



MSDS

P.O. Box 329 - 802 Washington Avenue Chestertown, MD 21620 - USA

TELEPHONE # FOR INFORMATION 410 778-3100

24 HOUR EMERGENCY NUMBER (CHEM-TEL): USA, Canada, Puerto Rico 800-255-3924;

Outside North American Continent 813-248-0585 (call Collect)

MATERIAL SAFETY DATA SHEET

1. Product Identification

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

Manufactured By: LaMotte Company

802 Washington Avenue

Chestertown, MD 21620

2. Composition/Information On Ingredients

Hazard	CAS#/Name	%	PEL	TLV
Yes	64-17-5 Ethyl Alcohol	57	1900 mg/m ³	1000 ppm
Yes	67-56-1 Methyl Alcohol	3	260 mg/m ³	200 ppm
Yes	77-09-8 Phenolphthalein	0.5	None Established	None Established
No	7732-18-5 Water	to 100%	None Established	None Established

3. Hazards Overview

Primary Route Of Entry: Skin Ingestion Inhalation

Poison! Danger! Flammable liquid & vapor! Harmful if swallowed, inhaled, or absorbed through skin. Ingestion may be fatal or cause blindness. Inhalation can cause headache, nausea. Affects central nervous system. May cause irritation to eyes and skin.

HMIS Hazard

Scale: 4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Least

Health: 2 Flammability: 3 Reactivity: 1

Carcinogenicity: Yes: NTP

Other Health Related Comments:

This product contains Phenolphthalein, a chemical known to the State of California to cause cancer. The IARC has placed Phenolphthalien into the 2B classification. This means that Phenolphthalien is "reasonably anticipated to be a human carcinogen."

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

4. First Aid Measures

- Eye Contact:** Flush thoroughly with water for 15 minutes while lifting upper and lower eyelids. If irritation persists, contact physician.
- Skin Contact:** Flush with water for 15 minutes while removing affected clothing/shoes. If irritation persists, contact physician. Wash clothing prior to reuse.
- Ingestion:** Give large quantity of water. Call a physician immediately.
- Inhalation:** Remove to fresh air.
-

5. Fire Fighting Measures

- Flash Point (Method Used):** 22 deg C-closed cup **LEL:** 3.3% **UEL:** 19%
- Extinguishing Media:** Dry chemical, CO2, or water spray
- Special Fire Fighting Procedures:** N/A
- Unusual Fire & Explosion Hazard:** Vapors may travel distance to ignition source and flash back.
-

6. Accidental Release Measures

Ventilate area & eliminate all sources of ignition. Absorb spill on inert material, place into chemical waste container, and hold for proper disposal according to federal, state, and local regulations.

7. Handling & Storage

Store in cool, dry place away from heat and incompatible materials. Do not use near heat or flame.

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

8. Exposure Controls/Personal Protection

Ventilation

Mechanical

Protection When Handling

Eye Protection Gloves Lab Coat

Work/Hygenic Practices: Use with adequate ventilation and avoid contact with skin & eyes.

9. Physical & Chemical Properties

Appearance: Clear Colorless Liquid

Solubility In Water: Soluble

Odor: Alcohol

pH: N/A

Vapor Density: 1.6 (Air=1)

Vapor Pressure: ca. 40 mm Hg @ 20° C

Boiling Point: ca. 80° C

Melting Point: N/A

10. Stability & Reactivity

Stable: Yes

Conditions To Avoid: Heat, sources of ignition

Incompatibility (Materials To Avoid): Contact with nitric acid or other strong oxidizers

Hazardous Decomposition Products: COx

11. Toxicological Information

Target Organs: Central Nervous System Skin

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

12. Ecological Information

Information Not Yet Available

13. Disposal Considerations

Dispose according to federal, state and local regulations.

14. Transportation Information

Proper Shipping Name:

DOT: ETHANOL

IATA: ETHANOL

Hazard Class/Div:

DOT: 3

IATA: 3

UN: 1170

Packing Group: II

15. Regulatory Information

Chemical Inventory Status

Hazard	Ingredient	USA	Europe	--- Canada ---		Australia	Japan
		TSCA	EC	DSL	NDSL		
Yes	64-17-5 Ethanol	Yes	Yes	Yes	No	Yes	Yes
Yes	67-56-1 Methyl Alcohol	Yes	Yes	Yes	No	Yes	Yes
Yes	77-09-8 Phenolphthalein	Yes	Yes	Yes	No	Yes	Yes
No	7732-18-5 Distilled Water	Yes	Yes	Yes	No	Yes	Yes

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

Federal, State, & International Regulations

Ingredient	--- SARA 302 ---		----- SARA 313 -----		CERCLA	RCRA 261.33	TSCA 8(D)
	RQ	TPQ	Listed	Chemical Category			
64-17-5 Ethanol	No	No	No	No	No	No	No
67-56-1 Methyl Alcohol	No	No	Yes	No	5000	U154	No
77-09-8 Phenolphthalein	No	No	No	No	No	No	No
7732-18-5 Distilled Water	No	No	No	No	No	No	No

Product Code: 2258

Product Description: Phenolphthalein Indicator 0.5%

Ingredient	Acute	--- SARA 311/312 --- Hazard Categories				----- Australia -----		This MSDS Is WHMIS Compliant
		Chronic	Fire	Pressure	Reactivity	Hazchem Code	Poison Schedule	
64-17-5 Ethanol	Yes	Yes	Yes	No	No	None Allocated	None Allocated	
67-56-1 Methyl Alcohol	Yes	Yes	Yes	No	No	2PE	S6	
77-09-8 Phenolphthalein	Yes	Yes	No	No	No	None Allocated	None Allocated	
7732-18-5 Distilled Water	No	No	No	No	No	None Allocated	None Allocated	
product 2258 as a whole	Yes	Yes	Yes	No	No	2[S]E	S5	Yes

16. Other Information

Keep out of reach of children.

Prepared By: Regulatory Affairs Department

Revised: 6/17/2009



Issuing Date 3/8/2012

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name TOTAL ALKALINITY INDICATOR
Product Code(s) 2786
Recommended Use Test kit reagent. Industrial (not for food or food contact use). Laboratory chemicals.
Company LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620
USA
Emergency Telephone Number 24 Hour Emergency Number (CHEM-TEL):
USA, Canada, Puerto Rico 1-800-255-3924
Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

CAUTION!

Emergency Overview

May cause skin, eye, and respiratory tract irritation
May be harmful if swallowed

Appearance Dark blue

Physical State Liquid

Odor None

Potential Health Effects

Principle Routes of Exposure Skin and eye contact

Acute Toxicity

Eyes May cause slight irritation.
Skin May cause irritation.
Inhalation May cause irritation of respiratory tract.
Ingestion May cause irritation. May cause gastrointestinal discomfort if consumed in large amounts.
May be harmful if swallowed.

Chronic Effects

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	845-10-3	<0.05
Hydrochloric acid	7647-01-0	<0.05
Sodium hydroxide	1310-73-2	<0.1
Bromcresol green	76-60-8	0.1
Thiosulfate, sodium, pentahydrate	10102-17-7	0.8
Water	7732-18-5	to 100%

4. FIRST AID MEASURES

General Advice	Do not get in eyes, on skin, or on clothing.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation persists or develops, contact a physician.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Not expected to require first aid measures.
Ingestion	Drink plenty of water. Consult a physician. Never give anything by mouth to an unconscious person.
Protection of First-aiders	Use personal protective equipment. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5. FIRE-FIGHTING MEASURES

Flash Point	Not applicable			
Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray.			
Explosion Data				
NFPA	Health Hazard 0	Flammability 0	Stability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 1	Flammability 0	Stability 0	

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment. Refer to Section 8.
Methods for Containment	Dispose according to local regulations, if permitted dissolve in water and rinse to drain.
Methods for Cleaning Up	After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling	Handle in accordance with good industrial hygiene and safety practice. Prevent contact with skin, eyes, and clothing. Do not ingest. Do not eat, drink, or smoke when using this product.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat and incompatibles. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt 845-10-3	None Known	None Known	None Known

TOTAL ALKALINITY INDICATOR

Product Code(s) 2786

Hydrochloric acid 7647-01-0	None Known	Ceiling 5 ppm (7mg/m ³)	IDLH: 50 ppm Ceiling: 7 mg/m ³ Ceiling: 5 ppm
Sodium hydroxide 1310-73-2	None Known	TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
Bromocresol green 76-60-8	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate 10102-17-7	None Known	None Known	None Known
Water 7732-18-5	None Known	None Known	None Known

Engineering Measures Eyewash stations. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection

Safety glasses with side-shields.

Skin and Body Protection

Wear protective gloves/clothing.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Dark blue	Odor	None
Physical State	Liquid	pH	8
Flash Point	Not applicable	Boiling Point/Range	ca. 100°C/212°F

Vapor Pressure	<17 mmHg @ 20°C	Vapor Density	<1(Air = 1)
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10. STABILITY AND REACTIVITY

Stability Stable under normal conditions of use and storage.

Incompatible Products Strong acids.

Conditions to Avoid Excessive heat. Incompatible products.

Hazardous Decomposition Products Hazardous decomposition products formed under fire conditions - . Sulfur oxides (SOx).

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known	None Known
Hydrochloric acid	700 mg/kg (Rat)	5010 mg/kg (Rabbit)	3124 ppm (Rat) 1 h
Sodium hydroxide	None Known	1350 mg/kg (Rabbit)	None Known
Bromocresol green	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	5000 mg/kg (Rat)	None Known	None Known
Water	90 mL/kg (Rat)	None Known	None Known

Chronic Toxicity**Chronic Toxicity**

None known.

Carcinogenicity

There are no known carcinogenic chemicals in this product.

Chemical Name	ACGIH	IARC	NTP	OSHA
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known	None Known	None Known
Hydrochloric acid	None Known	None Known	None Known	None Known
Sodium hydroxide	None Known	None Known	None Known	None Known
Bromcresol green	None Known	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	None Known	None Known	None Known
Water	None Known	None Known	None Known	None Known

Endocrine Disruptor Information

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known	None Known
Hydrochloric acid	None Known	None Known	None Known
Sodium hydroxide	None Known	None Known	None Known
Bromcresol green	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	None Known	None Known
Water	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known	None Known	None Known
Hydrochloric acid	None Known	LC50= 282 mg/L <i>Gambusia affinis</i> 96 h	None Known	None Known
Sodium hydroxide	None Known	LC50= 45.4 mg/L <i>Oncorhynchus mykiss</i> 96 h	None Known	None Known
Bromcresol green	None Known	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	LC50= 24000 mg/L <i>Gambusia affinis</i> 96 h	None Known	None Known
Water	None Known	None Known	None Known	None Known

Chemical Name	Log Pow
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known
Hydrochloric acid	None Known
Sodium hydroxide	None Known
Bromcresol green	None Known
Thiosulfate, sodium, pentahydrate	None Known
Water	None Known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of in accordance with local regulations. Dispose according to federal, state, and local regulations. If permitted, dissolve in large volume of water and rinse to drain with excess water.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt - 845-10-3	None Known	None Known	None Known	None Known
Hydrochloric acid - 7647-01-0	None Known	None Known	None Known	None Known
Sodium hydroxide - 1310-73-2	None Known	None Known	None Known	None Known
Bromocresol green - 76-60-8	None Known	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate - 10102-17-7	None Known	None Known	None Known	None Known
Water - 7732-18-5	None Known	None Known	None Known	None Known

14. TRANSPORT INFORMATION

DOT

Not regulated

IATA

Not regulated

IMDG/IMO

Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt 845-10-3 (<0.05)	Present	X	X	ENCS	X	KE-11175	X	X
Hydrochloric acid 7647-01-0 (<0.05)	T	X	X	X	X	KE-20189 X	X	X
Sodium hydroxide 1310-73-2 (<0.1)	Present	X	X	1-410; 2-1972	X	KE-31487	X	X
Bromocresol green 76-60-8 (0.1)	Present	X	X	ENCS	X	KE-02745	X	X
Thiosulfate, sodium, pentahydrate 10102-17-7 (0.8)	TSCA	X	EINECS/ELINCS	1-503	X	KECL	X	X
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	845-10-3	<0.05	None Known
Hydrochloric acid	7647-01-0	<0.05	1.0
Sodium hydroxide	1310-73-2	<0.1	None Known
Bromocresol green	76-60-8	0.1	None Known
Thiosulfate, sodium, pentahydrate	10102-17-7	0.8	None Known
Water	7732-18-5	to 100%	None Known

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt 845-10-3 (<0.05)	None Known	None Known	None Known	None Known
Hydrochloric acid 7647-01-0 (<0.05)	5000 lb	None Known	None Known	X
Sodium hydroxide 1310-73-2 (<0.1)	None Known	None Known	None Known	None Known
Bromocresol green 76-60-8 (0.1)	None Known	None Known	None Known	None Known

TOTAL ALKALINITY INDICATOR

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Thiosulfate, sodium, pentahydrate 10102-17-7 (0.8)	None Known	None Known	None Known	None Known
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	845-10-3	<0.05	None Known	None Known	None Known	None Known
Hydrochloric acid	7647-01-0	<0.05	Present	None Known	None Known	None Known
Sodium hydroxide	1310-73-2	<0.1	None Known	None Known	None Known	None Known
Bromocresol green	76-60-8	0.1	None Known	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	10102-17-7	0.8	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known
Hydrochloric acid	5000 lb	5000 lb
Sodium hydroxide	1000 lb	None Known
Bromocresol green	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	None Known
Water	None Known	None Known

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical Name	CAS-No	California Prop. 65
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	845-10-3	None Known
Hydrochloric acid	7647-01-0	None Known
Sodium hydroxide	1310-73-2	None Known
Bromocresol green	76-60-8	None Known
Thiosulfate, sodium, pentahydrate	10102-17-7	None Known
Water	7732-18-5	None Known

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known	None Known	None Known	None Known
Hydrochloric acid	X	X	X	X	X
Sodium hydroxide	X	X	X	None Known	X
Bromocresol green	None Known	None Known	None Known	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	X	None Known	None Known	None Known

Water	None Known	None Known	None Known	None Known	None Known
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International Regulations

Mexico - Grade

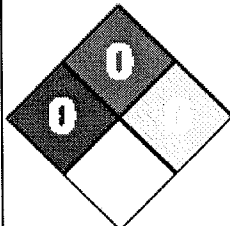

Chemical Name	Carcinogen Status	Exposure Limits
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt	None Known	None Known
Hydrochloric acid	None Known	None Known
Sodium hydroxide	None Known	None Known
Bromcresol green	None Known	None Known
Thiosulfate, sodium, pentahydrate	None Known	None Known
Water	None Known	None Known

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]-, sodium salt 845-10-3 (<0.05)	Not determined
Hydrochloric acid 7647-01-0 (<0.05)	1 % A D1A E D1B E D1A E
Sodium hydroxide 1310-73-2 (<0.1)	1 % E
Bromcresol green 76-60-8 (0.1)	Uncontrolled product according to WHMIS classification criteria
Thiosulfate, sodium, pentahydrate 10102-17-7 (0.8)	Uncontrolled product according to WHMIS classification criteria
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria

16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	0		
Health Hazard	1								
Fire Hazard	0								
Reactivity	0								

Prepared By
Issuing Date
Revision Date
Revision Note
Initial Release

Regulatory Affairs Department
3/8/2012
16-Mar-2012

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS



Issuing Date 7/24/2012

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name SULFURIC ACID, 0.12N
Product Code(s) 7748
Recommended Use Test kit reagent. Laboratory chemicals. Industrial (not for food or food contact use).
Company LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620
USA
Emergency Telephone Number 24 Hour Emergency Number (CHEM-TEL):
USA, Canada, Puerto Rico 1-800-255-3924
Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Harmful if swallowed
May cause severe eye and skin irritation
May cause irritation of respiratory tract

Appearance Clear, colorless

Physical State Liquid

Odor Odorless

OSHA Regulatory Status Safety information is given for exposure to the reagent as sold and considers exposure to the chemical if user has direct eye and skin contact.

Potential Health Effects
Principle Routes of Exposure Eye contact, Skin contact, Ingestion, Inhalation.

Acute Toxicity
Eyes Contact with eyes may cause severe irritation. Causes irritation, redness, and pain.
Skin Irritating to skin. Symptoms can include redness, itching, and pain. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation Depending on exposure, the effects from inhalation of corrosive mists can vary from mild irritation to serious damage to respiratory tract. Effects are expected to be less severe than for exposure to higher concentrations which symptoms can include coughing, nausea, vomiting.
Ingestion Harmful if swallowed. Causes irritation or burns to the digestive and respiratory tract. Can cause immediate pain and burning in the mouth, throat, esophagus and GI tract. May cause nausea, vomiting, and diarrhea, and in severe cases death.

Chronic Effects
Aggravated Medical Conditions Hypersensitivity may occur in those with preexisting skin disorders. Respiratory disorders. Preexisting eye disorders.

Handling	Handle in accordance with good industrial hygiene and safety practice. Prevent contact with skin, eyes, and clothing. Do not ingest. Do not eat, drink, or smoke when using this product.
Storage	Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from incompatible materials such as cyanides or sulfides. Store away from strong bases or metals. Do not store near combustible materials. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³
Water 7732-18-5	None Known	None Known	None Known

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection	Safety glasses with side-shields.
Skin and Body Protection	Wear protective gloves/clothing.
Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, colorless	Odor	Odorless
Physical State	Liquid	pH	1
Flash Point	Not applicable	Autoignition Temperature	Not applicable
Boiling Point/Range	No data available	Flammability Limits in Air	Not applicable
Vapor Pressure	No information available	Vapor Density	No information available

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions of use and storage.
Incompatible Products	Water. Strong bases. Metals. Combustible materials. Cyanides. Sulfides. Formaldehyde.
Conditions to Avoid	Excessive heat. Incompatible products. Direct sunlight.
Hazardous Decomposition Products	Hydrogen gas. Sulfur oxides (SO _x).
Hazardous Reactions	Reacts violently with water. Contact with metals may evolve flammable hydrogen gas.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg (Rat)	None Known	510 mg/m ³ (Rat) 2 h
Water	90 mL/kg (Rat)	None Known	None Known

Chronic Toxicity

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid	A2	Group 1	Known	X
Water	None Known	None Known	None Known	None Known

ACGIH: (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Endocrine Disruptor Information

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Sulfuric acid	None Known	None Known	None Known
Water	None Known	None Known	None Known

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The material may be toxic to aquatic life.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
Sulfuric acid	None Known	LC50> 500 mg/L Brachydanio rerio 96 h	None Known	EC50 = 29 mg/L 24 h
Water	None Known	None Known	None Known	None Known

Bioaccumulation/Accumulation

When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical Name	Log Pow
Sulfuric acid	None Known
Water	None Known

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method**

Dispose according to federal, state, and local regulations. If permitted, neutralize reagent with sodium bicarbonate/sodium carbonate, add slurry to large volume of water to dilute, rinse to drain with excess water.

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Sulfuric acid - 7664-93-9	None Known	None Known	None Known	None Known

Water - 7732-18-5	None Known	None Known	None Known	None Known
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14. TRANSPORT INFORMATION

DOT

Proper Shipping Name CORROSIVE LIQUID, ACIDIC, N.O.S. (<1% Sulfuric acid solution)
Hazard Class 8
UN-No 3264
Packing Group III
Reportable Quantity (RQ) 1000

IATA

UN-No 3264
Proper Shipping Name CORROSIVE LIQUID, ACIDIC, N.O.S. (<1% Sulphuric acid solution)
Hazard Class 8
Packing Group III

IMDG/IMO

Proper Shipping Name CORROSIVE LIQUID, ACIDIC, N.O.S. (<1% Sulphuric acid solution)
Hazard Class 8
UN-No 3264
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Sulfuric acid 7664-93-9 (0.6)	Present	X	X	1-430; 1-724	X	KE-32570	X	X
Water 7732-18-5 (to 100%)	Present	X	X	ENCS	X	KE-35400	X	X

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Sulfuric acid	7664-93-9	0.6	1.0
Water	7732-18-5	to 100%	None Known

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard Yes

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances

SULFURIC ACID, 0.12N

Product Code(s) 7748

Sulfuric acid 7664-93-9 (0.6)	1000 lb	None Known	None Known	X
Water 7732-18-5 (to 100%)	None Known	None Known	None Known	None Known

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any HAPs.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Sulfuric acid	7664-93-9	0.6	None Known	None Known	None Known	None Known
Water	7732-18-5	to 100%	None Known	None Known	None Known	None Known

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sulfuric acid	1000 lb	1000 lb
Water	None Known	None Known

U.S. State Regulations

California Proposition 65

WARNING! California Proposition 65 has classified "strong inorganic acid mists containing sulfuric acid" as a chemical known to the State of California to cause cancer. This classification applies only to "mists" containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions, as in this solution.

Chemical Name	CAS-No	California Prop. 65
Sulfuric acid	7664-93-9	Carcinogen
Water	7732-18-5	None Known

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X
Water	None Known	None Known	None Known	None Known	None Known

International Regulations

Mexico - Grade

Chemical Name	Carcinogen Status	Exposure Limits
Sulfuric acid	A2	Mexico: TWA= 1 mg/m ³
Water	None Known	None Known

Canada

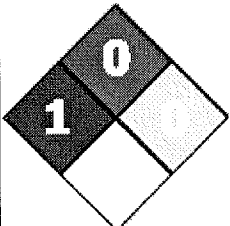

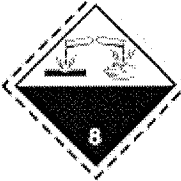
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Component	WHMIS Hazard Class
Sulfuric acid 7664-93-9 (0.6)	1 % D1A E
Water 7732-18-5 (to 100%)	Uncontrolled product according to WHMIS classification criteria

Chemical Name	NPRI

Sulfuric acid	X
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16. OTHER INFORMATION

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">1</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	1		
Health Hazard	1								
Fire Hazard	0								
Reactivity	1								

Prepared By Regulatory Affairs Department
Issuing Date 7/24/2012
Revision Date 24-Jul-2012
Revision Note
Initial Release
Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS