

Safety Data Sheet

FORMULA 4100

1. IDENTIFICATION

Product Name: FORMULA 4100
Chemical Name: SULFURIC ACID
Description: Clear to light yellow liquid with no odor
Recommended Use: Mineral Acid Solution
Restrictions on Use: For industrial use only.

Revised: 11/12/15

COMPANY IDENTIFICATION
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EMERGENCY PHONE NUMBERS
CHEMTREC (800) 424-9300
Outside USA: CHEMTREC COLLECT (703) 527-3887

2. HAZARD(S) IDENTIFICATION

GHS Classification:

Corrosive to metals - Category 1
Serious eye damage/irritation - Category 1
Skin corrosion/irritation - Category 1A
Specific target organ toxicity, single exposure - Category 1
Specific target organ toxicity, single exposure - Category 1
Acute toxicity, inhalation - Category 2
Hazardous to the aquatic environment, acute hazard - Category 3
Hazardous to the aquatic environment, long-term hazard - Category 3

Signal Word: Danger

Symbol(s):



Hazard Statements:

May be corrosive to metals
Causes severe skin burns and eye damage.
Causes damage to digestive system if swallowed
Causes damage to respiratory system if inhaled
Fatal if inhaled
Harmful to aquatic life
Harmful to aquatic life with long lasting effects

Precautionary Statements:

Prevention
Keep only in original container. Do not breathe dusts or mists. Do not get in eyes, on skin, or on clothing. Wash hands, forearms, gloves and contaminated surfaces thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/eye protection/face protection. [In case of inadequate ventilation] wear respiratory protection.

Response
Absorb spillage to prevent material damage.
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 CONTROL CENTER or doctor for treatment advice.

IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. Specific treatment (see First Aid on SDS or on this label).
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CONTROL CENTER or doctor for treatment advice.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CONTROL CENTER or doctor for treatment advice.
 Specific treatment is urgent (see First Aid on SDS or on this label).

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal

Dispose of contents/container in accordance with local, regional, national and international regulations.

Hazards Not Otherwise Classified: None Known.

Percentages of Components with Unknown Acute Toxicity:

Dermal: 93%

3. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL INGREDIENTS	CAS NO.*	PERCENT (%)**
SULFURIC ACID	7664-93-9	88% - 98%

Legend: L=<1%; M=1-10%; H=>10%

* Exposure limit and regulatory information in Sections 8 & 15

** Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with a directed stream of cool, clear water for at least 30 minutes. Forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Do not allow individual to rub their eyes. Get medical attention urgently, preferably from an ophthalmologist. Do not transport the victim until the recommended flushing period is completed, unless a portable emergency eye wash bottle is immediately available.

Skin Contact: Immediately wash skin with soap and plenty of water while removing contaminated clothing, for at least 15-20 minutes. Call a poison control center or doctor for treatment advice. Do not take contaminated clothing home to be laundered. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

Inhalation: Remove victim to fresh air. If individual experiences nausea, headache, dizziness, has difficulty in breathing or is cyanotic, seek medical attention. If not breathing, give artificial respiration via a suitable mechanical device such as a bag and mask. Do not use mouth-to-mouth resuscitation.

Ingestion: Do not induce vomiting. Rinse mouth with copious quantities of water first and get immediate medical attention. Drink several glasses of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep airways clear.

Note to Physician: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Aspiration may cause lung damage. Probable mucosal damage may contraindicate the use of gastric lavage.

Most Important Symptoms/Effects:

Eye Contact: May cause severe irritation or burns. Prolonged contact may cause irreversible damage and/or blindness.

Skin Contact: Prolonged contact may cause severe irritation, rash or burns. Severity is generally determined by concentration of solution and duration of contact.

Inhalation: Inhalation of vapor or mist can cause severe irritation of nose, throat, and lungs. May cause damage to the upper respiratory tract and lungs under severe conditions.

Ingestion: May be toxic. May cause severe irritation or burns of the mouth, throat, and internal tissues resulting in possible nausea and/or vomiting. Large amounts can result in acute toxic effects which may be fatal.

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

Notes to physicians: continued washing of the affected area with cold or iced water will be helpful in removing the last traces of sulfuric acid. Creams or ointments should not be applied before or during the washing phase of treatment.

5. FIRE FIGHTING MEASURES

Suitable (and Unsuitable) Extinguishing Media: Any media suitable for the surrounding fire.

Specific Hazards Arising from the Chemical: Product is corrosive to eyes, skin, and respiratory system. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat. If evaporated to dryness, some product residuals may burn. Contact with some metals may generate explosive hydrogen gas. Thermal decomposition may release oxides of sulfur

Special Protective Equipment and Precautions for Fire-Fighters: Wear self-contained breathing apparatus and full turn-out gear. Approach fire from upwind direction. If possible, move containers away from fire. Cool fire exposed containers with water spray. If containers rupture or leak, product may evolve irritating or toxic gas under extreme heat. Contain runoff.

6. ACCIDENTAL RELEASE MEASURES

Spill Containment and Clean-up Instructions:

Wear suitable protective equipment found in section 8. Soak up small spills with dry sand, clay or diatomaceous earth. Dike large spills, and cautiously neutralize with lime or soda ash. Transfer to a waste water treatment system. Comply with federal, state, and local regulations. See section 13 for Disposal information and 15 for Regulatory information. Avoid release of this product into the environment to prevent contamination of soil, sewers, natural waterways and/or groundwater. See Section 12 for Ecological Information.

7. HANDLING AND STORAGE

Handling and Storage:

Store in a cool, dry, well ventilated area, between 10°C and 49°C. Keep containers tightly closed when not in use and follow all recommended safety precautions when handling the material. Keep out of sun and away from heat or open flame. Keep away from incompatible materials. See Section 10 for incompatible materials.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Controls: General ventilation satisfactory. Mechanical may be required to keep concentration below maximum airborne exposure limits in confined areas.

PERSONAL PROTECTION EQUIPMENT

Respiratory: Not normally required if good ventilation is maintained. Otherwise, wear self-contained breathing apparatus

Eyes and Face: Chemical splash goggles or face shield/goggle combination

Hands and Skin: Chemical resistant rubber, neoprene latex or PVC

Other Protective Equipment: Eyewash station and safety shower in area of use. Rubber apron and boots are also recommended where workers will be handling the product.

EXPOSURE GUIDELINES

Exposure Limits:

COMPONENT	TLV
SULFURIC ACID	1 mg/m ³ (as H ₂ SO ₄)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Clear to light yellow liquid with no odor		
Odor Threshold:	N.D.	Vapor Pressure:	< 0.3
pH (undiluted):	<1	Vapor Density:	3.4
Freeze Point:	< -35°C (-31°F)	Specific Gravity(@22°C):	1.84
Boiling Point:	>279°C (535°F)	Solubility in Water:	Complete
Flash Point:	None	Partition Coefficient:	N.D. (n-octanol/water)
		Auto-Ignition Temperature:	N.D.
Evaporation Rate:	< 1	Decomposition Temperature:	N.D.
Flammability (solid, gas):	No	Viscosity:	N.D.
Flammable Limits in Air:	LFL – N.A. UFL – N.A.		

10. STABILITY AND REACTIVITY

Reactivity: Highly reactive to incompatible materials.

Chemical Stability: Stable; Conditions to avoid: reacts violently with water and organic materials to generate heat

Possibility of Hazardous Reactions: Will not occur under normal conditions.

Conditions to Avoid: Avoid water, excessive heat, sparks or open flames.

Incompatible Materials: Water, alkalis, metals, carbides, chlorates, nitrates, oxidizers, reducing agents, and combustible organic materials. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, and carbides.

Hazardous Decomposition Products: Thermal decomposition may release oxides of sulfur

11. TOXICOLOGICAL INFORMATION

Ingestion Testing: Rat, LD50: 2,140 mg/kg

Skin Testing: None established for this product.

Inhalation Testing: Rat, LC50/2hr: 0.40 mg/l

CHRONIC TOXICITY DATA

Sensitization Testing: None established for this product.

Other Testing: None established for this product.

Routes of Exposure: Eyes, Ingestion, Inhalation, Skin.

Eye Contact: May cause severe irritation or burns. Prolonged contact may cause irreversible damage and/or blindness.

Skin Contact: Prolonged contact may cause severe irritation, rash or burns. Severity is generally determined by concentration of solution and duration of contact.

Inhalation: Inhalation of vapor or mist can cause severe irritation of nose, throat, and lungs. May cause damage to the upper respiratory tract and lungs under severe conditions.

Ingestion: May be toxic. May cause severe irritation or burns of the mouth, throat, and internal tissues resulting in possible nausea and/or vomiting. Large amounts can result in acute toxic effects which may be fatal.

Medical Conditions Aggravated by Exposure: Asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus and throat conditions. Skin irritation may be aggravated in individuals with existing skin disorders.

Chronic Effects from Repeated Overexposure: Other than short term effects, impaired lung function and possible discoloration and erosion of teeth may be encountered. Sulfuric acid mist found on one of three OSHA carcinogen lists.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity Data:

Invertebrate: Daphnia magna, EC50/24hr: 29.0 mg/l

Fish: Bluegill sunfish, LC50/96hr: 10.5 mg/l

Microorganisms: activated sludge, EC50/120hr: 58.0 mg/l

Product Fate Data: No information available

Biodegradation Data: No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with local, regional, national and international regulations.

Contact the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Triple rinse container (or equivalent) promptly after emptying and offer for reconditioning if appropriate. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal.

14. TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION

UN/NA ID Number: UN1830

Proper Shipping Name: SULFURIC ACID

Hazard Class: 8

Packing Group: PGII

VESSEL TRANSPORT (IMO/IMDG)

UN/NA ID Number: UN1830

Proper Shipping Name: SULFURIC ACID

Hazard Class: 8

Packing Group: PGII

Marine Pollutant: No

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

TSCA: All ingredients listed or exempt from listing.

CERCLA and/or SARA RQ:

Reportable Quantity: SULFURIC ACID (CAS#7664-93-9) - 1000lbs. (455 kg)

SARA Section 302 Hazard Class: No ingredients listed in this section.

SARA Section 311/312 Chemicals:

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

SARA Section 313 Chemicals: No ingredients listed in this section.

STATE REGULATIONS

Strong inorganic acid mists containing sulfuric acid are known to the State of California to cause cancer.

16. OTHER INFORMATION

HAZARD RATING SUMMARY

Hazard Rating System:	NFPA	CODE TRANSLATION
Health:	3	0 = Minimal Hazard
Flammability:	0	1 = Slight Hazard
Reactivity:	2	2 = Moderate Hazard
Special:		3 = Severe Hazard
		4 = Extreme Hazard

Other Precautions: This product has been designed for use in specific types of water treatment systems and should be used only in accordance with the instructions provided by the technical representative servicing the facility.

SDS REVISION SUMMARY

Revised Date	Revision Notes
11/12/15	GHS Version 1.0: Supersedes: 4/27/15, Revised Inhalation Toxicity / GHS Category

ABBREVIATION CODE SUMMARY

- N.A. – Not Applicable
- N/A – Not Available
- N.D. – Not Determined
- N.E. – None Established

Disclaimer: The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given.