



MATERIAL SAFETY DATA SHEET

GLB Duoguard

1. Product And Company Identification	
<u>Supplier</u> GLB 1400 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States Telephone Number: (770)521-5999 FAX Number: (770)521-5959 Web Site: www.poolspacare.com	<u>Manufacturer</u> Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204 USA Telephone Number: 209-229-2900 FAX Number: 203-229-3652
<u>Supplier Emergency Contacts & Phone Number</u> CHEMTREC - DAY OR NIGHT: (800) 424-9300 ACEAN - DAY OR NIGHT: (800) 654-6911	<u>Manufacturer Emergency Contacts & Phone Number</u> ACEAN - DAY OR NIGHT: (800) 424-9300
Issue Date: 12/15/2009 Product Name: GLB Duoguard Chemical Name: Trichloro-s-Triazinetrione Chemical Family: Chloroisocyanurates / Swimming pool sanitizer MSDS Number: 430 <u>Synonyms</u> Trichloroisocyanuric Acid, TCCA, Trichlor	

2. Composition/Information On Ingredients			
	Ingredient Name	CAS Number	Percent Of Total Weight
	ALUMINUM SULFATE	17927-65-0	4.5 - 4.9
	COPPER SULFATE PENTAHYDRATE	7758-99-8	1.4 - 1.55
	Trichloro-s-Triazinetrione	87-90-1	90 - 96
Ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200. Materials determined to be health hazards are listed if they comprise 1% or more of the composition. Materials identified as carcinogens are listed if they comprise 0.1% or more of the composition. Information on proprietary materials is available in 29CFR 1910.1200(i)(1).			

EMERGENCY OVERVIEW
Corrosive to eyes and skin, Lung toxin, Oxidizer

3. Hazards Identification
<u>Primary Routes(s) Of Entry</u> Inhalation, skin, eyes, ingestion <u>Eye Hazards</u> CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage. Causes irreversible eye damage. <u>Skin Hazards</u> DRY MATERIAL CAUSES MODERATE SKIN IRRITATION. WET MATERIAL CAUSES SKIN BURNS. Dermal exposure to dry material causes moderate skin irritation characterized by redness and swelling. Dermal exposure

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3. Hazards Identification - Continued

Skin Hazards - Continued

to wet material can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.

Ingestion Hazards

Moderately toxic if swallowed. CAUSES BURNS TO DIGESTIVE TRACT. Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration. Ingestion may cause severe damage to the gastrointestinal tract with the potential to cause perforation.

Inhalation Hazards

This product in the form of solid tablets is not an inhalation hazard. However, if dust is created and inhaled, inhalation of this material in dust or vapor form is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract with the production of lung edema which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage. Toxic by inhalation (dust).

Subchronic (Target Organ Effects)

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

Chronic/Carcinogenicity Effects

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

Inhalation: There are no known or reported effects from chronic exposure except for effects similar to those experienced from acute exposure.

Skin Contact: Effects similar to those from acute exposure. In addition, chronic exposure to wet material may cause effects secondary to tissue destruction.

Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. The acute corrosivity of this product, makes chronic ingestion of significant amounts unlikely.

Sensitization: This material tested negative for skin sensitization in animals.

Chronic Target Organ Toxicity: There are no known or reported target organ effects from chronic exposure. Toxicological investigation indicates it does not produce significant effects from chronic exposure.

Reproductive Effects

Not known or reported to cause reproductive or developmental toxicity.

Conditions Aggravated By Exposure

Asthma, Respiratory and Cardiovascular Disease

No additional health information available.

First Aid (Pictograms)



4. First Aid Measures

Eye

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

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4. First Aid Measures - Continued

Eye - Continued

advice.

Skin

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.

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.

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.

Note To Physician

Probable mucosal damage may contraindicate the use of gastric lavage. 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.

Fire Fighting (Pictograms)



5. Fire Fighting Measures

Flash Point: N/A °F

Autoignition Point: N/A °F

Flammability Class: NOT FLAMMABLE

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

Fire And 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 large amounts of water may be required before extinguishment can be accomplished. Do not use dry extinguishers containing ammonium compounds.

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

6. Accidental Release Measures

Personal Protection for Emergency Situation: 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

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6. Accidental Release Measures - Continued

respirator 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 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.

Handling & Storage (Pictograms)



7. Handling And Storage

Handling Precautions

Open in a well ventilated area. Do not take internally. Avoid contact with skin, eyes and clothing. Wear goggles and rubber gloves. For additional protection of skin, wear long sleeves and long pants. Wash hands after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse. Avoid breathing dust, mist, vapor or gas. If used in a skimmer, make sure skimmer is completely clean and free of residue from other water treatment products before putting this product in a skimmer.

Storage Precautions

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. Do not store at temperatures above 60 DEG C / 140 DEG F. Keep all foreign matter away from this product. Do not allow this product to contact other water treatment products.

Incompatible Materials for Storage: organic materials, reducing agents, nitrogen containing materials, oxidizers, acids, bases (incompatible materials for packaging: paper, cardboard).

Nonrefillable container - household/residential use}

[Keep this product dry in its tightly closed container when not in use. Store in a cool, dry, well-ventilated area. Keep away from heat or open flame. Nonrefillable container. Do not reuse or refill this container. Rinse empty container thoroughly with water to dissolve all material prior to disposal. Offer for recycling if available. Do not contaminate food or feed by storage or disposal or cleaning of equipment. FOR DISPOSAL OF A CONTAMINATED OR DECOMPOSING PRODUCT SEE EMERGENCY HANDLING.]

Nonrefillable container - single-use, non-resealable package}

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7. Handling And Storage - Continued

Storage Precautions - Continued

[Keep this product dry in its tightly closed container. Store in a cool, dry, well-ventilated area. Keep away from heat or open flame. Nonrefillable container. Do not reuse or refill this container. Rinse and discard empty container thoroughly with water to dissolve all material prior to disposal. Offer for recycling if available. Do not contaminate food or feed by storage or disposal or cleaning of equipment. FOR DISPOSAL OF A CONTAMINATED OR DECOMPOSING PRODUCT SEE EMERGENCY HANDLING.]

Refillable container - household/residential use}

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Nonrefillable container - non-household/residential use}

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Work/Hygienic Practices

Use safe chemical handling procedures suitable for the hazards presented by this material.

Shelf Life Limitations: Indefinite. Available chlorine loss can be as little as 0.1% per year at ambient temperatures.

Protective Clothing (Pictograms)



8. Exposure Controls/Personal Protection

Engineering Controls

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.

Eye/Face Protection

Use chemical goggles.

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.

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

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8. Exposure Controls/Personal Protection - Continued

Respiratory Protection - Continued

purifying respirators should not be used in oxygen deficient or IDHL atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Exposure Limit Data:

Chemical Name	CAS#	Name of Limit	Exposure
Trichloro-s-triazinetrione	87-90-1	ARCH-ROEG*	0.5 mg/m3 TWA
Copper Sulfate Pentahydrate	7758-99-8	NIOSH-IDLH	100 mg/m3

*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline

Other/General Protection

An eye wash and safety shower should be provided in the immediate work area.

Protective Clothing Type: Nitrile, Natural rubber, Neoprene (This includes: gloves, boots, apron, protective suit).

9. Physical And Chemical Properties

Appearance

White tablet

Odor

Sharp, chlorine-like, bleach odor

Chemical Type: Mixture

Physical State: Solid

Melting Point: Not applicable °F

Boiling Point: Not applicable °F

Molecular Weight: 232.41

Percent Volatiles: Not applicable

Percent VOCs: Not applicable

Packing Density: 2.1000 g/cc

Vapor Pressure: Not available

Vapor Density: Not applicable

pH Factor: 2.4-2.7 At a Concentration Of 1% solution

Solubility: 1.2% (@ 25 DEG C) in water

Viscosity: Not applicable

Evaporation Rate: Not Applicable

10. Stability And Reactivity

Stability: STABLE below temperature of 225 Deg. C

Hazardous Polymerization: WILL NOT OCCUR

Conditions To Avoid (Stability)

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 and spatter., Damp or slightly wet product (will evolve nitrogen trichloride), May be unstable at temperatures above 225 Deg. C (437 Deg. F). Do not add water to this product. Add this product only to the pool. Can react with other products, including other pool chemicals, to cause fire, explosion or the release of toxic gas.

Incompatible Materials

Organic materials, oils, grease, sawdust, reducing agents, nitrogen-containing compounds, oxidizers, acids, bases, dry fire extinguishers containing ammonium compounds

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10. Stability And Reactivity - Continued

Hazardous Decomposition Products

Nitrogen trichloride, chlorine, nitrous oxides, cyanates, carbon monoxide, carbon dioxide

Conditions To Avoid (Polymerization)

Water on product while in container. Humidity

May be unstable at temperatures above 225 Deg. C (437 Deg. F). Not sensitive to mechanical shock. Not sensitive to static discharge. Product is an oxidizer.

11. Toxicological Information

Eye Effects

Corrosive to Eyes

Skin Effects

Dermal LD50 (component):

Trichloro-s-triazinetrione LD50 > 2,000 mg/kg Rabbit

Copper sulfate pentahydrate LD50 >2,000 mg/kg Rat

Aluminum sulfate LD50 (anhydrous aluminum sulfate) Believed to be >2,000 mg/kg Rabbit

Dermal LD50 (Product):

LD50 > 5,000 mg/kg Rabbit

DRY MATERIAL CAUSES MODERATE SKIN IRRITATION. WET MATERIAL CAUSES SKIN BURNS.

Negative skin sensitizer, guinea pig - Buehler Method

Acute Oral Effects

Oral LD50 (Component):

Trichloro-s-triazinetrione LD50 = 490 mg/kg Rat

Copper sulfate pentahydrate LD50 = 300 mg/kg Rat

Aluminum sulfate LD50 (anhydrous aluminum sulfate) = 6,207 mg/kg Mouse

Aluminum sulfate LD50 (anhydrous aluminum sulfate) = 1,930 mg/kg Rat

Oral LD50 (Product):

LD50 Believed to be >500 but <5,000 mg/kg Rat

Acute Inhalation Effects

Inhalation LC50 (Component):

Trichloro-s-triazinetrione LC50 1 h (aerosol dust), (Nose only) Approximately 2.16 MG/L Rat

Trichloro-s-triazinetrione LC50 4 h (aerosol dust), (Nose only) Approximately 0.54 MG/L Rat

Copper sulfate pentahydrate: No data

Aluminum sulfate: No data

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.

This product is corrosive to all tissues contacted and upon inhalation may cause irritation to the mucous membranes and respiratory tract.

Subchronic (Target Organ Effects)

There are no known or reported effects from repeated exposure. Toxicological investigation indicates it does not produce significant effects from chronic exposure.

Chronic/Carcinogenicity

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

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11. Toxicological Information - Continued

Chronic/Carcinogenicity - Continued

EPA.

Trichloro-s-triazinetrione is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

Teratogenicity (Birth Defects)

See Reproductive Effects

Reproductive Effects

Not known or reported to cause reproductive or developmental toxicity.

Trichloro-s-triazinetrione is 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 (Genetic Effects)

Not known or reported to be mutagenic.

Trichloro-s-triazinetrione was determined to be non-mutagenic in the Ames assay.

Copper sulfate pentahydrate 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.

12. Ecological Information

Ecotoxicological Information

Highly toxic to fish and other aquatic organisms.

Acute Toxicity - Fish And Invertebrates

Trichloro-s-triazinetrione

96 hour-LC50, Fish: 0.32 mg/l (Rainbow trout, *Salmo gairdneri*)

0.30 mg/l (bluegill sunfish)

96 hour-LC50, *Daphnia magna*: 0.21 mg/l

Copper sulfate pentahydrate

96 hour-LC50 (static), Fish: 0.13 mg/l (Rainbow trout, *Oncorhynchus mykiss*)

1.3-2.8 mg/l (bluegill)

96 hour-LC50 (measured, renewal), Fish: 0.892 mg/l (bluegill)

96 hour-LC50 (static), Blue crab (*Callinectes sapidus*): 28 mg/l

96 hour-LC50 (static), Northern Pink Shrimp (*Penaeus duorarum*): 16 mg/l

96 hour-LC50 (static), Marsh grass shrimp: 17 mg/l

5 day EC50 (Static) (population growth): 0.0031mg/l (Green algae, *Selenastrum capricornutum*)

5 day EC50 (Static) (population growth): 0.029 mg/l (*Anabaena flos-aquae*, freshwater blue-green algae)

5 day EC50 (Static) (population growth): 0.25 mg/l (*Skeletonema costatum*, diatom)

Aluminum sulfate (anhydrous aluminum sulfate)

96 hour-LC50, Fish: 250 mg/l (Largemouth bass)

235 mg/l (Mosquito fish)

Acute And Dietary Toxicity - Birds

Acute Oral LD50, Mallard duck: 1600 mg/kg

Dietary LC50 8 Days, Mallard duck: >10,000 ppm

Dietary LC50 8 Days, Bobwhite quail: 7422 ppm

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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 non-hazardous waste, it should be disposed of in accordance with local, state and federal regulations.

Nonrefillable container - household/residential use}

[Keep this product dry in its tightly closed container when not in use. Store in a cool, dry, well-ventilated area. Keep away from heat or open flame. Nonrefillable container. Do not reuse or refill this container. Rinse empty container thoroughly with water to dissolve all material prior to disposal. Offer for recycling if available. Do not contaminate food or feed by storage or disposal or cleaning of equipment. FOR DISPOSAL OF A CONTAMINATED OR DECOMPOSING PRODUCT SEE EMERGENCY HANDLING.]

Nonrefillable container - single-use, non-resealable package}

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Nonrefillable container - non-household/residential use}

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14. Transport Information

Proper Shipping Name

Not Regulated

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14. Transport Information - Continued

Hazard Class

Not assigned

DOT Identification Number

NONE

This product is not regulated as a hazardous material under 49CFR 172.101. Hazardous Substance as defined in 49 CFR 172.101, Appendix A: No Not a listed marine pollutant. Inhalation is not a normal route of absorption relative to transportation. 1) Inhalation toxicity data indicates product to be toxic by inhalation, however, diameter of over 90% of granules well exceed 10 micron limit. Particles cannot be inhaled through lungs.

15. Regulatory Information

U.S. Regulatory Information

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.

FIFRA Listing of Pesticide Chemicals: This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

SARA Hazard Classes

Acute Health Hazard
Fire Hazard

SARA Section 313 Notification

Clean Air Act Toxic ARP Section 112r:
CAA 112R None established
Clean Air Act Socmi:
HON SOC None established
Clean Air Act VOC Section 111:
CAA 111 None established
Clean Air Act Haz. Air Pollutants Section 112:
ZUS_CAAHAP None established
ZUS_CAAHRP None established
CAA AP None established

State Regulations

US Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323:
1990-01-01
1,3,5-Triazine-2,4,6(1H,3H,5H)-Trione, 1,3,5-trichloro-hazardous substance

Copper compounds
environmental hazard, hazardous substance

US New Jersey Department of Environmental Protection - Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]
7989-12-01
Trichloroisocyanuric Acid
hazardous substance

Copper compounds
haardous substance

US The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-Know-Law, The Masschusetts Substance List, 105 CMR 670.000

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15. Regulatory Information - Continued

State Regulations - Continued

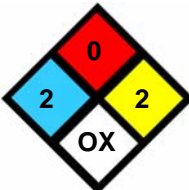
1991-07-01
Trichloro-s-triazinetrione
massachusetts hazardous substance

California Proposition 65: None established

Canadian Regulatory Information

Canada. Canada Hazardous Products Act SOR/88-64
1988-01-20
Concentration by weight: 1 percent by weight
1616
Trichloroisocyanuric acid

Canada. Canada Hazardous Products Act SOR/88-64
1988-01-20
Concentration by weight: 1 percent by weight
431
Copper compounds, N.O.S.

NFPA	HMIS								
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HEALTH	3								
FLAMMABILITY	0								
REACTIVITY	2								
PERSONAL PROTECTION	B								

16. Other Information

Revision/Preparer Information

MSDS Preparer: JHW
This MSDS Superceeds A Previous MSDS Dated: 07/14/2009

Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

GLB