSDS Number: | 000000024473 |
| SYNONYMS: | |
| CHEMICAL FAMILY: | None |
| DESCRIPTION / USE | None established |
| FORMULA: | None established |

Manufacturer
Advantis Technologies
1200 Bluegrass Lakes Parkway
Alpharetta, GA 30004
United States of America

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

| | | |
|-----------------------------------------------------|---|---------------------------------|
| Corrosive to metals | : | Category 1 |
| Acute toxicity (Inhalation) | : | Category 4 |
| Skin corrosion | : | Category 1B |
| Serious eye damage | : | Category 1 |
| Specific target organ toxicity - single exposure | : | Category 3 (Respiratory system) |

GHS Label element

Hazard pictograms

:



Signal word

:

Danger

Hazard statements

:

H290 May be corrosive to metals.
 H314 Causes severe skin burns and eye damage.
 H318 Causes serious eye damage.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.

Precautionary statements

:

Prevention:

P234 Keep only in original container.
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
 P363 Wash contaminated clothing before reuse.
 P390 Absorb spillage to prevent material damage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>CAS OR CHEMICAL NAME</u> | <u>CAS #</u> | <u>% RANGE</u> |
|-----------------------------|--------------|----------------|
| PHOSPHORIC ACID | 7664-38-2 | 9 - 19 |
| Thickener | 70750-46-8 | 0 - 7 |
| ETIDRONIC ACID | 2809-21-4 | 0 - 9 |
| PHOSPHORIC ACID | 7664-38-2 | >= 10 - < 20 |

SECTION 4. FIRST AID MEASURES

| | |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation: | IF INHALED: Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops. If not breathing, give artificial respiration. Call for medical assistance. |
| Skin Contact: | IF ON SKIN: Immediately flush skin with plenty of water for 15 minutes. If clothing comes in contact with the product, the clothing should be removed immediately and laundered before re-use. Seek medical attention. |
| Eye Contact: | IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention immediately. |
| Ingestion: | IF SWALLOWED: Call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. |

SECTION 5. FIREFIGHTING MEASURES

Flammability Summary (OSHA): The product is not flammable., Not combustible., The substance or mixture is not classified as pyrophoric., Not explosive

Flammable Properties

| | |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire / Explosion Hazards: | Will not burn |
| Extinguishing Media: | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Fire Fighting Instructions: | In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus. |
| Hazardous Combustion Products: | During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release:

Keep people away from and upwind of spill/leak.

Water Release:

This material is soluble in water. If the product contaminates rivers and lakes or drains inform respective authorities.

Land Release:

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not contaminate ponds, waterways or ditches with chemical or used container.

Additional Spill Information :

Prevent further leakage or spillage if safe to do so. Evacuate personnel to safe areas. Use personal protective equipment as required.

SECTION 7. HANDLING AND STORAGE

Handling:

Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor.

Storage:

Store in a cool, dry and well ventilated place. Isolate from incompatible materials. Avoid freezing.

Incompatible Materials for Storage:

Refer to Section 10, "Incompatible Materials."

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

Protective Equipment for Routine Use of Product

Respiratory Protection :

Wear a NIOSH approved respirator if levels above the exposure limits are possible., NIOSH approved full-face air purifying respirator with an N95 filter. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection : Wear impervious gloves, boots and apron to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body.

Eye Protection: Use chemical goggles and a faceshield.

Protective Clothing Type: Impervious clothing

General Protective Measures: Ensure that eyewash stations and safety showers are close to the workstation location.

Components with workplace control parameters

| Components (CAS-No.) | Value | Control parameters | Basis (Update) |
|-----------------------------|-------|---------------------|-----------------|
| PHOSPHORIC ACID (7664-38-2) | TWA | 1 mg/m ³ | ACGIH (02 2014) |
| | STEL | 3 mg/m ³ | ACGIH (02 2014) |
| PHOSPHORIC ACID (7664-38-2) | TWA | 1 mg/m ³ | ACGIH (02 2014) |
| | STEL | 3 mg/m ³ | ACGIH (02 2014) |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Form: No data.

Color: No data.

Odor: No data.

Molecular Weight: None established

pH : < 0.0 - 1.0
()

Boiling Point: 212 °F (100 °C)

Melting point/freezing point: No data

Density: no data available

Bulk Density: ()
no data available

Vapor Pressure: no data available

Vapor Density: > 1

Viscosity: no data available

Solubility in Water: soluble in cold water

Partition coefficient n-octanol/water: No data.

Evaporation Rate: No data

Oxidizing: None established

Volatiles, % by vol.: no data available

| | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VOC Content | This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489). This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450. |
| HAP Content | Not applicable |

SECTION 10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|-------------------------------------------------------------|
| Stability and Reactivity Summary: | Stable under normal conditions. |
| Conditions to Avoid: | Heat, Avoid freezing. |
| Chemical Incompatibility: | Strong oxidizing agents, Strong acids, Strong bases, Metals |
| Hazardous Decomposition Products: | Carbon oxides, Oxides of phosphorus, Hydrogen |
| Decomposition Temperature: | No data |

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

| | | |
|-----------------|--------------------|-----|
| PHOSPHORIC ACID | LD50 = 1,530 mg/kg | Rat |
| ETIDRONIC ACID | LD50 = 1,440 mg/kg | Rat |
| PHOSPHORIC ACID | LD50 = 1,530 mg/kg | Rat |

Component Animal Toxicology

Dermal LD50 value:

| | | |
|-----------------|--------------------|--------|
| PHOSPHORIC ACID | LD50 = 2,740 mg/kg | Rabbit |
| ETIDRONIC ACID | LD50 > 4,764 mg/kg | Rabbit |
| PHOSPHORIC ACID | LD50 = 2,740 mg/kg | Rabbit |

Component Animal Toxicology

Inhalation LC50 value:

| | | | |
|-----------------|-----------------------|------------|-----|
| PHOSPHORIC ACID | Inhalation LC50 1 h > | 0.850 mg/l | Rat |
| ETIDRONIC ACID | No data | | |
| PHOSPHORIC ACID | Inhalation LC50 1 h > | 0.850 mg/l | Rat |

Product Animal Toxicity

| | | |
|-------------------------------|--------------------------------------------------------------------------------|--------|
| <u>Oral LD50 value:</u> | LD50 Believed to be > 5,000 mg/kg | Rat |
| <u>Dermal LD50 value:</u> | LD50 Believed to be > 2,000 mg/kg | Rabbit |
| <u>Inhalation LC50 value:</u> | LC50 1 h Believed to be approximately 5.64 mg/l | Rat |
| Skin Irritation: | Corrosive to skin | |
| Eye Irritation: | Corrosive to eyes. | |
| Skin Sensitization: | This material is not known or reported to be a skin or respiratory sensitizer. | |

| | | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute Toxicity: | Corrosive to eyes and skin | Inhalation of mist or vapor may cause irritation to the mucous membranes of the respiratory tract. |
| Subchronic / Chronic Toxicity: | Not known or reported to cause subchronic or chronic toxicity. | |
| Reproductive and Developmental Toxicity: | This chemical is not known or reported to affect reproductive function or fetal development. | |
| | PHOSPHORIC ACID | This material has been tested and was found not to cause reproductive toxicity in laboratory animals. |
| | ETIDRONIC ACID | This product has been tested and was shown not to produce any adverse effects on reproductive function or fetal development when administered to laboratory animals. |
| | PHOSPHORIC ACID | This material has been tested and was found not to cause reproductive toxicity in laboratory animals. |
| Mutagenicity: | Not known or reported to be mutagenic. | |
| | PHOSPHORIC ACID | This product was determined to be non-mutagenic in the Ames assay. |
| | ETIDRONIC ACID | This chemical has been tested and was shown to be non-mutagenic. |
| | PHOSPHORIC ACID | This product was determined to be non-mutagenic in the Ames assay. |
| Carcinogenicity: | This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. | |
| | PHOSPHORIC ACID | This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA. |
| | ETIDRONIC ACID | This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. Chemicals of similar structure have been shown not to cause cancer in laboratory animals. |
| | PHOSPHORIC ACID | This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA. |

SECTION 12. ECOLOGICAL INFORMATION

Overview: Practically non- toxic to fish and other aquatic organisms.

Ecological Toxicity Values - Product:

- 96 h LC50 Believed to be approximately 600 mg/l (calculated)

Ecological Toxicity Values for: PHOSPHORIC ACID

Mosquito fish - 96 h LC50 138 mg/l

Ecological Toxicity Values for: ETIDRONIC ACID

| | | |
|------------------------------------------------------------|---|-------------------------|
| Bluegill | - | 96 h LC50 = 868 mg/l |
| Rainbow trout (<i>Salmo gairdneri</i>), | - | 96 h LC50 = 368 mg/l |
| Channel Catfish (<i>Ictalurus punctatus rafinesque</i>), | - | 96 h LC50 = 695 mg/l |
| Sheepshead minnow | - | 96 h LC50 = 2,180 mg/l |
| Daphnia magna, | - | 48 h EC50= 527 mg/l |
| Grass shrimp | - | 96 h LC50= 1,770 mg/l |
| Oyster Shell Deposition | - | 96 h EC50= 89 mg/l |
| Mallard duck | - | Oral LD50 > 2,510 mg/kg |
| Bobwhite quail | - | Oral LD50 > 2,510 mg/kg |

Ecological Toxicity Values for: PHOSPHORIC ACID

Mosquito fish - 96 h LC50 138 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

Disposal Methods : As a hazardous liquid waste it must be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION**DOT**

| | | |
|--------------------------|---|----------------------------------------------------------------|
| UN number | : | 1760 |
| Description of the goods | : | Corrosive liquids, n.o.s. (Etidronic acid, phosphoric acid) |
| Class | : | 8 |
| Packing group | : | III |

Labels : 8
 Emergency Response : 154
 Guidebook Number

TDG

UN number : 1760
 Description of the goods : CORROSIVE LIQUID, N.O.S.
 (Etidronic acid, phosphoric acid)
 Class : 8
 Packing group : III
 Labels : 8

IATA

UN number : 1760
 Description of the goods : Corrosive liquid, n.o.s.
 (Etidronic acid, phosphoric acid)
 Class : 8
 Packing group : III
 Labels : 8
 Packing instruction (cargo aircraft) : 856
 Packing instruction (passenger aircraft) : 852
 Packing instruction (passenger aircraft) : Y841

IMDG-CODE

UN number : 1760
 Description of the goods : CORROSIVE LIQUID, N.O.S.
 (Etidronic acid, phosphoric acid)
 Class : 8
 Packing group : III
 Labels : 8
 EmS Number 1 : F-A
 EmS Number 2 : S-B

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act**CERCLA Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|-----------------|-----------|--------------------|-----------------------------|
| phosphoric acid | 7664-38-2 | 5000 | * |

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

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.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

| | | |
|-----------------|-----------|-----------|
| phosphoric acid | 7664-38-2 | 14.1678 % |
|-----------------|-----------|-----------|

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

| | | |
|-----------------|-----------|-----------|
| phosphoric acid | 7664-38-2 | 14.1678 % |
|-----------------|-----------|-----------|

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

| | |
|-----------------|-----------|
| phosphoric acid | 7664-38-2 |
|-----------------|-----------|

Pennsylvania Right To Know

| | |
|-----------------|-----------|
| phosphoric acid | 7664-38-2 |
| Etidronic acid | 2809-21-4 |

New Jersey Right To Know

| | |
|-----------------|-----------|
| phosphoric acid | 7664-38-2 |
| Etidronic acid | 2809-21-4 |

Betaines, 70750-46-8
bis(hydroxyethyl)tallow alkyl

California Prop 65

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

The components of this product are reported in the following inventories:

TSCA : The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .