SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : SULFURIC ACID 93% ELECTROLYTE

1.2 Relevant identified uses of the substance or mixture and uses advised against

no data available

1.3 Details of the supplier of the safety data sheet

Company : Eco Services Operations Corp.
2002 Timberloch Place
Suite 300
The Woodlands, TX 77380
Phone number : (844) 812-1812

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Skin corrosion, Category 1A	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :

Signal Word : Danger

Hazard Statements:

H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

SECTION 4: First aid measures

4.1 Description of first-aid measures

If inhaled	:	Remove victim from exposure and then have him lie down in the recovery position. In case of shortness of breath, give oxygen. If victim has stopped breathing: administer CPR (cardio-pulmonary resuscitation) Immediate medical attention is required.
Skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 30 minutes. Remove all contaminated apparel under the shower. Wash off with plenty of water. Do not attempt to neutralize with chemical agents Immediate medical attention is required.
Eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Immediate medical attention is required.
Ingestion	:	Do NOT induce vomiting. If victim is conscious: Rinse mouth with water. Do not leave the victim unattended. Risk of product entering the lungs on vomiting after ingestion. Lay victim on side. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis Skin contact may aggravate existing skin disease

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: Firefighting measures

Flash point	:	Not applicable
Autoignition temperature	:	no data available
Flammability / Explosive limit	:	no data available

5.1 Extinguishing media

6.4 Reference to other sections

Reference to other sections : 7. HANDLING AND STORAGE

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Do not breathe mist or vapors.
Avoid contact with the skin and the eyes.
When diluting, always add the product to water. Never add water to the product.
Reacts violently with:
bases.

Hygiene measures : Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes or contact with material.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Recommended : Keep tightly closed.
Store in an area:
dry
well-ventilated
diked

Storage stability

Storage temperature : < 104 °F (< 40 °C)

Other data : Corrosion rates increase at elevated temperatures.

7.3 Specific end use(s)

no data available

Wear protective eye glasses for protection against liquid splashes (goggles)

Skin and body protection : Wear as appropriate:
Face-shield
Acid-resistant protective clothing
Acid resistant boots.

Hygiene measures : Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes or contact with material.

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

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	:	Form : oily Physical state: liquid Color: colorless
Odor	:	odorless
Odor Threshold	:	no data available
pH	:	1.0 (1 % (m/v))
Melting point/range	:	-26 °F (-32 °C)
Boiling point/boiling range	:	529 °F (276 °C) (760 mmHg (1,013.25 hPa))
Flash point	:	Not applicable
Evaporation rate (Butylacetate = 1)	:	no data available
Flammability (solid, gas)	:	no data available
Flammability (liquids)	:	no data available
Flammability / Explosive limit	:	no data available
Autoignition temperature	:	no data available

10.5 Incompatible materials

Materials to avoid : Water
Strong reducing agents
Halogenated compounds
Bases
metals
Nitrogen oxides (NOx)

10.6 Hazardous decomposition products

Decomposition products : On combustion or on thermal decomposition (pyrolysis), releases:
Sulfur oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity
Sulfuric acid: LD50 Oral : 2,140 mg/kg - Rat
Gavage
Published data

Acute inhalation toxicity
Sulfuric acid : LC50 - 4 h (aerosol) : 0.375 mg/l - Rat , male and female
Toxicity secondary to corrosive effects at site of contact.
Published data

LC50 - 4 h (aerosol) : 0.85 mg/l - Mouse , male and female
Toxicity secondary to corrosive effects at site of contact.
Published data

(Mist) Humans
Symptoms: Potential health effects, Respiratory disorders, Symptoms may be delayed., Cough, Risk of delayed pulmonary edema.
Effects of breathing high concentration of respirable particles may include:
May cause irritation of respiratory tract.
Lung irritation
Published data

Acute dermal toxicity
Sulfuric acid : Not classified as hazardous for acute toxicity according to GHS
Not applicable
Corrosive
internal evaluation

Acute toxicity (other routes of administration) : no data available

Carcinogenicity

Carcinogenicity

Sulfuric acid : inhalation (mist)

Animal studies
Unpublished reports
Published data
No carcinogenic effects have been observed

Note: IARC Classification: Group 1
mists from strong inorganic acids

IARC and NTP classified "occupational exposure to strong inorganic acid mists containing sulfuric acid" as a known human carcinogen. ACGIH has also classified "sulfuric acid as contained in strong inorganic acid mists" as a suspected human carcinogen. There is still a debate on the studies reviewed by these agencies. We disagree with IARC's conclusion, in that more recent studies have failed to find association between "occupational exposure to strong inorganic acid mist containing sulfuric acid." and laryngeal or lung cancer. In fact, in 2012 IARC revised their classification dropping the "containing sulfuric acid" wording. Lifetime animal studies in hamsters, rats, and guinea pigs were conducted by the EPA and NIEHS and were all negative. However, they were not formally published by the agencies and not considered by IARC or NTP.

Ingredients	CAS-No.	Rating	Basis
Strong inorganic acid mists containing sulfuric acid		Group 1: Carcinogenic to humans	IARC
Strong inorganic acid mists containing sulfuric acid		Suspected human carcinogen	ACGIH
Strong inorganic acid mists containing sulfuric acid		Known to be human carcinogen	NTP
Sulfuric acid	7664-93-9	Suspected human carcinogen	ACGIH

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
OSHA
NTP
IARC

Experience with human exposure

Experience with human exposure : Inhalation

Sulfuric acid : Target Organs: Respiratory Tract

Target Organs: Nose
Symptoms: Burning sensations in the nose and throat.
Breathing difficulties
Dental erosion
Mist
At high concentrations:
Irritating to the respiratory system and mucous membranes.
Published data

Carcinogenicity

Sulfuric acid : Carcinogenicity classification not possible from current data.

Teratogenicity

Sulfuric acid : Did not show teratogenic effects in animal experiments.

Aspiration toxicity

Aspiration toxicity

Sulfuric acid : Not applicable

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

Sulfuric acid : LC50 - 96 h : 16 - 28 mg/l - Lepomis macrochirus (Bluegill sunfish)
static test

Non neutralized product
pH 3.5 - 3.25
Harmful to fish.
Published data

Acute toxicity to daphnia and other aquatic invertebrates.

Sulfuric acid : EC50 - 48 h : > 100 mg/l - Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202
Fresh water
Neutralized product
Not harmful to aquatic invertebrates. (EC50 > 100 mg/L)
Unpublished reports

EC50 - 24 h : 29 mg/l - Daphnia magna (Water flea)
Method: ISO 6341
Non neutralized product
Harmful to aquatic invertebrates.
Published data

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

Sulfuric acid : This substance is not considered to be persistent, bioaccumulating, and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Environment assessment

Sulfuric acid : Not classified as Dangerous for the Environment

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Advice on Disposal : Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code : EPA:
Hazardous Waste – YES

RCRA:
D002 - Corrosive waste – (C)
D003 - Reactive waste – (R)

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

14.1 UN number UN 1830

14.2 Dangerous Good Description UN 1830 SULFURIC ACID, 8, II

14.3 Transport hazard class 8

14.4 Packing group

Packing group II
Label(s) 8
ERG No 137

14.5 Environmental hazards NO
Marine pollutant

14.3 Transport hazard class 8

14.4 Packing group

Packing group	II
Label(s):	8
Packing instruction (cargo aircraft)	855
Max net qty / pkg	30.00 L
Packing instruction (passenger aircraft)	851
Max net qty / pkg	1.00 L

14.5 Environmental hazards NO
Marine pollutant

14.6 Special precautions for user
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

United States TSCA Inventory	:	YES (positive listing) On TSCA Inventory
Canadian Domestic Substances List (DSL)	:	YES (positive listing) All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS)	:	YES (positive listing) On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	:	YES (positive listing) On the inventory, or in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	:	YES (positive listing) On the inventory, or in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	:	YES (positive listing) On the inventory, or in compliance with the inventory

15.2 Federal Regulations

NFPA (National Fire Protection Association) - Classification

Health	:	3 serious
Flammability	:	0 minimal
Instability or Reactivity	:	2 moderate

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	:	3 serious
Flammability	:	0 minimal
Reactivity	:	2 moderate

Further information

Date Prepared	:	01/15/2015
Further information	:	Product classified under the US GHS format.

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA	:	8-hour, time-weighted average
ACGIH	:	American Conference of Governmental Industrial Hygienists
OSHA	:	Occupational Safety and Health Administration
WHMIS	:	Workplace Hazardous Materials Information System
NTP	:	National Toxicology Program
IARC	:	International Agency for Research on Cancer
	:	Solvay Acceptable Exposure Limit
NIOSH	:	National Institute for Occupational Safety and Health
NFPA	:	National Fire Protection Association
HMIS	:	Hazardous Materials Identification System (Paint & Coating)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.