SAFETY DATA SHEET

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: **QUANTUM RMS**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Supplier
Quantum Biochemical
1400 Bluegrass Lakes Parkway ,
Alpharetta, GA, 30004
USA

Telephone: +17705215999
Telefax: +17705215959
Web: www.poolspacare.com

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

REVISION DATE:	05/26/2015
SUPERCEDES:	07/16/2009
MSDS Number:	000000024466
SYNONYMS:	Stain and Scale Controller
CHEMICAL FAMILY:	None
DESCRIPTION / USE	None established
FORMULA:	None established

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals	:	Category 1
Skin irritation	:	Category 2
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.
H315 Causes skin irritation.
H318 Causes serious eye damage.
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 eye protection/ face protection.
P280 Wear protective gloves.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash 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

CAS OR CHEMICAL NAME	CAS #	% RANGE
ETIDRONIC ACID	2809-21-4	9 - 19

1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	37971-36-1	0 - 7

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.
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 if irritation develops.
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):	Product is not known to be flammable, combustible, pyrophoric or explosive.

Flammable Properties

Fire / Explosion Hazards:	This material is not expected to burn unless all the water is boiled away. The remaining compounds may be ignitable.
Extinguishing Media:	Choose extinguishing media suitable for surrounding materials.
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:	Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release:	Hazardous concentrations in air may be found in local spill area and immediately downwind.Vapors may be suppressed by the use of water fog.
Water Release:	This material is soluble in water.Notify all downstream users of possible contamination.Divert water flow around spill if possible and safe to do so.

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).After removal, flush contaminated area thoroughly with water.Avoid runoff into storm sewers and ditches which lead to waterways.
Additional Spill Information :	Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

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 ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. 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., A NIOSH approved full-face or half-face respirator in combination with chemical goggles., A NIOSH approved air purifying respirator with P100 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 :	Avoid contact with skin. Impervious gloves
Eye Protection:	Use chemical goggles and a faceshield.
Protective Clothing Type:	Impervious
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)
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO- (37971-36-1)	TWA	10 mg/m3	WEEL (2012)

[as PBTC]			

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	None established
pH :	1.0 - 3.0 ()
Boiling Point:	215.1 °F (101.7 °C)
Melting point/freezing point	No data
Density	Not applicable
Bulk Density:	() no data available
Vapor Pressure:	no data available
Vapor Density:	no data available
Viscosity:	no data available
Solubility in Water:	soluble in cold water
Partition coefficient n-octanol/water:	No data.
Evaporation Rate:	no data available
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 SOCMI 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:	Sparks, open flame, other ignition sources, and elevated temperatures., Avoid freezing.
Chemical Incompatibility:	Strong oxidizing agents, Bases, Metals
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide, Oxides of nitrogen, Phosphines may form after all water has been removed.
Decomposition Temperature:	No data

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

ETIDRONIC ACID	LD50	=	1,440 mg/kg	Rat
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	LD50	>	4,000 mg/kg	Rat

Component Animal Toxicology
Dermal LD50 value:

ETIDRONIC ACID	LD50	>	4,764 mg/kg	Rabbit
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	LD50	>	4,000 mg/kg	Rat

Component Animal Toxicology
Inhalation LC50 value:

ETIDRONIC ACID	No data				
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	LC50	4 h	>	1.979 mg/l	Rat

Product Animal Toxicity

Oral LD50 value:	LD50	Believed to be >	9,000 mg/kg	Rat
Dermal LD50 value:	LD50	Believed to be >	4,000 mg/kg	Rabbit
Inhalation LC50 value:	no data available			

Skin Irritation: This material is expected to be moderately irritating.
Eye Irritation: This material is expected to be corrosive.
Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer. The active ingredient in this product tested negative for skin sensitization in laboratory animals.

1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-

Acute Toxicity: This product is corrosive to the eyes, moderately irritating to the skin and upon inhalation, may cause irritation to mucous membranes and respiratory tract.

Subchronic / Chronic Toxicity: High oral exposure of a similar chemical to laboratory rodents has been shown to alter red and white cell count, decrease hemoglobin concentration and decrease the hematocrit value. This effect to blood occurred when they were fed a diet containing 3% HEDP-A. No effect was observed at a dietary concentration of 1%., The hematological effects observed in laboratory studies using rodents would be unlikely to occur in humans because of the high dose required.

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity. A similar structured product has been tested and it did not produce

developmental toxicity or affect reproduction.

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.
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	This chemical has been tested in laboratory animals and there was no evidence of reproductive toxicity, teratogenicity, or developmental toxicity.

Mutagenicity: Not known or reported to be mutagenic. The active ingredient in this product has been tested in a battery of mutagenicity assays and was found to be non-mutagenic under the conditions of the tests.

ETIDRONIC ACID	This chemical has been tested and was shown to be non-mutagenic.
1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-	This material was non-mutagenic in the Ames test.

Carcinogenicity: 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.

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.

SECTION 12. ECOLOGICAL INFORMATION

Overview: Practically non- toxic to fish and other aquatic organisms., Practically non-toxic to wildlife and domestic animals.

Ecological Toxicity Values for: ETIDRONIC ACID

Bluegill	-	96 h LC50 = 868 mg/l
Rainbow trout (Salmo gairdneri),	-	96 h LC50 = 368 mg/l
Channel Catfish (Ictalurus punctatus rafinesque),	-	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: 1,2,4-BUTANETRICARBOXYLIC ACID, 2-PHOSPHONO-

Leuciscus idus (Golden orfe)	-	48 h LC50 > 500 mg/l
Daphnia magna (Water flea)	-	24 h EC50= 265 mg/l

Green algae (Scenedesmus subspicatus)	-	72 h EC50 = 140 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 will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.
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	:	3265
Description of the goods	:	Corrosive liquid, acidic, organic, n.o.s.
	:	(Etidronic acid)
Class	:	8
Packing group	:	III
Labels	:	8
Emergency Response Guidebook Number	:	153

TDG

UN number	:	3265
Description of the goods	:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Etidronic acid)
Class	:	8
Packing group	:	III
Labels	:	8

IATA

UN number	:	3265
Description of the goods	:	Corrosive liquid, acidic, organic, n.o.s. (Etidronic 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	:	3265
Description of the goods	:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Etidronic 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

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 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

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

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Etidronic acid	2809-21-4

New Jersey Right To Know

Etidronic acid	2809-21-4
2-Phosphonobutane-1,2,4-tricarboxylic acid	37971-36-1

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.

: dye Sanoline Blue E-HRL

Inventories

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

SECTION 16. OTHER INFORMATION

SECTIONS REVISED: First formulated version in SAP.
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. .