DUDA ENERGY LLC

Safety Data Sheet
Sulfuric Acid

SECTION 1: Identification

1.1 Product identifier

Product name	Sulfuric Acid
Product number	N/A
Brand	N/A
Substance name	Sulfuric acid (90-98 %)
EC no.	231-639-5
CAS no.	7664-93-9
Index no.	016-020-00-8

1.2 Other means of identification
None

1.3 Recommended use of the chemical and restrictions on use
Laboratory chemicals, synthesis of substances

1.4 Supplier's details

Name	Duda Energy LLC
Address	1112 Brooks St. Decatur, AL 35601 USA
Telephone	256.340.4866
Fax	Unavailable
email	Unavailable

1.5 Emergency phone number(s)

800.255.3924 (Chemtel)

SECTION 2: Hazard identification

General hazard statement
N/A

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)
- Corrosive to metals (chapter 2.16), Cat. 1
- Eye damage/irritation (chapter 3.3), Cat. 1
- Skin corrosion/irritation (chapter 3.2), Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary statement(s)

P234	Keep only in original container.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash … 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	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/...
P321	Specific treatment (see … on this label).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in a corrosive resistant/… container with a resistant inner liner.
P501	Dispose of contents/container to …

2.3 Other hazards which do not result in classification

None

Statement regarding ingredients of unknown toxicity

15% of the mixture consists of component(s) of unknown acute inhalation toxicity, unknown acute hazards to the aquatic environment, and unknown long-term hazards to the aquatic environment.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	Sulfuric acid (90-98 %)
EC no.	231-639-5
CAS no.	7664-93-9
Index no.	016-020-00-8
Formula	H2SO4
Molecular weight	98.07
Other names / synonyms	Sulfuric acid
Impurities and stabilizing additives	Other components below reportable levels: 2%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Consult a physician. Move out of dangerous area.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Personal protective equipment for first-aid responders	Be aware of any potential exposure to material and wear PPE accordingly.

4.2 Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result as well.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.
Chemical burns: Flush with water immediately. While flushing, remove clothes that do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Powder, foam, carbon dioxide.

5.2 Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

5.3 Special protective actions for fire-fighters
SCBA and full protective clothing must be worn.
Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

Further information
Do not use water jet as an extinguisher - this will spread the fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions
Do not let product enter drains.

6.3 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.

Reference to other sections
For Disposal see Sect.13

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Avoid release into the environment. Observe good industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities
Store locked up. Store in original, tightly closed chemical resistant container. Store in a well-ventilated place. Store away from incompatible materials.

Specific end use(s)
None other than stated in Sect.1

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Sulfuric acid (CAS: 7664-93-9)
REL (Inhalation): 1 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

2. Sulfuric acid (CAS: 7664-93-9)

PEL (Inhalation): 0.1 mg/m3, (ST) 3 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Sulfuric acid (CAS: 7664-93-9)
PEL (Inhalation): 1 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls

Good general ventilation (Typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency showers must be available in close proximity when handling this product.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Full-face chemical respirator with organic vapor cartridges.

Skin protection
Chemical resistant gloves are required. Suggested material: Fluorinated rubber (min. thickness: 0.7mm)

Body protection
Full chemical resistant suit should be worn when handling this material.

Respiratory protection
Where respirator is required as a back up to engineering controls, use multi-purpose combination cartridges.
If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards
N/A

Environmental exposure controls
Do not let product enter into drains, ditches, water ways, or onto the ground.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Liquid
Odor	No data available
Odor threshold	No data available
pH	1.2 @ 5 g/l
Melting point/freezing point	3°C
Initial boiling point and boiling range	290-338
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available

Upper/lower flammability limits	No data available
Vapor pressure	1.333 hPa @ 145.8°C
Vapor density	No data available
Relative density	1.84
Solubility(ies)	Soluble in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information
None

SECTION 10: Stability and reactivity

10.1 Reactivity
This product is stable and non-reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability
Material is stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerization does not occur.

10.4 Conditions to avoid
Contact with incompatible materials. Avoid moisture.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Hydrogen sulfide gas
Hazardous decomposition products formed under fire conditions. - Sulphur oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
(Sulfuric Acid CAS-No. 7664-93-9
LD50 Oral - Rat - 2,140 mg/kg
LC50 Inhalation - Rat - 2 h - 510 mg/m3

Skin corrosion/irritation
Skin - Rabbit (Sulfuric acid)
Result: Extremely corrosive and destructive to tissue.

Serious eye damage/irritation
Eyes - Rabbit (Sulfuric acid)
Result: Corrosive to eyes

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
The International Agency for Research on Cancer (IARC) has determined that occupational exposure to stronginorganic-acid mists containing sulfuric acid is carcinogenic to humans (group 1). (Sulfuric acid)
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a
carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Summary of evaluation of the CMR properties
Not available.

STOT-single exposure
Not classified

STOT-repeated exposure
Not classified

Aspiration hazard
No data available

Additional information
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
Symptoms of exposure include: spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects and symptoms may be delayed.
To the best of our knowledge the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Toxicity
Sulfuric Acid CAS-No. 7664-93-9
Toxicity to fish:

LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96hrs

Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (Water flea) - 29 mg/l - 24hrs

Persistence and degradability
N/A

Bioaccumulative potential
No data available

Mobility in soil
No data available

Results of PBT and vPvB assessment
N/A

Other adverse effects
No data available

SECTION 13: Disposal considerations

Disposal of the product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste
disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a
chemical incinerator equipped with an afterburner and scrubber.

Disposal of contaminated packaging
Emptied containers may still hold residual amounts of material. As such, emptied containers should be handled in disposed of in the same way as the material, adhering to all labelled warnings and applicable laws and regulations.

Waste treatment
Waste material should be gathered and stored in tightly sealed containers and taken to a licensed disposal company.

Sewage disposal
Dispose of in accordance with all applicable regulations.

Other disposal recommendations
Always dispose of hazardous materials in accordance with all applicable laws and regulations.

SECTION 14: Transport information

DOT (US)
UN Number: UN1830
Class: 8
Packing Group: II
Proper Shipping Name: Sulfuric Acid
Reportable quantity (RQ): 1020lbs

Marine pollutant: No data available
Poison inhalation hazard: No

IMDG
UN Number: UN1830
Class: 8
Packing Group:
EMS Number: F-A, S-B
Proper Shipping Name: SULPHURIC ACID

IATA
UN Number: UN1830
Class: 8
Packing Group: II
Proper Shipping Name: Sulphuric acid

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

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

Pennsylvania Right To Know Components
Chemical name: Sulfuric acid
CAS number: 7664-93-9

New Jersey Right To Know Components
Common name: SULFURIC ACID
CAS number: 7664-93-9

Massachusetts Right To Know Components
Chemical name: Sulfuric acid
CAS number: 7664-93-9

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

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

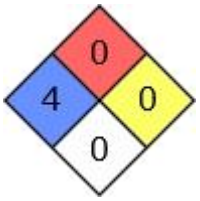
SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Sulfuric acid
CAS-No.
7664-93-9

15.2 Chemical Safety Assessment
N/A

HMIS Rating

Sulfuric acid (90-98 %)
HEALTH * 4
FLAMMABILITY 0
PHYSICAL HAZARD 0
PERSONAL PROTECTION

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

The information provided in this Safety Data Sheet is correct to the best of Duda Energy LLC's knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered 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 materials or in any process, unless specified in the text. This Safety Data Sheet only contains information relating to safety and does not replace any product information or product specification. Please note, the content may be changed, corrected, or deleted at any time without notice and may not always necessarily reflect the most current data. Duda Energy LLC will assume no responsiblity for any trouble or failure caused by the errors in the information provided, nor any damage associated with the usage of the information.

16.2 Preparation information

Version: 2
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