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: **GLB DUOGUARD**

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Supplier
GLB
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:	09/27/2013
MSDS Number:	000000024528
SYNONYMS:	None
CHEMICAL FAMILY:	None
DESCRIPTION / USE	None established
FORMULA:	None established

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Oxidizing solids	:	Category 2
Corrosive to metals	:	Category 1
Acute toxicity (Oral)	:	Category 4
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 :
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Precautionary statements :

Prevention:
P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P234 Keep only in original container.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
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.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
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
TRICHLORO-S-TRIAZINETRIONE	87-90-1	93 - 99
Aluminum Sulfate	17927-65-0	2 - 8
Copper Sulfate pentahydrate	7758-99-8	1 - 3

SECTION 4. FIRST AID MEASURES

General Advice: Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Inhalation: IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Skin Contact: IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye Contact: IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Ingestion: IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5. FIREFIGHTING MEASURES

Flammability Summary (OSHA): Product is not known to be flammable, combustible or pyrophoric., NFPA Oxidizer Class: Meets the criteria of an NFPA Class 1 Oxidizer

Flammable Properties

Fire / Explosion Hazards:	During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Closed containers may explode (due to the build up of steam pressure) when exposed to extreme heat.
Extinguishing Media:	Water only.
Fire Fighting Instructions:	Use water to cool containers exposed to fire. On small fires, use water spray or fog. On large fires, use heavy deluge or fog streams. Flooding amounts of water may be required before extinguishment can be accomplished. Do not use dry extinguishers containing ammonium compounds.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:	Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air repirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.Compatible materials for response to this material are: neoprene.Protection concerns must also address the following: If this material becomes damp/wet or contaminated in a container, the formation of nitrogen trichloride gas may occur and an explosive condition may exist.
Spill Mitigation Procedures	
Air Release:	Vapors may be suppressed by the use of water fog.
Water Release:	This material is heavier than water.This material is soluble in water.Stop water flow or divert water flow around spill if possible and safe to do so.Begin monitoring for available chlorine and pH immediately.
Land Release:	Do not contaminate spill material with any organic materials, ammonia, ammonium salts or urea. Clean up all spill material with clean, dry dedicated equipment and place in a clean dry container.
Additional Spill Information :	FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: Not Applicable (Per 40 CFR 302.4) Hazardous concentrations in air may be found in local spill area and immediately downwind. If spill material is still dry, do not put water directly on this product as a gas evolution may occur. If material is wet, contact 1-800-654-6911 for proper stabilization procedures. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure.

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 dust, mist, vapor or gas.

Storage:	Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. Avoid creating dusts.
Shelf Life Limitations:	Indefinite. Available chlorine loss can be as little as 0.1% per year at ambient temperatures.
Incompatible Materials for Storage:	Organic materials, Reducing agents, nitrogen containing materials, oxidizers, Acids, Bases, (Incompatible materials for packaging: paper, cardboard)
Do Not Store At temperatures Above:	140 °C

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 air purifying respirator equipped with combination chlorine/P100 cartridges. 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 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.
Protective Clothing Type:	Nitrile, Natural rubber, Neoprene (This includes: gloves, boots, apron, protective suit)
General Protective Measures:	An eye wash and safety shower should be provided in the immediate work area.

Components with workplace control parameters

Components (CAS-No.)	Value	Control parameters	Basis (Update)
Aluminum Sulfate (17927-65-0)	TWA	1 mg/m3	ACGIH (02 2014)

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	232.41 g/mol
pH :	2.4 - 2.7 () 10 g/l (as aqueous solution)

Boiling Point:	Not applicable
Melting point/freezing point	Not applicable
Density	no data available
Bulk Density:	2,100 kg/m3 ()
Vapor Pressure:	no data available
Vapor Density:	Not applicable
Viscosity:	Not applicable
Solubility in Water:	12 g/l 77 °F (25 °C)
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	Not applicable
Oxidizing:	None established
Volatiles, % by vol.:	Not applicable
VOC Content	Not applicable 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

Conditions to Avoid:	Sparks, open flame, other ignition sources, and elevated temperatures., Contact with small amounts of water may result in an exothermic reaction with the liberation of toxic fumes., Damp or slightly wet product (will evolve nitrogen trichloride), May be unstable at temperatures above 225 Deg. C (437 Deg. F)
Chemical Incompatibility:	organic materials, Oils, Grease, Sawdust, Reducing agents, nitrogen-containing compounds, oxidizers, acids, Bases, Dry fire extinguishers containing ammonium compounds
Hazardous Decomposition Products:	Nitrogen trichloride, Chlorine, nitrous oxides, cyanates, Carbon monoxide, Carbon dioxide
Decomposition Temperature:	> 225 °C

SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology
Oral LD50 value:

TRICHLORO-S-TRIAZINETRIONE	LD50	= 490 mg/kg	Rat	
Aluminum Sulfate	LD50	anhydrous substance = 6,207 mg/kg	Mouse	
	LD50	anhydrous substance = 1,930 mg/kg	Rat	
Copper Sulfate	LD50	= 300 mg/kg	Rat	

pentahydrate

Component Animal Toxicology
Dermal LD50 value:

TRICHLORO-S-TRIAZINETRIONE	LD50 > 2,000 mg/kg	Rabbit
Aluminum Sulfate	LD50 anhydrous substance Believed to be > 2,000 mg/kg	Rabbit
Copper Sulfate pentahydrate	LD50 >= 1,000 mg/kg	Rabbit

Component Animal Toxicology
Inhalation LC50 value:

TRICHLORO-S-TRIAZINETRIONE	LC50 4 h (aerosol dust), (Nose Only)	Approximately	0.54 mg/l	Rat
	LC50 1 h (aerosol dust), (Nose Only)	Approximately	2.16 mg/l	Rat

Aluminum Sulfate — No data

Copper Sulfate pentahydrate — no data available

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be > 500 but < 5,000 mg/kg. Rat

Dermal LD50 value: LD50 > 5,000 mg/kg Rabbit

Inhalation LC50 value: This product has been tested for acute inhalation toxicity. However, due to the physical nature of the product, an aerosol dust of desired particle size could not be generated. Therefore, no animals could be exposed and no LC50 could be obtained.

Skin Irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.

Eye Irritation: Corrosive to eyes.

Skin Sensitization: Negative skin sensitizer, guinea pig - Buehler Method

Acute Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Subchronic / Chronic Toxicity: There are no known or reported effects from repeated exposure., Toxicological investigation indicates it does not produce significant effects from chronic exposure.

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

TRICHLORO-S-TRIAZINETRIONE	Not known or reported to cause reproductive or developmental toxicity. A similar product has been tested and it did not produce teratogenic or fetotoxic effects in laboratory animals.

Mutagenicity: Not known or reported to be mutagenic.

TRICHLORO-S-TRIAZINETRIONE	This product was determined to be non-mutagenic in the Ames assay.
Copper Sulfate pentahydrate	Copper sulfate has been tested for mutagenicity, and there is equivocal evidence for its mutagenic potential. It was found to be negative in the Ames assay and in a yeast assay. It was found to be positive in the in vitro Syrian hamster embryo (SA7/SHE) cell transformation assay.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

TRICHLORO-S-TRIAZINETRIONE	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: Highly toxic to fish and other aquatic organisms.

Ecological Toxicity Values - Product:

Rainbow trout (Salmo gairdneri),	-	96 h LC50 0.32 mg/l
Bluegill sunfish	-	96 h LC50 0.30 mg/l
Daphnia magna,	-	48 h LC50 0.21 mg/l
Mallard duck	-	8 d Dietary LC50 > 10,000 ppm
Mallard duck	-	Acute Oral LD50 1,600 mg/kg
Bobwhite quail	-	8 d Dietary LC50 7,422 ppm

Ecological Toxicity Values for: TRICHLORO-S-TRIAZINETRIONE

Rainbow trout (Salmo gairdneri),	-	96 h LC50 0.32 mg/l
Bluegill sunfish	-	96 h LC50 0.30 mg/l
Daphnia magna,	-	48 h LC50 0.21 mg/l
Mallard duck	-	8 d Dietary LC50 > 10,000 ppm
Mallard duck	-	Acute Oral LD50 1,600 mg/kg
Bobwhite quail	-	8 d Dietary LC50 7,422 ppm

Ecological Toxicity Values for: Aluminum Sulfate

Largemouth bass	-	96 h LC50 = 250 mg/l (anhydrous aluminum sulfate)
Mosquito fish	-	96 h LC50 = 235 mg/l (anhydrous aluminum sulfate)

Ecological Toxicity Values for: Copper Sulfate pentahydrate

Bluegill	-	(measured, renewal) 96 h LC50 = 0.892 mg/l
Bluegill	-	(static). 96 h LC50 = 1.3 - 2.8 mg/l
Rainbow trout (Oncorhynchus mykiss)	-	(static). 96 h LC50 = 0.13 mg/l
Blue crab (Callinectes sapidus)	-	(static). 96 h LC50= 28 mg/l
Northern pink shrimp (Penaeus duorarum)	-	(static). 96 h LC50= 16 mg/l

Marsh grass shrimp	-	(static). 96 h LC50= 17 mg/l
Green algae (Selenastrum capricornutum),	-	(static). 5 day EC50 (population growth) = 0.0031 mg/l
Anabaena flos-aquae (freshwater blue-green algae)	-	(static). 5 day EC50 (population growth) = 0.029 mg/l
Skeletonema costatum (diatom)	-	(static). 5 day EC50 (population growth) = 0.25 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 DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.
Disposal Methods :	As a nonhazardous waste, it should be disposed of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number	:	3077
Description of the goods	:	Environmentally hazardous substances, solid, n.o.s.
	:	(Trichloro-s-triazinetrione, Copper Sulfate pentahydrate)
Class	:	9
Packing group	:	III
Labels	:	9
Emergency Response Guidebook Number	:	171

TDG

UN number	:	3077
Description of the goods	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Trichloro-s-triazinetrione, Copper Sulfate pentahydrate)
Class	:	9
Packing group	:	III
Labels	:	9

IATA

UN number	:	3077
Description of the goods	:	Environmentally hazardous substance, solid, n.o.s. (Trichloro-s-triazinetrione, Copper Sulfate pentahydrate)
Class	:	9
Packing group	:	III
Labels	:	9MI
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956
Packing instruction (passenger aircraft)	:	Y956

IMDG-CODE

UN number	:	3077
Description of the goods	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Trichloro-s-triazinetrione, Copper Sulfate pentahydrate)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Number 1	:	F-A
EmS Number 2	:	S-F
Marine pollutant	:	yes

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word	:	DANGER!
Hazard statements	:	Harmful if swallowed. May be fatal if inhaled. Causes skin irritation. Corrosive. Causes irreversible eye damage. This pesticide is toxic to fish.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Copper Sulfate pentahydrate	7758-99-8		645
Copper Sulfate pentahydrate	7758-99-8	10	645

SARA 302

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

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper Sulfate pentahydrate	7758-99-8

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

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

Aluminum Sulfate	17927-65-0	4.9 %
Copper Sulfate pentahydrate	7758-99-8	1.55 %

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

Aluminum Sulfate	17927-65-0	4.9 %
Copper Sulfate pentahydrate	7758-99-8	1.55 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Copper Sulfate pentahydrate	7758-99-8	1.55 %

US State Regulations

Massachusetts Right To Know

trichloroisocyanuric acid	87-90-1
Aluminum Sulfate	17927-65-0

Copper Sulfate pentahydrate	7758-99-8

Pennsylvania Right To Know

trichloroisocyanuric acid	87-90-1
Aluminum Sulfate	17927-65-0
Copper Sulfate pentahydrate	7758-99-8

New Jersey Right To Know

trichloroisocyanuric acid	87-90-1
Aluminum Sulfate	17927-65-0
Copper Sulfate pentahydrate	7758-99-8

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 : This is an EPA registered pesticide.

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: 1
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. .