

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 MSDS QUESTIONS & REQUESTS, CALL: 1-800-511-MSDS (OUTSIDE
USA: 1-423-780-2347)

PRODUCT NAME: **QUANTUM FILTER CLEAN**

1. PRODUCT AND COMPANY IDENTIFICATION

Advantis Technologies
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004
United States of America

REVISION DATE: 06/26/2013
SUPERCEDES: 06/01/2009
MSDS Number: 000000012525
SYNONYMS: None
CHEMICAL FAMILY: None
DESCRIPTION / USE: None established
FORMULA: None established

2. HAZARDS IDENTIFICATION

OSHA Hazard
Classification:

Corrosive to eyes, skin and mucous membranes

Routes of Entry: Inhalation, skin, eyes, ingestion
Chemical Interactions: No known or reported interactions.
Medical Conditions Aggravated: Pre-existing eye disease, Pre-existing skin disorders.

Human Threshold Response Data

Odor Threshold Not established for product.

Irritation Threshold Not established for product.

Hazardous Materials Identification System / National Fire Protection Association Classifications

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	0	0	
NFPA	3	0	0	

Immediate (Acute) Health Effects

Inhalation Toxicity:	Not expected to be an inhalation hazard at ambient conditions. Inhalation of mist or vapor may cause irritation and/or burns to the mucous membranes of the respiratory tract.
Skin Toxicity:	Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	Severe irritation and/or burns can occur following exposure. Direct contact may cause impairment of vision and corneal damage. Rinsing of the eye should take place immediately.
Ingestion Toxicity:	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. Not expected to be toxic by ingestion.
Acute Target Organ Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.

Prolonged (Chronic) Health Effects

Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic (Group I carcinogen).
Reproductive and Developmental Toxicity:	Not known or reported to cause reproductive or developmental toxicity.
Inhalation:	Prolonged or repeated exposure may cause more severe irritation. Prolonged or repeated inhalation may cause lung damage. Prolonged or repeated exposure may cause continuous bronchitis. May cause dental erosion.
Skin Contact:	Repeated dermal exposure may cause tissue destruction due to the corrosive nature of this product.
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.
Eye Contact:	Prolonged contact may result in permanent damage. Corneal involvement or visual impairment is expected.

Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

Chronic Target Organ Toxicity: There are no known or reported effects from repeated exposure except those secondary to burns.

Supplemental Health Hazard Information : No additional health information available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
HYDROCHLORIC ACID	7647-01-0	
SULFURIC ACID	7664-93-9	
Citric Acid	77-92-9	
Polyoxyethylene octyl phenyl ether	9002-93-1	
Alcohols, C12-18, ethoxylated and propoxylated	69227-21-0	

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 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.

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

5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA):	Product is not known to be flammable, combustible, pyrophoric or explosive.
<u>Flammable Properties</u>	
Fire / Explosion Hazards:	Material will not ignite or burn. Reacts with most metals to form flammable hydrogen gas.
Extinguishing Media:	Not Applicable. - 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.

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.
<u>Spill Mitigation Procedures</u>	
Air Release:	Vapors may be suppressed by the use of water fog. Keep people away from and upwind of spill/leak.
Water Release:	The product should not be allowed to enter drains, water courses or the soil.
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 :	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.

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.

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 with acid gas cartridge and N-95 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: Neoprene, Butyl rubber, Natural rubber

General Protective Measures: An eye wash and safety shower should be provided in the immediate work area.

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
HYDROCHLORIC ACID	7647-01-0	ACGIH	2 ppm C
HYDROCHLORIC ACID	7647-01-0	OSHA Z1	5 ppm C 7 mg/m3 C
HYDROCHLORIC ACID	7647-01-0	NIOSH-IDLH	50 ppm
SULFURIC ACID	7664-93-9	ACGIH	0.2 mg/m3 TWA Thoracic fraction

SULFURIC ACID	7664-93-9	OSHA Z1	1 mg/m3 TWA
SULFURIC ACID	7664-93-9	NIOSH-IDLH	15 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	liquid
Form	No data.
Color:	No data.
Odor:	No data.
Molecular Weight:	None established
Specific Gravity :	1.08
	20 °C
pH :	0.0 - 2.0
Boiling Point:	100 °C
	212 °F
Freezing Point:	
	not applicable
Melting Point:	
	not applicable
Density:	
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:	Not applicable
Evaporation Rate:	<1
Oxidizing:	None established
Volatiles, % by vol.:	no data available
VOC Content	no data available
HAP Content	Not applicable

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Chemical Incompatibility:	Strong oxidizing agents, Bases, Amines, Metals, alkalis
Hazardous Decomposition Products:	Hydrogen chloride, Oxides of nitrogen, Sulfur oxides, Carbon monoxide, Carbon dioxide
Decomposition Temperature:	No data

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:

HYDROCHLORIC ACID	LD50	900 mg/kg	Rabbit
SULFURIC ACID	LD50	= 2,140 mg/kg	rat
Citric Acid	LD50	= 3,000 mg/kg	rat
Polyoxyethylene octyl phenyl ether	LD50	= 4,500 mg/kg	rat

Component Animal Toxicology

Dermal LD50 value:

HYDROCHLORIC ACID	No data
SULFURIC ACID	LD50 > 2,000 mg/kg Rabbit
Citric Acid	LD50 Believed to be > 2,000 mg/kg rabbit
Polyoxyethylene octyl phenyl ether	no data available

Component Animal Toxicology

Inhalation LC50 value:

HYDROCHLORIC ACID	Inhalation LC50 1 h	3,124 ppm	Rat
SULFURIC ACID	LC50 1 h (aerosol)	= 1.02 MG/L	rat
Citric Acid	no data available		
Polyoxyethylene octyl phenyl ether	no data available		

Product Animal Toxicity

Oral LD50 value: LD50 Believed to be approximately 5,900 mg/kg rat

Dermal LD50 value: LD50 Believed to be > 2,000 mg/kg rabbit

Inhalation LC50 value: no data available

Skin Irritation: This material is expected to be corrosive.

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.

Acute Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.

Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.

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

SULFURIC ACID This product did not cause reproductive or developmental effects in a study with laboratory animals.

Citric Acid This chemical has been tested in laboratory animals and there was no evidence of reproductive toxicity or teratogenicity.

Mutagenicity: Not known or reported to be mutagenic.

HYDROCHLORIC ACID This chemical has been shown to be non-mutagenic based on a battery of assays.

SULFURIC ACID This product has been tested for mutagenicity. Tests revealed both positive and negative results. Based on the weight of evidence, we judge this product NOT to be a mutagenic hazard.

Citric Acid This product was determined to be non-mutagenic in the Ames assay. It was also shown to be negative in the Dominant lethal assay.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic (Group I carcinogen). The following data is available for sulfuric acid:

HYDROCHLORIC ACID The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.

SULFURIC ACID This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA. IARC evaluated several epidemiology studies where workers from a variety of industries had been exposed to a mixture of strong inorganic acid mists. IARC has concluded that there is sufficient evidence that occupational exposure to a mixture of strong inorganic-acid mists containing sulfuric acid is carcinogenic to humans (Group I carcinogen). Because cancer has not been observed in animals when they are exposed only to sulfuric acid mists, exposure to sulfuric acid by itself was not determined to be carcinogenic to humans.

Citric Acid The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic.

12. ECOLOGICAL INFORMATION

Overview: Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems., No data for product. Individual constituents are as follows:

Ecological Toxicity Values for: HYDROCHLORIC ACID

Mosquito fish	-	96 h LC50 = 282 mg/l
Bluegill	-	48 h LC50 = 3.6 mg/l
Fathead minnow (Pimephales promelas),	-	96 h LC50 = 21.9 mg/l
Common shrimp (Crangon crangon)	-	(nominal, renewal). 48 h LC50= 260 mg/l
Daphnia magna,	-	48 h EC50= 0.492 mg/l

Ecological Toxicity Values for: SULFURIC ACID

Mosquito fish	-	(nominal, static). 96 h LC50 42 mg/l
Bluegill sunfish	-	96 h LC50 10.5 mg/l
Common shrimp (Crangon crangon)	-	(nominal, renewal). 48 h LC50 70-80 mg/l
Daphnia magna,	-	24 h EC50 29 mg/l

Ecological Toxicity Values for: Citric Acid

Lepomis macrochirus (Bluegill sunfish)	-	(static). 96 h LC50 = 1,516 mg/l
Daphnia magna (Water flea)	-	72 h EC50 Approximately 120 mg/l

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.

14. TRANSPORT INFORMATION

Land (US DOT): UN1760 CORROSIVE LIQUID, N.O.S. (SULFURIC ACID, HYDROCHLORIC ACID) 8 II

Water (IMDG): UN1760 CORROSIVE LIQUID, N.O.S., (SULFURIC ACID, HYDROCHLORIC ACID) 8 II Marine Pollutant: No

Air (IATA): UN1760 CORROSIVE LIQUID, N.O.S., (SULFURIC ACID, HYDROCHLORIC ACID) 8 II

Emergency Response Guide Number: ERG # 154

Transportation Notes: Hazardous Substance as defined in 49 CFR 172.101, Appendix A: Yes

EMS: F-A, S-B

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

EPA Pesticide Registration Number: None established

FIFRA Listing of Pesticide Chemicals (40 CFR 180): Not registered in the US under FIFRA.

Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):

Health Immediate (Acute) Health Hazard
Physical None

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

ZUS_SAR302 TPQ (threshold planning

quantity)

Reportable Quantity (49 CFR 172.101, Appendix):

ZUS_CERCLA Reportable quantity
 Hydrochloric acid
 Hydrogen chloride
 Value: 5,000lbs
 SULFURIC ACID
 Value: 1,000lbs

ZUS_SAR302 Reportable quantity
 Sulfuric Acid
 Value: 1,000lbs

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components

ZUS_SAR313 De minimis concentration
 Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
 Value: 0.1%
 Hydrochloric acid
 Value: 1%

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

ZUS_CAAHRP None established

CAA AP None established

State Right-to-Know Regulations Status of Ingredients

Pennsylvania:

CAS #	COMPONENT NAME
7647-01-0	HYDROCHLORIC ACID
7664-93-9	SULFURIC ACID

ZUSPA_RTK

Pennsylvania: Hazardous substance list
1990-01-01
HYDROCHLORIC ACID
Environmental hazard, hazardous substance

Pennsylvania: Hazardous substance list
1989-08-11
HYDROCHLORIC ACID
Environmental hazard

Pennsylvania: Hazardous substance list
1990-01-01
SULFURIC ACID
Environmental hazard, hazardous substance

Pennsylvania: Hazardous substance list
1989-08-11
SULFURIC ACID
Environmental hazard

New Jersey:

CAS #	COMPONENT NAME
7647-01-0	HYDROCHLORIC ACID
7664-93-9	SULFURIC ACID

ZUSNJ_RTK

New Jersey Right to Know Hazardous Substance List (RTK-HSL)
2007-03-01
HYDROGEN CHLORIDE MURIATIC ACID HYDROCHLORIC ACID
Special Health Hazard - Corrosive

New Jersey Right to Know Hazardous Substance List (RTK-HSL)
2007-03-01
SULFURIC ACID OIL of VITRIOL DIHYDROGEN SULFATE
Special Health Hazard - Carcinogen, Special Health Hazard - Corrosive, Special Health Hazard - Reactive - Second Degree

Massachusetts:

CAS #	COMPONENT NAME
7647-01-0	HYDROCHLORIC ACID
7664-93-9	SULFURIC ACID

ZUSMA_RTK

Massachusetts Right to Know List of Chemicals and Hazard Classifications
1993-04-24

HYDROGEN CHLORIDE HYDROCHLORIC ACID
Extraordinarily hazardous

Massachusetts Right to Know List of Chemicals and Hazard Classifications
1993-04-24

SULFURIC ACID
Extraordinarily hazardous

California Proposition 65:

CAS #	COMPONENT NAME
7664-93-9	SULFURIC ACID

ZUSCA_P65

California Proposition 65. Safe drinking water and toxic enforcement act.
Strong inorganic acid mists containing sulfuric acid
Carcinogen

WHMIS Hazard Classification:

Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
80
Citric acid

Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
502
Hydrogen chloride

Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
138
Sulfuric acid

Ingredient Disclosure List (WHMIS)
2007-08-24
Threshold limits: 1 Weight percent
831
Polyethylene glycol octylphenol ether

16. OTHER INFORMATION

MSDS REVISION STATUS :

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. .