

**Material Safety Data Sheet**

<b>Section 1: SUBSTANCE IDENTIFICATION AND SUPPLIER</b>	
<b>Product name:</b>	<b>Sulfuric acid</b>
<b>Other Names:</b>	<b>Oil of Vitriol; Sulfuric acid</b>
<b>Chemical formula:</b>	<b>H2SO4</b>
<b>Recommended Use:</b>	<b>Industrial Use of sulphuric acid as intermediate in manufacture of inorganic and organic chemicals including fertilizers.</b>
<b>Company Identification:</b> <b>Address:</b>	<b>Kemcore International Limited 133 CONNAUGHT RD UNIT 703 ALLIANCE COMM BLDG, HONGKONG</b>
<b>Customer Centre:</b>	<b>Kemcore International Limited</b>
<b>Section 2: HAZARD IDENTIFICATION</b>	
<b>Emergency Overview:</b>	<b>Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns.</b>
<b>Potential Acute Health Effects</b>	<b>Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</b>
<b>Routes of entry:</b>	<b>Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.</b>
<b>Target organs:</b>	<b>May cause damage to the following organs: kidneys, lungs, heart, cardiovascular system, upper respiratory tract, eyes, teeth.</b>
<b>Skin contact:</b>	<b>Very hazardous in case of skin contact (corrosive, irritant, permeator)</b>

**Material Safety Data Sheet**

<b>Eye contact:</b>	eye contact (irritant, corrosive),	
<b>Inhalation:</b>	Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death.	
<b>Ingestion:</b>		
<b>Chronic Exposure:</b>		
<b>Explanation of carcinogenicity:</b>	<b>CARCINOGENIC EFFECTS:</b> Classified 1 (Proven for human.) by IARC, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH.	
<b>Medical conditions aggravated by exposure:</b>		
<b>Section 3: Composition Information</b>		
<b>INGREDIENT</b>	<b>CAS No.</b>	<b>CONTENT</b>
Sulfuric acid	7664-93-9	95 - 98
<b>Section 4: FIRST AID MEASURES</b>		
<b>Inhalation:</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.	
<b>Ingestion:</b>	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.	
<b>Skin:</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may	

**Material Safety Data Sheet**

	be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
<b>Eye:</b>	<b>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.</b>
<b>Advice to Doctor:</b>	
<b>Section 5: FIREFIGHTING MEASURES</b>	
<b>Flash Point:</b>	<b>Not applicable</b>
<b>Combustion Products:</b>	<b>Products of combustion are not available since material is non-flammable. However, products of decomposition include fumes of oxides of sulfur. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas. Reacts with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively</b>
<b>Extinguishing Media:</b>	<b>Not applicable</b>
<b>Protective Equipment:</b>	<b>Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots</b>
<b>HAZCHEM Code:</b>	
<b>Section 6: ACCIDENTAL RELEASE MEASURES</b>	
<b>Spills and Disposal:</b>	<b>Small Spill:</b> <b>Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.</b> <b>Large Spill:</b> <b>Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material.</b>

**Material Safety Data Sheet**

	<b>Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.</b>
<b>Protective Clothing:</b>	See above
<b>Environmental:</b>	
<b>Section 7: HANDLING AND STORAGE</b>	
<b>Handling:</b>	<b>Keep locked up.. Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment.</b>
<b>Storage:</b>	<b>Hygroscopic. Reacts. Violently with water. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).</b>
<b>Other Information:</b>	
<b>Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION</b>	
<b>Exposure Limits:</b>	<b>TWA: 1 STEL: 3 (mg/m3) [Australia] Inhalation TWA: 1 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 1 STEL: 3 (mg/m3) from ACGIH (TLV) [United States] [1999] Inhalation TWA: 1 (mg/m3) from NIOSH [United States] Inhalation TWA: 1 (mg/m3) [United Kingdom (UK)]Consult local authorities for acceptable exposure limits.</b>
<b>Protective Equipment:</b>	See above
<b>Engineering Controls:</b>	<b>Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.</b>

**Material Safety Data Sheet**

<b>Hygiene Precautions:</b>	
<b>Section 9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>Appearance:</b>	<b>Liquid. (Thick oily liquid.)</b>
<b>Odour:</b>	<b>Odorless, but has a choking odor when hot.</b>
<b>Specific Gravity:</b>	<b>1.84 (Water = 1)</b>
<b>Bulk Density:</b>	
<b>pH:</b>	<b>Acidic.</b>
<b>Solubility in Water:</b>	<b>Easily soluble in cold water. Sulfuric is soluble in water with liberation of much heat. Soluble in ethyl alcohol</b>
<b>Flash Point:</b>	
<b>Melting Point:</b>	<b>-35°C (-31°F) to 10.36 deg. C (93% to 100% purity)</b>
<b>Other Information:</b>	
<b>Section 10: STABILITY AND REACTIVITY</b>	
<b>Stability:</b>	<b>The product is stable.</b>
<b>Hazardous Decomposition Products:</b>	
<b>Conditions to Avoid:</b>	<b>Incompatible materials, excess heat, combustible material materials, organic materials, exposure to moist air or water, oxidizers, amines, bases. Always add the acid to water, never the reverse.</b>
<b>Materials to Avoid:</b>	<b>Extremely corrosive in presence of aluminum, of copper, of stainless steel(316). Highly corrosive in presence of stainless steel(304). Non-corrosive in presence of glass</b>

**Material Safety Data Sheet**

<b>Section 11: TOXICOLOGICAL INFORMATION</b>	
<b>ERMA Classification:</b>	
<b>Ingestion:</b>	<b>CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, + (Proven.) by OSHA. Classified A2 (Suspected for human.) by ACGIH.</b>
<b>Inhalation:</b>	<b>Extremely hazardous in case of inhalation (lung corrosive).</b>
<b>Skin:</b>	
<b>Eye:</b>	<b>Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive),</b>
<b>Chronic Effects:</b>	<b>Mutagenicity: Cytogenetic Analysis: Hamster, ovary = 4mmol/L Reproductive effects: May cause adverse reproductive effects based on animal data. Developmental abnormalities (musculoskeletal) in rabbits at a dose of 20 mg/m<sup>3</sup> for 7 hrs.(RTECS) Teratogenicity: neither embryotoxic, fetotoxic, nor teratogenic in mice or rabbits at inhaled doses producing some maternal toxicity</b>
<b>Other Information:</b>	
<b>Section 12: ECOLOGICAL INFORMATION</b>	
<b>ERMA Classification:</b>	
<b>Ecotoxicity:</b>	<b>Ecotoxicity in water (LC50): 49 mg/l 48 hours [bluegill/sunfish].</b>
<b>Section 13: DISPOSAL INFORMATION</b>	
<b>Product Disposal::</b>	<b>Sulfuric acid may be placed in sealed container or absorbed in vermiculite, dry sand, earth, or a similar material. It may also be</b>



# Material Safety Data Sheet

	<b>diluted and neutralized. Be sure to consult with local or regional authorities (waste regulators) prior to any disposal. Waste must be disposed of in accordance with federal, state and local environmental control regulations</b>
<b>Container Disposal:</b>	
<b>Section 14: TRANSPORT INFORMATION</b>	
<b>UN Number:</b>	<b>1830 PG: II</b>
<b>Proper Shipping Name:</b>	<b>Sulfuric acid</b>
<b>DG Class:</b>	<b>II</b>
<b>UN Packing Group:</b>	
<b>Other Information:</b>	
<b>Section 15: REGULATORY INFORMATION</b>	
<b>Illinois toxic substances disclosure to employee act: Sulfuric acid New York release reporting list: Sulfuric acid Rhode Island RTK hazardous substances: Sulfuric acid Pennsylvania RTK: Sulfuric acid Minnesota: Sulfuric acid Massachusetts RTK: Sulfuric acid New Jersey: Sulfuric acid California Director's List of Hazardous Substances (8 CCR 339): Sulfuric acid Tennessee RTK: Sulfuric acid TSCA 8(b) inventory: Sulfuric acid SARA 302/304/311/312 extremely hazardous substances: Sulfuric acid SARA 313 toxic chemical notification and release reporting: Sulfuric acid CERCLA: Hazardous substances.: Sulfuric acid: 1000 lbs. (453.6 kg)</b>	
<b>Section 16: OTHER INFORMATION</b>	