

# MATERIAL SAFETY DATA SHEET

Perchloric Acid Titrant

## SECTION 1 . Product and Company Identification

Product Name and Synonym: Perchloric Acid Titrant  
Product Code: 6610  
Material Uses:  
Manufacturer: Science Stuff  
1104 Newport Ave  
Austin, TX 78753  
(512) 837-6020  
Entry Date : 6/13/2013  
Print Date: 6/13/2013  
24 Hour Emergency Assistance : Chemtrec 800-424-9300  
Canutec 613-996-6666

Health:	3
Flammability:	2
Reactivity:	0
Hazard Rating: Least Slight Moderate High Extreme 0 1 2 3 4	
NA=Not Applicable NE=Not Established	

## SECTION 2 HAZARD IDENTIFICATION

Causes severe irritation and burns. May Be harmful if swallowed. Avoid breathing vapor or dust. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

## SECTION 3 MIXTURE COMPONENTS

SARA 313	Component	CAS Number	Percent Comp.	Dimension	Exposure Limits
<input type="checkbox"/>	Acetic Acid, Glacial	CAS# 64-19-7	Balance	V/V	10 ppm OSHA TWA, 15 ppm OSHA STEL
<input type="checkbox"/>	Acetic Anhydride	CAS# 108-24-7	2.1%	V/V	5 ppm (20 mg/mf) OSHA TWA
<input type="checkbox"/>	Perchloric Acid 70% w/w	CAS#: 7601-90-3	4.25%	V/V	STEL 3 mg/M3 TWA 1 mg/M3

## SECTION 4 FIRST AID MEASURES

Causes severe irritation and burns. May Be harmful if swallowed. Avoid breathing vapor or dust. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: CALL A PHYSICIAN. SKIN: In case of contact, immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person.

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**SECTION 5 FIRE FIGHTING MEASURES**

Fire Extinguisher Type: Carbon Dioxide, dry chemical powder or appropriate foam

Fire / Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back.

Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Absorb spill with inert material, then place in a chemical waste container. Neutralize with a weak base.

**SECTION 7 HANDLING AND STORAGE**

Keep away from heat and flame. Do not get in eyes, on skin, on clothing. Use with adequate ventilation.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Respiratory Protection: Organic Vapor Cartridge

Ventilation

Local Exhaust

Mechanical

Protective Gloves: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure. Use in well ventilated area or use respirator.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Melting Point:	Information not available	Percent Volatile by Volume:	Information not available
Boiling Point:	Information not available	Evaporation Rate	Information not available
Vapor Pressure:	Information not available	Evaporation Standard	
Vapor Density:	Information not available	Auto Ignition Temp	Not applicable
Solubility in Water:	Soluble	Lower Flamm. Limit in Air	Information not available
Appearance /Odors:	Clear pungent odor liquid (Strong Vinegar smell)	Upper Flamm. Limit in Air	Information not available
Flash Point:	Information not available		
Specific Gravity:	Information not available		

**SECTION 10 STABILITY AND REACTIVITY INFORMATION**

Stability: Stable

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Conditions to Avoid: Material can react violently with strong oxidizing agents, metals, strong bases, amines.

Materials to Avoid: Oxidizers, strong bases, amines.

Hazardous Decomposition Products: Not known to occur

Hazardous polymerization: Not known to occur.

Conditions to Avoid: None known

**SECTION 11 Toxicological Information**

Toxicity data  
United States  
Product/ingredient name: Acetic Acid

Test	Result	Route	Species
LD50	3310 mg/kg	Oral	Rat
LD50	4960 mg/kg	Oral	Mammal
LD50	1060 mg/kg	Dermal	Mammal
LDLo	600 mg/kg	Oral	Rabbitt
LDLo	600 mg/kg	Oral	Rabbitt
LC50	5620 ppm (1 hour/hours)	Inhalation	Muskrat

Product/Ingredient name: Acetic Anhydride

Test	Result	Route	Species
LD50	1780 mg/kg (4 hour/hours)	Oral	Rat
LC50	1000 ppm (4 hour/hours)	Inhalation	Rat

Chronic effects on humans: Contains material which causes damage to the following organs: lungs, upper respiratory tract, skin, eye, lens or cornea, teeth.

Other toxic effects on humans: Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive), of ingestion.

Perchloric Acid:

Acute toxicity

Oral LD50

no data available

Inhalation LC50

no data available

Dermal LD50

no data available

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes: no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable,

possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified

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as a known or anticipated carcinogen by NTP.  
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.  
Reproductive toxicity  
no data available  
Teratogenicity  
no data available  
Specific target organ toxicity - single exposure (Globally Harmonized System)  
no data available

### SECTION 12 Ecological Information

Ecotoxicity data - United States

Product/ingredient name: Acetic Acid

Species	Period	Result
Daphnia magna (EC50)	48 hour/hours	65 mg/l
Lepomis macrochirus (LC50)	96 hour/hours	75 mg/l
Pimephales promelas (LC50)	96 hour/hours	79 mg/l
Pimephales promelas (LC50)	96 hour/hours	88 mg/l

Environmental precaution: No known significant effects or critical hazards.

Products of degradation: These products are carbon oxides (CO, CO<sub>2</sub>) and water.

Toxicity of the products of biodegradation: The product of degradation are as toxic as the product itself.

Perchloric acid:  
Toxicity  
no data available  
Persistence and degradability  
no data available  
Bioaccumulative potential  
no data available  
Mobility in soil  
no data available  
PBT and vPvB assessment  
no data available  
Other adverse effects  
no data available

### SECTION 13 Disposal Considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

### SECTION 14 Transport Information

DOT Classification: UN2920, Corrosive Liquid, Flammable, n.o.s.  
(Acetic Acid, Perchloric Acid), 8, (3), PG II

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

### SECTION 15 Regulatory Information

United States

HCS Classification: chemicals: Acetic Anhydride; Acetic Acid  
Flammable liquid  
Toxic material  
Irritating material  
Target organ effects

U.S. Federal regulations: TSCA 8(b) inventory: Listed

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SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Acetic Anhydride; Acetic Acid

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Perchloric Acid 0.1000N in Acetic Acid: Immediate (acute) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: Acetic Anhydride; Acetic Acid

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Canada

WHMIS (Canada):

Class B-2: Flammable Liquid

Class D-2B: Material causing other toxic effects (Toxic).

Class E: Corrosive material

CEPA DSL/CEPA NDSL: CEPA DSL: Acetic Anhydride, Acetic Acid

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR

Perchloric acid:

OSHA Hazards

Oxidizer, Harmful by ingestion., Corrosive

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold

(De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

Perchloric acid

CAS-No.

7601-90-3

Revision Date

1993-04-24

Pennsylvania Right To Know Components

Water

CAS-No.

7732-18-5

Revision Date

Perchloric acid 7601-90-3 1993-04-24

New Jersey Right To Know Components

Water

CAS-No.

7732-18-5

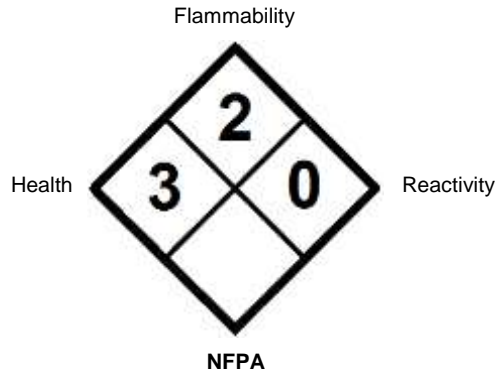
Revision Date

Perchloric acid 7601-90-3 1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm..

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Revisions

12/11/2000	0	Creation date for msds. Stn
3/4/2009	0.1	Updated msds with current information. Stn
10/12/2011	0.2	Revised DOT from Corrosive Liquid, n.o.s., (Acetic Acid), 8, UN1760, PG II to Corrosive liquids, flammable, n.o.s. (Acetic acid), 8, (3), UN2920, PG II. . LS
1/10/2012	0.3	Revised to 16 sections to include hazards of Perchloric acid LS

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