



# ELECTRO-CHEMICAL DEVICES

Liquid Analytical Instrumentation for Process Control

*Bringing Simplicity  
to a Solution*

## Material Safety Data Sheet

Acidic Persulfate solution, 2% W/V in sulfuric acid

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### 1. Product Identification

**Synonyms:** CA-6 Analyzer TP Reagent #1

**CAS No.:** Not applicable to mixtures.

**Molecular Weight:** Not applicable to mixtures.

**Chemical Formula:** Not applicable to mixtures.

**Product Codes:** ECD P/N 2010021-1

**Manufacture By:** Electro-Chemical Devices, Inc.  
1681 Kettering  
Irvine, CA 92614

**Phone:** (800) 729-1333

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### 2. Hazards Identification

#### Emergency Overview

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**Signal word:** Caution!

May cause eye and skin irritation May cause digestive tract irritation.



**HMIS rating:**

**Potential Health Effects**

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**Eye:** May cause moderate eye irritation



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<b>Skin:</b>	May cause moderate skin irritation
<b>Ingestion:</b>	May cause irritation of the digestive tract
<b>Inhalation:</b>	May cause respiratory tract irritation
<b>Chronic Exposure:</b>	Prolonged or repeated skin contact may cause dermatitis. Sulfuric acid - repeated exposure to mist may cause chronic tracheobronchitis, erosion and discoloration of teeth. May cause conjunctivitis and lacrimation

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### 3. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
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Sulfuric acid	7664-93-9	2%	Yes
Sodium Persulfate	7775-27-1	2%	Yes
Water	7732-18-5	to 100%	No

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### 4. First Aid Measures

<b>Eyes:</b>	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. Cover burns with loose sterile non-medicated bandages.
<b>Skin:</b>	Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage (secure, not tight).
<b>Ingestion:</b>	Do NOT induce vomiting. Get medical aid at once. Give conscious victim large quantities of water to dilute acid. Give oxygen if respiration is depressed.
<b>Inhalation:</b>	Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.



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## 5. Fire Fighting Measures

<b>General Information:</b>	Negligible fire and explosion hazard when exposed to heat or flame. Move container if possible, cool with fog or spray. Do not scatter contents with excess water.
<b>Extinguishing Media:</b>	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
<b>Auto ignition Temperature:</b>	No information found.
<b>Flash Point:</b>	No information found.
<b>NFPA Rating:</b>	CAS# 7732-18-5: Not published.  CAS# 7775-27-1: Not published.  CAS# 7664-93-9: Not published.

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## 6. Accidental Release Measures

<b>General Information:</b>	Use proper personal protective equipment as indicated in Section 8.
<b>Spills/Leaks:</b>	Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

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## 7. Handling and Storage

<b>Handling:</b>	Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use with adequate ventilation.
<b>Storage:</b>	Store in labeled non-reactive containers (glass, plastic) protected from heat and incompatible substances.

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## 8. Exposure Controls/Personal Protection

**Engineering Controls:** Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

### Exposure Limits

### Chemical Name:

**ACGIH** **Water**, None of the components are on this list.



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**Sodium Persulfate, TWA 5 mg**

**Sulfuric acid 1 mg/m<sup>3</sup> TWA; 3 mg / m<sup>3</sup> STEL**

## NIOSH

**Water,** None of the components are on this list.

**Sodium Persulfate,** None of the components are on this list.

**Sulfuric acid 1 mg/m<sup>3</sup> TWA**

## OSHA

**Water,** None of the components are on this list.

**Sodium Persulfate,** None of the components are on this list.

**Sulfuric acid 1 mg/m<sup>3</sup> TWA**

## OSHA Vacated PELs

Sulfuric acid: 1 mg/m<sup>3</sup> TWA

## Personal Protective Equipment

**Eyes:** Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

**Skin:** Wear neoprene, natural Nitrile rubber, or PVC gloves.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Sulfuric acid-- 50 mg/M<sup>3</sup> - gas mask with acid gas canister and high efficiency particulate filter. Self contained breathing apparatus with full face piece. 100 mg/M<sup>3</sup> - Type C supplied-air respirator with full face piece, helmet or hood operated in continuous-flow mode.

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## 9. Physical and Chemical Properties

### Appearance:

Clear, colorless liquid

### Odor:

Odorless.

### Solubility:

Complete (100%)

### Specific Gravity:

1.01

### pH:

Acidic

### % Volatiles by volume @ 21C (70F):

ca. >98% water



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**Boiling Point:**

>100°C

**Melting Point:**

< 0°C

**Vapor Density (Air=1):**

Not applicable.

**Vapor Pressure (mm Hg):**

Not applicable.

**Evaporation Rate (BuAc=1):**

> 1

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## 10. Stability and Reactivity

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Incompatible materials.

**Incompatibilities with Other Materials**

Metals, strong oxidizing agents, alkalis.

**Hazardous Decomposition Products**

Oxides of nitrogen, oxides of sulfur, ammonia.

**Hazardous Polymerization**

Has not been reported

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## 11. Toxicological Information

**RTECS:**

CAS# 7732-18-5: ZC0110000.

CAS# 7783-85-9: BR6500000.

CAS# 7664-93-9: WS5600000.

**LD50/LC50:**

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.



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CAS# 7775-27-1:

LD50 (Intra-peritoneal-Mouse) 226 mg/kg

CAS# 7664-93-9:

Inhalation, mouse: LC50 =320 mg/m<sup>3</sup>/2H

Inhalation, rat: LC50 =510 mg/m<sup>3</sup>/2H

Oral, rat: LD50 = 2140 mg/kg.

## **Carcinogenicity:**

**CAS# 7732-18-5:**

Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop65.

**CAS# 7775-27-1:**

Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

**CAS# 7664-93-9**

ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)

**California:** Not listed.

**NIOSH:** Not listed.

**NTP:** Not listed.

**OSHA:** Select carcinogen

**IARC:** Group 1 carcinogen

## **Epidemiology:**

Sulfuric acid is a severe eye, skin, and mucous membrane irritant

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## **12. Ecological Information**

### **Environmental Fate:**

No information found.

### **Environmental Toxicity:**

No information found.



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## 13. Disposal Considerations

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

### US DOT

#### Shipping Name:

Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid)

**Hazard Class:** 8

**UN Number:** UN3264

**Packing Group:** PGII

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## 15. Regulatory Information

### US Federal

#### TSCA:

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 7775-27-1 is not on the TSCA Inventory, however, its anhydrous form is on the inventory and so this hydrate is exempt from TSCA Inventory requirements (40CFR270.3(u)(2)).

CAS# 7664-93-9 is listed on the TSCA Inventory.

#### SARA Reportable Quantities (RQ):

CAS# 7664-93-9: final RQ = 1000 pounds (454 kg)

#### CERCLA/SARA Section 313:

This material contains Sulfuric acid (CAS# 7664-93-9, 1.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**OSHA - Highly Hazardous:** None of the components are on this list..

### US State



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## **State Right to Know:**

Sulfuric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

## **California Regulations:**

## **European/International Regulations**

## **Canadian DSL/NDSL:**

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7664-93-9 is listed on Canada's DSL List.

## **Canada Ingredient Disclosure List:**

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7775-27-1 is not listed on Canada's Ingredient Disclosure List.

CAS# 7664-93-9 is listed on Canada's Ingredient Disclosure List

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## **16. Other Information**

**NFPA Ratings:** Health: **1** Flammability: **0** Reactivity: **0**

**Label Hazard Warning:** As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

## **Label Precautions:**

None.

## **Label First Aid:**

Not applicable.

## **Product Use:**

Laboratory Reagent.

## **Revision Information:**

MSDS-2010021-1rev.A, March 2012