

Section 1 - Chemical Product and Company Identification

GHS Product Identifier

B425

Product Name

Light's Solution

Manufacturer Name

Sensorex Corporation

Recommended Use/ Restrictions on Use

Use as solution electrochemical ORP standard. Not for household use.

Address (Number, Street, City, State and Zip Code)

11751 Markon Drive

Garden Grove, CA. 92841 USA

Emergency Telephone Number (24 hr) (800) 222-1222

American Association of Poison Control Centers

Telephone Number for Information

714-895-4344

Section 2 - Hazards Identification

GHS Label Elements
Signal Word:
Danger

GHS Classification:

Corrosive to metals (Category 1), H290.

Skin corrosion (Category 1A), H314.

Serious eye damage (Category 1), H318.

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335.

Other hazards not classified or covered by GHS:

None

Hazard Statements:

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

Precautionary Statements:

P234 - Keep only in original container.

P264 - Wash skin thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

P363 - Wash contaminated clothing before reuse.

P390 - Absorb spillage to prevent material damage.

P405 - Store locked up.

P406 - Store in corrosive resistant stainless steel container with a resistant inner liner.

P501 - Dispose of contents/container to an approved waste disposal plant.

Section 3 - Composition/Ingredient information

Chemical Identity	CAS Registry #	EC#	Percent Weight (%)
Sulfuric Acid	7664-93-9	231-639-5	10
Ammonium Ferric Sulfate	7783-83-7	233-382-4	7.7
Ammonium Ferrous Sulfate	7783-85-9	233-151-8	3
Deionized Water	7732-18-5	231-791-2	Balance

Section 4 - First Aid Measures

Description of Necessary First Aid Measures:

General: Consult a physician. Present this safety data sheet to the doctor in attendance. Move out of dangerous area.

IF INHALED: Move person into fresh air. If not breathing, perform rescue breathing and contact emergency medical personnel. If breathing is difficult, give oxygen.

SKIN CONTACT: Wash affected area with soap and water.

INGESTION: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

EYE CONTACT: Irrigate immediately with large quantity of water for at least 15 minutes. Consult a physician.

Most important symptoms/effects, acute and delayed:

INHALATION: No data available.

SKIN CONTACT: No data available.

EYE CONTACT: No data available.

INGESTION: No data available.

Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:

No data available

Section 5 - Fire-fighting Measures

Suitable extinguishing media:

SUITABLE: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

UNSUITABLE: No unsuitable extinguishing media known.

Specific hazards arising from the chemical (combustion products):

N/A. Not flammable

Special protective actions for fire-fighters:

Wear self-contained breathing apparatus for fire-fighting if necessary.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency responders:

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Refer to Section 8 for Personal Protective Equipment.

Environmental precautions:

Do not let product enter drains.

Methods and materials for containment and cleaning up:

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable closed containers for disposal.

Section 7 - Handling and Storage

Precautions for safe handling:

Do not ingest. Do not get in eyes, skin or on clothing. Keep container closed. Use only with adequate ventilation. Do not breathe vapor or mist. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibles:

Keep in tightly closed container. Store in a cool, dry, well-ventilated area.

INCOMPATIBLE MATERIALS: Bases, Halides, Organic materials, Carbides, fulminates, nitrates, picrates, cyanides, chlorates, alkali halides, zinc salts, permanganates, hydrogen peroxide, azides, perchlorates, nitromethane, phosphorous. Reacts violently with cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III)oxide, powdered metals.

Section 8 - Exposure Controls/Personal Protection

Control parameters:

Occupational exposure limits:

Sulfuric acid (CAS 7664-93-9)

ACGIH TWA

C: 0.2 mg/m³

OSHA PEL

TWA: 1.0 mg/m³

OSHA DNEL

Inhalation, acute local effects

0.1 mg/m³

Long-term local effects

0.05 mg/m³

OSHA PNEC

Marine water

0.00025 mg/kg

Fresh water

0.0025 mg/L

Marine sediment

0.002 mg/kg

Onsite sewage treatment plant

8.8 mg/L

Ferric ammonium sulfate, dodecahydrate (CAS 7783-83-7)

ACGIH

TWA: 1.0 mg/m³

Ferrous ammonium sulfate (CAS 7783-85-9)

ACGIH

TWA: 1.0 mg/m³, soluble iron salts as Fe

Appropriate Engineering Controls:

Facilities storing or utilizing this product should be equipped with an eyewash facility and safety shower. Use adequate ventilation to keep any airborne concentrations low.

Individual protection measures, personal protective equipment:

RESPIRATORY PROTECTION: Use respirator.

SKIN PROTECTION: Wear appropriate protective gloves and clothes to prevent skin exposure.

EYE PROTECTION: Recommended. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 European Standard EN166.

Section 9 - Physical and Chemical Properties

APPEARANCE: Bright yellow liquid

pH: Approximately 0.5

ODOR: None

BOILING POINT (°C): Approximately 100

ODOR THRESHOLD: N/A

MELTING POINT (°C): Approximately 0

FLASH POINT: N/A

FLAMMABILITY: N/A

VAPOR PRESSURE: No data available

VAPOR DENSITY: No data available

RELATIVE DENSITY: 1

SOLUBILITY IN WATER: Infinite

PARTITION COEFFICIENT (n-octanol/water): No data available

UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available

EVAPORATION RATE compared with (n-butyl acetate = 1): 0.36 (water)

VISCOSITY: No data available

AUTO-IGNITION TEMPERATURE: N/A

DECOMPOSITION TEMPERATURE: No data available

Section 10 - Stability and Reactivity

REACTIVITY:

Stable under normal conditions of use and storage.

CONDITIONS TO AVOID:

No data available.

INCOMPATIBLE MATERIALS:

Bases, Halides, Organic materials, Carbides, fulminates, nitrates, picrates, cyanides, chlorates, alkali halides, zinc salts, permanganates, hydrogen peroxide, azides, perchlorates, nitromethane, phosphorous. Reacts violently with cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III)oxide, powdered metals.

CHEMICAL STABILITY:

Stable under normal conditions of use and storage.

POSSIBILITY OF HAZARDOUS REACTIONS:

Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

No data available.

Section 11 - Toxicological Information

Acute toxicity: LD50 oral - rat 140 mg/kg (Sulfuric acid)
LC50 inhalation - rat 510 mg/m³ (Sulfuric acid)

Skin corrosion/irritation: Extremely corrosive and destructive to tissue.

Serious eye damage/irritation: Corrosive to eyes.

Respiratory or skin sensitization: Not classified.

Germ cell mutagenicity: Not classified.

Carcinogenicity: The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans (group 1).

Reproductive toxicity: Not classified

STOT Single exposure: Not classified. **STOT Repeated exposure:** Not classified. **Aspiration hazard:** Not classified.

RTECS: WS5600000 Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Spasm, inflammation and edema of the larynx & bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Effects may be delayed.

Delayed and immediate effects also chronic from short and long term exposure:
The substance is toxic to blood, lungs, mucous membranes.

Symptoms related to the physical, chemical and toxicological characteristics:

INHALATION: No data available.

SKIN CONTACT: No data available.

EYE CONTACT: No data available.

INGESTION: No data available.

AFTER ABSORPTION OF LARGE QUANTITIES: No data available.

AFTER REPEATED EXPOSURE: No data available.

Numerical measure of toxicity:
TOXICITY DATA United States:
Sulfuric acid LD50 oral - rate 140 mg/kg LC50 inhalation - rat 510 mg/m³

Section 12 - Ecological Information

ECOTOXICITY:
Sulfuric acid

Toxicity to fish LC50 - *Gambusia affinis* - 42 mg/L - 96 hr
LC50 - *Lepomis macrochirus* - 49 mg/L - 24 hr

Toxicity to daphnia and other aquatic invertebrates EC50 - *Daphnia magna* (water flea) - 29 mg/L - 24 hr

PERSISTENCE AND DEGRADABILITY: No data available **BIOACCUMULATIVE POTENTIAL:** No data available

MOBILITY IN SOIL: No data available **OTHER ADVERSE EFFECTS:** No data available

Section 13 - Disposal Considerations

Material does not have an EPA waste number and is not listed as waste. Always contact a permitted waste disposal professional to assure compliance with federal, state and local regulations.

Section 14 - Transportation Information

UN NUMBER: 3264
UN PROPER SHIPPING NAME: Corrosive liquid, acidic, inorganic, n.o.s. 8, II
TRANSPORT HAZARD CLASS(ES): Class 8: Corrosive
PACKING GROUP: III
ENVIRONMENTAL HAZARD: No data available

Section 15 - Regulatory Information - (NOT ALL INCLUSIVE)

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

Sulfuric acid CAS-No. 7664-93-9 Revision Date: 2007-07-01

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Sulfuric acid CAS-No. 7664-93-9 Revision Date: 2007-07-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard (sulfuric acid)
Acute Health Hazard (ammonium iron bis(sulphate))

Massachusetts Right To Know Components

Sulfuric acid	CAS-No. 7664-93-9	Revision Date: 2007-07-01
Ammonium ferrous sulfate hexahydrate	CAS-No. 7783-85-9	Revision Date: 1993-04-24

Pennsylvania Right To Know Components

Sulfuric acid	CAS-No. 7664-93-9	Revision Date: 2007-07-01
Ammonium ferrous sulfate hexahydrate	CAS-No. 7783-85-9	Revision Date: 1993-04-24
Ammonium iron bis(sulphate)	CAS-No. 7783-83-7	Revision Date: 1989-08-11

New Jersey Right To Know Components

Sulfuric acid	CAS-No. 7664-93-9	Revision Date: 2007-07-01
Ammonium ferrous sulfate hexahydrate	CAS-No. 7783-85-9	Revision Date: 1993-04-24
Ammonium iron bis(sulphate)	CAS-No. 7783-83-7	Revision Date: 1989-08-11

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

Sulfuric acid CAS-No. 7664-93-9 Revision Date: 2007-09-28

Section 16 - Other Information

Date of preparation: April, 2015

This Safety Data Sheet replaces MSDS Lights ORP Solution.

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and Sensorex Corporation assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.

Full text of Hazard Statements referred to in Section 2:

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.