



Safety Data Sheet (Sulfuric Acid 96%)

Revision Date : 27 July 2013

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1. Product and Company Identification

Trade name: Sulfuric Acid 96%

Product code: Not Applicable

Supplier Info:

KMG Ultra Pure Chemicals Pte, Ltd.

14 Tuas Ave 20

Singapore 638826

Tel: +65 68651982

Fax: +65 68621985

Recommended use: Use according to manufacturers' directions

Emergency contact

Mobile: +65 9741 5009

Mobile: +65 94386262

2. Hazard Identification

Hazard Classification

Classification of the substance or mixture :

Acute Toxicity (Inhalation) Category 2

Metal Corrosion Category 1

Serious Eye Damage Category 1

Skin Corrosion/Irritation Category 1

GHS label elements :

Pictograms



Signal Word: DANGER!

Hazard Statements :

H330 Fatal if inhaled

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

Precautionary Statements :

Prevention:

P234 Keep only in original container



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P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash clothing and PPE thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/protective clothing/eye protection/face protection
P284	Wear respiratory protection
Response:	
P301 + P330 + P331	IF SWALLOWED: Rinse mouth , Do NOT induce vomiting
P301+312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304+P340	If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing
P303 + P361 + P353	If on skin, Remove/Take off immediately all contaminated clothing, Rinse skin with water/shower
P305 + P351 + P338	If in eyes, Remove contact lenses, if present and easy to do, continue rinsing. Rinse cautiously for several minutes.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P391	Collect Spillage
P330	Rinse mouth
P363	Wash contaminated clothing before reuse
P390	Absorb spillage to prevent material damage
Storage:	
P405	Store locked up
P406	Store in a corrosive resistant container with a resistant inner liner
Disposal :	
P501	Dispose of contents according to state/federal laws
Other Hazards :	Not Available

3. Composition/Information on ingredients

Chemical property

Description:

Components	CAS No.	EC/EINECS	Pre-registration No	% weight
Sulfuric Acid	7664-93-9		-	96%
Water	7732-18-5			4%

4. First-Aid Measures

The first aid measures for different routes of exposure:

General information:	Immediately remove contaminated clothing. Rinse skin with water/shower
Inhalation:	Wear respiratory protection, as necessary, and remove patient promptly to fresh air. Restore breathing, if required and, if breathing is difficult, give oxygen provided a qualified operator is available. Keep patient warm and at rest. Get medical attention.
Skin contact:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.
Eye contact:	If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a



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	result of vapour exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.
Ingestion:	Do not induce vomiting. If conscious, Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Get medical attention.
Protection for first aiders:	Personal protective equipment.
Indications to physicians:	Pre existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material : skin, lung (for example, asthma-like conditions).

5. Fire-fighting Measures

FIRE AND EXPLOSION DATA

FLASH POINT: NO FLASH POINT

FLAMMABLE LIMITS: LOWER: NA, UPPER: NA

AUTOIGNITION TEMP.: NA

EXTINGUISHING MEDIA:

Use any standard fire fighting agent (water spray or fog, dry chemical, foam, etc.) as appropriate to surrounding fire conditions.

SPECIAL FIRE FIGHTING PROCEDURES:

Use self-contained, NIOSH-approved, breathing apparatus and full protective clothing, including eye and skin protection.

Use water to keep fire-exposed containers cool or move from fire area if without risk.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Non combustible.

- Not considered to be a significant fire risk.
- Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
- Heating may cause expansion or decomposition leading to violent rupture of containers.

Decomposition may produce toxic fumes of: hydrogen chloride.

May emit poisonous fumes.

May emit corrosive fumes.

6. Accidental Release Measures

SMALL SPILL:

Cover the contaminated surface with sodium bicarbonate or a soda ash/flaked lime mixture (50-50). Mix and add water if necessary to form a slurry. Scoop up slurry and wash site with soda ash solution. Proper mixing procedures are essential. Trained personnel should conduct this procedure. Untrained personnel should be removed from the spill area.

LARGE SPILL:

Eliminate all ignition sources (flares, flames including pilot lights, electrical spark). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If



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runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean-up is completed. Stop spill at source. Dike to prevent spreading. Pump to salvage tank.

7. Handling and Storage

Storage:

Protect from physical damage. Store in a cool, well-ventilated area away from combustibles and reactive chemicals. Keep out of sun and away from heat. Keep containers upright. No smoking in storage area.

Handling:

Avoid contact with skin, eyes and clothing. Avoid breathing mist. Use appropriate personnel protective equipment. Do not add water to acid. When diluting, always add acid to water cautiously and with agitation. Use with adequate ventilation.

Conditions for storage rooms and vessels: Keep in a cool, well ventilated area

8. Exposure Controls and Personal Protection

Engineering controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Control parameters:

SULFURIC ACID (7664-93-9)

OSHA VPEL 1.000 mg/m³ – TWA

ACGIH TLV 1.000 mg/m³ - TWA

ACGIH TLV 3.000 mg/m³ – STEL

Consult also local authorities for acceptable exposure limits

Biological standards: Not Available

Personal protective equipment (PPE):





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Respiratory protection:

Wear respiratory equipment with suitable filter or wear a self contained respiratory apparatus.

Hand protection: Protective gloves

Eye protection: Safety goggles

Skin and body protection: Chemical protective clothing Wear splash apron, work uniform and shoes to prevent skin contact.

Hygiene measures: Do not inhale vapor .Avoid contact with skin and eyes. Do not wear contaminated clothing.

9. Physical and Chemical Properties

Form:	<i>Liquid</i>
Color:	<i>Colorless to light yellow liquid</i>
Odor:	<i>Odorless</i>
Odor Threshold:	<i>Not Available</i>
PH value:	<i>0.3 (1% solution)</i>
Melting point/Freezing Point:	<i>27°C (94%)</i>
Boiling Point/Boiling Range:	<i>274°C (94%)</i>
Flammability (Solid, gas):	<i>Non-Flammable</i>
Flashpoint:	-
Test method:	-
Open cup:	-
Close cup:	-
Decomposition temperature:	-
Liquid Density:	<i>9.820 lbs/gal @ 77.00 F</i>
Percent Volatile:	<i>100%</i>
Specific Vapor density:	<i>1.27 @AIR=1</i>
Vapor pressure:	<i>17.50mmHg @ 68°F</i>
Specific Gravity @ 20°C:	<i>1.842</i>
Solubility:	<i>Miscible</i>

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Special Remarks on Reactivity:

Burning may produce ammonia, nitrogen oxides.

Conditions to avoid:

Protect from moisture. Do not allow water to enter container. Heat, sunlight, incompatibles.

Incompatible materials:

A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

Corrosivity



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Not Applicable

11. Toxicological Information

Toxicity to Animals

LD50 (oral-rat): 2140 mg/kg

LC50 (inhl-rat): 510 mg/m³/2 hr

LC50 (inhl-mouse): 320 mg/m³/2 hr

ROUTES OF ENTRY:

Not Available.

CHRONIC EFFECTS ON HUMANS:

Not Available.

OTHER TOXIC EFFECTS ON HUMANS:

Not Available.

SPECIAL REMARKS ON TOXICITY TO ANIMALS:

Not Available.

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS:

IARC and NTP have classified "strong inorganic acid mists containing sulfuric acid" as known human carcinogens. The state of California has also listed "strong inorganic acid mists containing sulfuric acid" on the Proposition 65 list as a cancer causing agent. No definitive causal relationship between sulfuric acid mist exposure and respiratory cancer has been shown.

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS:

Not Available.

12. Ecological Information

ENVIRONMENTAL FATE:

24.5 ppm/24 hr./bluegill/lethal/fresh water

42.5 ppm/48 hr./prawn/LC50/salt water

ENVIRONMENTAL TOXICITY:

Not available.

BOD5 AND COD:

Not available.

PRODUCTS OF BIODEGRADATION:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

TOXICITY OF THE PRODUCTS OF BIODEGRADATION:

The products of degradation are less toxic than the product itself.

13. Disposal Considerations



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Methods of Waste Disposal:

Carefully pour into water solution of sodium carbonate or bicarbonate in excess of amount needed to neutralize. Stir and allow to stand until bubbling stops. Wash to chemical drain with large excess of water. Rinse original drum with carbonate or bicarbonate solution before disposing.

Consult Federal, State or Local authorities for proper disposal procedures.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: Sulphuric acid , with more than 51% acid

Hazard Class: 8

UN / NA: 1830

Packing Group: II

International (Water, I.M.O.)

Proper Shipping Name: Sulphuric acid , with more than 51% acid

Hazard Class: 8

UN / NA: 1830

Packing Group: II

International (Air, I.C.A.O.)

Proper Shipping Name: Sulphuric acid , with more than 51% acid

Hazard Class: 8

UN / NA: 1830

Packing Group: II

15. Regulatory Information

Labeling according to EC Directives

According to EC Regulation

According to GHS directives

According to Singapore Standards (SS586: 2008)

To follow local state and federal laws where applicable

OTHER REGULATIONS:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 35

Risk Statements: Causes severe burns.

S: 26 30 45



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Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Never add water to this product. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Other Classifications:

WHMIS (Canada):

CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

CLASS E: Corrosive liquid.

DSCL (EEC):

R34- Causes burns.

R37- Irritating to respiratory system.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other Information

Abbreviations and acronyms:

- **GHS:** Globally Harmonized System of Classification and Labeling of Chemicals
- **OSHA :** The Occupational Health & Safety Assessment Series (Singapore)
- **NIOSH :** National Institute for Occupational Safety and Health (USA)
- **CAS:** Chemical Abstracts Service
- **LD50:** 50% Lethal Dose
- **LC50:** 50% Lethal Concentration
- **UN:** United Nations
- **TSCA:** Toxic Substances Control Act

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