

#### Sulfuric Acid, Spent Material Safety Data Sheet

Arkema Inc.

# 1 PRODUCT AND COMPANY IDENTIFICATION

<b>Basic Chemicals</b> 2000 Market Street Philadelphia, PA 19103		EMERGENCY PHONE NUMBERS: Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887 Medical: Rocky Mountain Poison Control Center (866) 767-5089 (24Hrs)	
Information Telephone Numbers		Phone Number	Available Hrs
Product Information		215-419-7704	8:30 a.m 5:00 p.m. (Eastern)
Product Name Product Synonym(s)	Sulfuric Acid, Spent		
Chemical Family Chemical Formula Chemical Name EPA Reg Num Product Use	Inorganic Acid H2SO4 Sulfuric Acid Solution Pickling of Metal		
2 COMPOSITION / INFORMATION ON INGREDIENTS			

Ingredient Name	CAS RegistryNumber	Typical Wt. %	OSHA
Sulfuric acid	7664-93-9	74%	Y
Water	7732-18-5	26%	Ν

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are all on the TSCA Inventory list.

# 3 HAZARDS IDENTIFICATION

#### **Emergency Overview**

Clear to turbid oily odorless liquid, colorless to slightly yellow. DANGER! CAUSES EYE AND SKIN BURNS. MAY CAUSE BLINDNESS. HARMFUL IF INHALED. CONTAINS SULFURIC ACID: CANCER HAZARD. INHALATION OF MISTS CAN CAUSE CANCER Risk of cancer depends on duration and level of exposure CAN CAUSE LUNG INJURY

# **Potential Health Effects**

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be slightly toxic if swallowed, moderately toxic if inhaled and corrosive to eyes and skin. If swallowed, this material can cause severe burns to the mouth, throat and digestive tract. Vapor and mist can cause erosion of the teeth and is corrosive to the respiratory tract and mucus membranes. Symptoms of injury can include burning in the chest, coughing, pulmonary edema and lung damage. The International Agency for Research on Cancer (IARC) has classified strong inorganic acid mists containing sulfuric acid as a known human



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carcinogen (Group 1). Medical conditions that may be aggravated by exposure to this material include lung disease or limited respiratory capacity.

# 4 FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

IF ON SKIN, immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.

IF SWALLOWED, do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Call a Poison Control Center.

5 FIRE FIGHTING MEASURES	
Fire and Explosive Properties	

Auto-Ignition Temperature	NA	
Flash Point	None	Flash Point Method
Flammable Limits- Upper	NA	
Lower	NA	

# Extinguishing Media

Use water spray or other suitable agent for fires adjacent to non-leaking tanks or other containers of sulfuric acid. Avoid spraying water into containers. If only a small amount of combustibles is present, smother fire with dry chemical.

# **Fire Fighting Instructions**

Do NOT use a solid stream of water. A solid stream of water can spread fire. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and selfcontained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

# **Fire and Explosion Hazards**

Forms hydrogen chloride when contacted with water. Heat or strong acids can form hydrogen gas which is extremely flammable and can form explosive mixtures with air. Material is not combustible, but enhances combustion of other substances.

# 6 ACCIDENTAL RELEASE MEASURES

# In Case of Spill or Leak

Contain spill. Stop leak at source if this can be done safely. Ventilate area. Nonessential personnel should leave the area until cleanup is completed. Pump liquid into DOT-approved drums for disposal. Absorb remaining liquid onto inert absorbent and place in DOT approved drums for disposal. Wash area with water. Keep concentrate and wash water from entering sewers or waterways. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

# 7 HANDLING AND STORAGE



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# 7 HANDLING AND STORAGE

# Handling

Do not get in eyes, on skin or on clothing. Do not breathe mist. Wash thoroughly after handling. Use only with adequate ventilation. Keep container tightly closed. Empty container may contain hazardous residues.

# Storage

Avoid excessive heat. Store out of direct sunlight in a cool, well-ventilated place. Do NOT store near strong bases.

# 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Engineering Controls**

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

### Eye / Face Protection

Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

## **Skin Protection**

Natural rubber Gloves should be worn when handling this material. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash skin thoroughly after handling.

## **Respiratory Protection**

Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved full face respirator with an acid gas cartridge coupled with a P 95 particulate filter (full facepiece recommended). Consult respirator manufacturer if exposure levels are greater than ten times the recommended exposure limits. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

## **Other Protective Equipment**

Rubber boots, Apron and Chemical resistant protective clothing.

#### Airborne Exposure Guidelines for Ingredients

Exposure Limit	5	Value
Sulfuric acid		
ACGIH TWA	-	0.2 mg/m3
OSHA TWA PEL	-	1 mg/m3

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

-WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.



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# 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor
рН
Specific Gravity
Vapor Pressure
Vapor Density
Melting Point
Freezing Point
Boiling Point
Solubility In Water
Molecular Weight

Clear to turbid oily odorless liquid, colorless to slightly yellow. NE 1.666 @ 15.5/15.5 C <0.1 mm Hg @ 20 C/68 F NA NA -44 C (-47 F) -Complete 98.08

# **10 STABILITY AND REACTIVITY**

# Stability

This material is chemically stable under normal and anticipated storage and handling conditions.

# Incompatibility

Strong alkalis, strong oxidizers, nitro compounds, carbides, dienes, alcohols (when heated)-cause explosions. Oxidizing agents, such as chlorates and permanganates, cause fires and possibly explosions

# **Hazardous Decomposition Products**

Sulfur Trioxide gas, which is toxic, corrosive and an oxidizer is released at temperatures of 300 C and higher. Explosive Hydrogen Gas can also accumulate in metal containers.

# 11 TOXICOLOGICAL INFORMATION

# Toxicological Information

Data on this material and/or its components are summarized below.

Single exposure (acute) studies indicate:

Oral - Slightly Toxic to Rats (LD50 2,140 mg/kg)

Inhalation - Moderately Toxic to Rats (4-hr LC50 0.5 mg/l)

Eye Irritation - Corrosive to Rabbits

Skin Irritation - Corrosive to Rabbits Sulfuric Acid

Studies in humans show that this material is irritating to the upper respiratory tract and lungs with coughing, sore throat, chest pain and reduced pulmonary function in asthmatic subjects. No birth defects were noted in the offspring of mice or rabbits exposed by inhalation during pregnancy. The International Agency for Research on Cancer (IARC) has classified strong inorganic acid mists containing sulfuric acid as a known human carcinogen (Group 1). Genetic changes were observed in tests using animal cells, but not in bacteria. Both positive and negative responses have been reported in tests using yeast.

# 12 ECOLOGICAL INFORMATION

# **Ecotoxicological Information**

Data on this material and/or its components are summarized below.

Sulfuric Acid

This material is slightly toxic to mosquito fish and bluegill sunfish (LC50 42-49 mg/l), shrimp (LC50 60-90 mg/l), zebra fish (24-hr LC50 82 mg/l) and Daphnia magna (24-hr EC50 29 mg/l). It is practically non-toxic to flounder (LC50 100-330 mg/l).



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# 12 ECOLOGICAL INFORMATION

### **Chemical Fate Information**

No data are available.

# 13 DISPOSAL CONSIDERATIONS

#### Waste Disposal

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Consult with environmental engineer or professional to determine if neutralization is appropriate and for handling procedures for residual materials. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14 TRANSPORT INFORMATION		
DOT Name	Sulfuric Acid, spent	
DOT Technical Name		
DOT Hazard Class	8	
UN Number	UN1832	
DOT Packing Group	PG II	
RQ		

# 15 REGULATORY INFORMATION

#### Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health Y	Fire	Ν
Delayed (Chronic) Health Y	Reactive	Y
	Sudden Release of Pressure	Ν

The components of this product are all on the TSCA Inventory list.

# Ingredient Related Regulatory Information:SARA Reportable QuantitiesCERCLA RQSARA TPQSulfuric acid1000 LBS1000 LBSWaterNE

#### SARA Title III, Section 313

This product does contain chemical(s) which are defined as toxic chemicals under and subject to the reporting requirements of, Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. See Section 2

Sulfuric acid

# SARA Title III, Section 302

This product does contain chemical(s), as indicated below, currently on the Extremly Hazardous Substance List, Section 302, SARA Title III. See Section 2 for further details regarding concentrations and registry numbers.

Sulfuric acid

#### **DEA - precursor element**

This product does contain the following chemical(s), as indicated below, currrently on the DEA Final Precursors and Essential Chemicals Listed Components list.



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## **DEA - precursor element**

This product does contain the following chemical(s), as indicated below, currrently on the DEA Final Precursors and Essential Chemicals Listed Components list.

Sulfuric acid

### California Prop 65 - Carcinogen

This product does contain the following chemical(s), as indicated below, currently on the California list of Known Carcinogens. Sulfuric acid

### Massachusetts Right to Know

This product does contain the following chemicals(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

Sulfuric acid

### New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List. Sulfuric acid

### Pennsylvania Environmental Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Environmental Hazard List. Sulfuric acid

#### Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List. Sulfuric acid

# **16 OTHER INFORMATION**

### **Revision Information**

Revision Date11 OCT 2004Supercedes Revision Dated02-MAR-2004

**Revision Number 5** 

# Revision Summary

ATOFINA Chemicals, Inc. has changed its name to Arkema Inc.

# Key

NE= Not Established NA= Not Applicable (R) = Registered Trademark

# Miscellaneous

Incompatibility information continues:

Avoid contact with alkalies, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols and aqueous acids cause strong exothermic reactions (large amounts of heat is released). Carbonates, Cyanides, Sulfides, Sulfites and metals such as Copper yield toxic gases on contact with Sulfuric acid.

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