

## SAFETY DATA SHEET

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product name: 2-Butanone, Methyl Ethyl Ketone  
CAS number: 78-93-3  
Synonyms: Methyl ethyl ketone, MEK Laboratory chemicals

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses: Laboratory chemicals, Synthesis of substances.

#### 1.3 Details of the supplier of the safety data sheet

Company : Lab Alley, LLC  
22111 Highway 71 West, Suite 601  
Spicewood, Texas 78669  
U.S.A.

Telephone : 512-668-9918  
Fax : 512-886-4008

#### 1.4 Emergency telephone

**Emergency Phone #** : US & Canada: 1-800-535-5053      INFOTRAC  
International 1-352-323-3500      INFOTRAC

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2)  
Serious Eye Damage/Eye Irritation (Category 2)  
Specific target organ toxicity (single exposure) (Category 3)  
Target Organs - Central nervous system (CNS)  
Specific target organ toxicity (repeated exposure) (Category 2)  
Target Organs - Kidney, Liver

## 2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal Word:

**Danger**

Hazard statement(s):

Wash face, hands and any exposed skin thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Keep cool.

Precautionary statement(s):

**Prevention** - Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapors. Wash thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection. **Response** - Get medical attention/advice if you feel unwell. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container to an approved waste disposal plant.

### Hazards not otherwise classified

Repeated exposure may cause skin dryness or cracking.

## SECTION 3: Composition/information on ingredients

### 3.1 Components

Ingredient	CAS Number	Percent	Hazardous Chemical
Methyl ethyl ketone	78-93-3	>95%	Yes

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

**General advice:**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:**

Move to fresh air. Get medical attention if symptoms occur. If not breathing, give artificial respiration.

<b>In case of skin contact:</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
<b>In case of eye contact:</b>	Rinse immediately with plenty of water for, also under the eyelids, for at least 15 minutes. Obtain medical attention.
<b>In case of ingestion:</b>	Do not induce vomiting. Obtain medical attention.

## 4.2 Most important symptoms and effects, both acute and delayed

Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

## 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

# SECTION 5: Firefighting measures

## 5.1 Extinguishing media

**Suitable (and unsuitable) extinguishing media** CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. Water may be ineffective.

## 5.2 Specific hazards arising from the substance or mixture

This product is not flammable or combustible. Sulfuric Acid is a strong dehydrating agent, which may cause ignition of finely divided materials on contact. Sulfuric acid may react with most metals, especially when dilute, to produce extremely flammable and potentially explosive hydrogen gas which can form explosive mixtures with air. Contact between sulfuric acid and water may generate large amounts of heat. Irritating, corrosive and/or toxic gases or fumes will be released during a fire.

## 5.3 Special protective equipment and precautions for firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

## 5.4 Further information

No data available.

# SECTION 6: Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

## 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Contain and recover liquid when possible. Do not let product enter drains. Neutralize with alkaline material (soda ash, lime,) then absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

### 6.4 Reference to other sections

For disposal see Section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Do not breathe mist or vapor. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Prevent contact with eye, skin, and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Keep containers closed when not in use. When diluting, always add acid to water- not water to acid. Adding water to acid generates heat and will cause dangerous boiling and splashing.

#### Hygiene measures

No data available.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Store in a cool, dry, well ventilated location out of direct sunlight. Keep container tightly closed. Keep out of the reach of children.

## SECTION 8. Exposure controls/personal protection

### 8.1 Occupational exposure limits

Chemical Name	Exposure Limits
Sulfuric Acid	0.2 mg/m <sup>3</sup> TWA ACGIH TLV (Thoracic fraction) 1 mg/m <sup>3</sup> TWA OSHA PEL
Water	None Established

### 8.2 Exposure controls

#### Appropriate 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.

## Personal protective equipment

### Eye/face protection

Use chemical safety goggles and full face shield where splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### Respiratory protection

If the exposure limit is exceeded and engineering controls are not feasible, a full face piece respirator with an acid gas cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, Glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in Oxygen-deficient atmospheres.

### Control of environmental exposure

No data available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Physical State</b>	Liquid.
<b>Appearance</b>	Clear oily liquid.
<b>Odor</b>	Odorless
<b>Odor Thresh</b>	Not determined.
<b>pH</b>	1 N solution (ca. 5% w/w) = 0.3; 0.1 N solution (ca. 0.5% w/w) = 1.2; 0.01 N solution (ca. 0.05% w/w) = 2.1
<b>Melting Point/Range</b>	3°C (100%), -32°C (93%), -38°C (78%), -64°C (65%)
<b>Boiling Point/Range</b>	ca. 290°C (ca. 554°F) (decomposes at 340°C)
<b>Flash Point</b>	Not applicable.
<b>Evaporation Rate</b>	Not determined.
<b>Flammability (solid, gas)</b>	Not applicable
<b>Flammability or explosive limit</b>	<b>Upper</b> : NA <b>Lower</b> : NA
<b>Vapor Pressure</b>	1 @ 145.8°C (295°F)
<b>Vapor Density</b>	3.4
<b>Density</b>	1.84 g/cm <sup>3</sup> at 25 °C (77 °F)
<b>Solubility</b>	100 g/100 ml water @ 100°C (212°F). 1g/13mL cold water
<b>Partition coefficient; n-octanol/water</b>	1 @ 145.8°C (295°F)
<b>Autoignition Temp</b>	3.4
<b>Decomposition Temp</b>	1.84 g/cm <sup>3</sup> at 25 °C (77 °F)
<b>Viscosity</b>	100 g/100 ml water @ 100°C (212°F). 1g/13mL cold water
<b>Molecular Formula</b>	H <sub>2</sub> SO <sub>4</sub>
<b>Molecular Weight</b>	98.08
<b>VOC Content(%)</b>	No data available.
<b>Oxidizing properties</b>	None.

## 9.2 Other safety information

None.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable, but reacts violently with water and organic materials with evolution of heat.

### 10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur. Vigorous reactions occur when in contact with incompatible materials.

### 10.4 Conditions to avoid

Exposure to moisture and water vapor. Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals.

### 10.5 Incompatible materials

Incompatible with bases. This product may react with reducing agents. Contact with metals may evolve flammable hydrogen gas.

### 10.6 Hazardous decomposition products

Thermal decomposition may release oxides of sulfur.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Sulfuric Acid: Oral rat LD50-2140 mg/kg, Inhalation rat LC50-375 mg/m<sup>3</sup>/4hr .

#### Skin corrosion/irritation

Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

#### Serious eye damage/eye irritation

Vapors cause irritation. Splashes cause severe pain, eye damage, and permanent blindness.

#### Respiratory or skin sensitization

No data available.

#### Germ cell mutagenicity

Not expected to cause mutagenic activity.

#### Carcinogenicity

Sulfuric Acid contained in strong inorganic acid mists is listed by IARC as a Category 1 "Carcinogenic to Humans". None of the other components of this product are listed as a carcinogen or suspected carcinogen by OSHA, IARC, and NTP.

### Reproductive toxicity

Reproductive harm is not expected from this product.

### Specific target organ toxicity - single exposure

No data available.

### Specific target organ toxicity - repeated exposure

No data available.

### Aspiration hazard

Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May be fatal if swallowed and enters airways.

### Chronic effects

Prolonged inhalation may cause lung damage. Repeated exposure may cause damage to the tissues of the mucous membranes, upper respiratory tract, eyes and skin. Chronic exposure to mists containing sulfuric acid is a cancer hazard. Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this material.

## 11.2 Additional information

None.

## SECTION 12. Ecological information

### 12.1 Toxicity

#### Ecotoxicity:

Product	Species	Test Results
Sulfuric Acid:	Bluegill	16 mg/L 96 Hr LC50
	Water flea	>100 mg/L 48 Hr EC50

\*This product may be hazardous for the environment due to its low pH. Releases to the environment should be avoided.

### 12.2 Persistence and Degradability

Sulfuric acid is an inorganic compound and not subject to biodegradation.

### 12.3 Bioaccumulative Potential

No further relevant information available.

### 12.4 Mobility in Soil

This product is water soluble and will move readily in soil and water.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available.

## 12.7 Other adverse effects

None known.

## SECTION 13. Disposal considerations

### 13.1 Waste Disposal Methods

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Neutralize and flush solution into sewer connected to wastewater treatment system in compliance with applicable laws and regulations. Dispose of contents/container in accordance with local/regional/national/international regulations. Waste Corrosive material [pH  $\leq 2$  or  $\geq 12.5$ , or corrosive to steel] Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Taking into account local regulations the product may be disposed of as waste water after neutralization. Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## SECTION 14: Transport information

### DOT

<b>UN-No</b>	UN1830
<b>Proper Shipping Name</b>	Sulfuric Acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

### TDG

<b>UN-No</b>	UN1830
<b>Proper Shipping Name</b>	Sulfuric Acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

### IATA

<b>UN-No</b>	UN1830
<b>Proper Shipping Name</b>	Sulfuric Acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

### IMDG/IMO

<b>UN-No</b>	UN1830
<b>Proper Shipping Name</b>	Sulfuric Acid
<b>Hazard Class</b>	8
<b>Packing Group</b>	II



## SECTION 15: Regulatory information

### US federal regulations:

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

This product has a Reportable Quantity (RQ) of 1,052 lbs. (based on the RQ for Sulfuric Acid of 1,000 lbs present at 35-95%). Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### Hazard categories:

##### SARA 311/312

Refer to Section 2 for OSHA Hazard Classification.

**Section 313 Toxic Chemicals:** This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

#### SARA 302 Extremely hazardous substance

Sulfuric Acid (1,000 lbs)

### Other federal regulations:

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

#### Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

#### Safe Drinking Water Act (SDWA)

#### Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

SULFURIC ACID (CAS 7664-93-9) 6552

#### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

SULFURIC ACID (CAS 7664-93-9) 20 %WV

#### DEA Exempt Chemical Mixtures Code Number

SULFURIC ACID (CAS 7664-93-9) 6552

#### Food and Drug Administration (FDA)

Not regulated.

**US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** This product can expose you to chemicals including Sulfuric Acid, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### US. Massachusetts RTK - Substance List:

SULFURIC ACID (CAS 7664-93-9)

#### US. New Jersey Worker and Community Right-to-Know Act:

SULFURIC ACID (CAS 7664-93-9) 500 LBS

#### US. Pennsylvania RTK - Hazardous Substances

SULFURIC ACID (CAS 7664-93-9)

#### US. Rhode Island RTK

SULFURIC ACID (CAS 7664-93-9)

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance:** Strong inorganic acid mists containing sulfuric acid.

**International Inventories:**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

## SECTION 16: Other information

Issue Date            11/08/2019  
Revision Date        08/24/2023

**Disclaimer:**

The information provided on this Safety Data Sheet 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.