# MATERIAL SAFETY DATA SHEET

SDS-IAI.01-2014

## SULFURIC ACID 98 %

Revision Number : 00 Revision Date: 0/01.09.10 Issuing Date: 01.01.2014

### Section 1 - Chemical Product and Company Identification

**Product identifier**

**Product name** :**SULFURIC ACID**
**Grade** : Electrolite, 98 % Tech
**Synonyms** : Oil of vitriol, Mettling acid, Battery acid, Dipping acid, Electrolyte acid, Vitriol brown oil
**Chemical Formula** : $H_2SO_4$

**Contact** : **PT.Pancasakti Putra Kencana**
**Address** : Ruko Boulevard Taman Tekno Blok E No.10-11,BSD Sektor XI Serpong, Tangerang - Indonesia
**Website** : www.pancasakti.co.id
**Email** : sales@pancasakti.co.id
**For information** : Telp: +62-21- 7588 0205(Hunting) , fax:+62-21-7588 0198
**Emergency Telephone** : +62-21-7588 0205(Hunting)

**Manufacturer** : **PT.Indonesia Acid Industry**
**Address** : Jl.Raya bekasi KM 21,cakung Jakarta timur
**Emergency Telephone No** : 62-21-4605563

### Section 2 - Composition, Information on Ingredients

| Components | CAS-No | EC-No | EC-Index-No | Percent % |
|---|---|---|---|---|
| Sulfuric Acid | 7664-93-9 | 231-639-5 | 016-020-00-8 | min 98.0 |

### Section 3 - Hazards Identification

| NFPA 704M/HMIS RATING | | | | |
|---|---|---|---|---|
| HEALTH: 3/3 | FLAMMABILITY 0/0 | INSTABILITY 2/2 | OTHER | WATER REACTIVE |
| 0 = Insignificant | 1 = Slight | 2 = Moderate | 3 = High | 4 = Extreme |

**Health Hazard Summary** Cause severs burn to eyes, skin and all body tissues. Inhalation of mist may cause lung damage.

**Eye** Irritant. Eye contact may cause the loss of eyesight

**Inhalation** Large quantity of inhalation of vapor from heated sulfuric acid causes injury of upper respiratory passage and pulmonary tissue. Repeated inhalation of vapor or mist of sulfuric acid causes corrosive inflammation in the upper respiratory passage or bronchitis. Furthermore, the surface of the teeth may be often changed to black due to acid erosion.

**Skin** Irritant. Skin contact may cause serious medicinal injury.

**Ingestion** Toxicity. Ingestion becomes a cause of death

**GHS Label Element**

**DANGER**

**Hazard Statements :**
- ♣Extremely corrosive, causes serious burns
- ♣Harmful if swallowed or skin contact
- ♣Skin contact cause severe burn
- ♣Highly toxic
- ♣Harmful to aquatic life

**Precautionary Statements :**
- ♣Avoid contact with skin and eyes
- ♣Keep container tightly closed
- ♣Wear Protective equipment
- ♣Wash hand thoroughly after handling
- ♣Do not eat, drink or smoke when using this product
- ♣Avoid release to the environment

## Section 4 - First Aid Measures

**Eye** Must continue to flush with plenty of water for at least 15 minute, even if only a small amount goes into eyes. At that time, open the eyelid wide by a finger and wash with water so that water will spread all over the eyeball and eyelid call a physician as soon as possible. When the arrival of the physician is delayed, wash with water further for 15 minutes. Do not use oils or oily ointment without physician's instructions

**Inhalation** if over exposure occurs leave exposure area immediately. If other than minor symtomps are displayed seek immediate medical attention

**Skin** Gently flush affected areas with sodium bicarbonate 5 % solution and then flush with water. Seek medical attention if irritation develops

**Ingestion** Do not induce vomiting. If conscious, drink water or milk of magnesia, but do not give bicarbonate to neutralize. Get medical attention

## Section 5 - Firefighting Measures

**Extinguishing Media** Dry chemical, Carbon Dioxide ($CO_2$) for fire area.
Use water spray to cool containers exposed in fire ; do not get water inside containers

**Fire and Explosion Hazards** React with most metal, organic materials, nitrates, carbides, chlorates, expecially when dilute, to give flamable potentially explosive hydrogen gas

**Fire Fighting Procedures** Generates heat upon addition of water, with possible splattering. Wear full protective clothing. Runoff from fire control may cause pollution, neutralize runoff with lime, soda ash, etc to prevent corrosion of metals and formation of hydrogen gas. Wear self contained breathing apparatus if fumes or mist are present

## Section 6 - Accidental Release Measures

**Personal Precautions** Wear protective equipment to prevent skin, eye contact and respiratory equipment

**Environmental Precautions** Avoid contamining waterways

**Procedure for Cleaning** Clean up spill immediately, observing precautions in the protective equipment section. Use waterways to reduce vapors, do not put water directly on leak, spill area or inside container. Cover with dry earth, dry sand or other on combustible material followed with plastic sheet to minimize spreading and contact with water. Keep combustible (wood, paper, oil and etc) away from spilled material

## Section 7 - Handling and Storage

**Handling** Avoid skin and eye contact and breathing. Keep from contact with moist air and steam

**Storage** Store in cool place, dry place and out of direct sunlight. Store away from incompatible material described. Keep containers closed when not in use check regularly for spills. Keep away from water. Corrosive area. Do not store near alkaline substances. Store protected from moisture.

## Section 8 - Exposure Controls, Personal Protection

**Occupational exposure limits**

| | ACGIH (TLV) (TWA) | OSHA (PEL) (TWA) |
|---|---|---|
| SULPHURIC ACID | 1 $mg/m^3$ | 1 $mg/m^3$ |

**Engineering Measures** General ventilation is recommended. Use local exhaust ventilation if necessary to control airbone mist and vapor

**Routes of Exposure** Eye, skin

| | |
|---|---|
| **Effect of short-term exposure** | Corrosive. The substance is very corrosive to the eye, the skin and the respiratory tract. |
| **Personal Protective Equipment** | Respiratory Protection: Avoid generating and inhaling always wear respirator when necessary.<br>Hand Protection: Chemical resistant gloves<br>Eye Protection: Wear safety glasses with side shields or chemical goggles and a full-face shield<br>Skin, and body protection: Suitable safety clothes and shoes |

## Section 9 - Physical and Chemical Properties

| | |
|---|---|
| **Appearance** | liquid |
| **Color** | Colorless to light grey |
| **Odor** | Odorless |
| **pH** | < 1 |
| **Specific Gravity** | 1.8 |
| **Decomposition Temperature** | $340^{o}$ C |
| **Vapour Density** | Not applicable |
| **Boiling Point** | $327^{o}$C |
| **Melting Point** | $10^{o}$C |
| **Freezing Point** | $1.1^{o}$C |
| **Solubility in water** | Solubility with much heat (exothermic) |
| **Evaporation Rate** | Slower than ether |
| **Vapour Pressure** | < 0.3 mmHg at $20^{0}$C |

## Section 10 - Stability and Reactivity

| | |
|---|---|
| **Chemical Stability** | Stable, but react with many chemicals |
| **Polymerization** | Will not occur |
| **Conditions to Avoid** | Incompatibles materials, ignition sources, metals, excess heat, combustible materials, organic materials, reducing agents, exposure to water, oxidizers, amines. |
| **Incompatible Materials** | Contact with strong alkalis (e.g. ammonia and its solutions, carbonates, sodium hydroxide, potassium hydroxide, calcium hydroxide, cyanide, sulfide, hypochlorite, chlorites) may generate heat, splattering or boiling and toxic vapors.Contact with reactive metals (e.g. aluminum) may result in the generation of flammable hydrogen gas. Water or water vapor |
| **Hazardous Decomposition products** | Release oxides of sulfur at extremely high temperatures |

## Section 11 - Toxicological Information

| | | |
|---|---|---|
| **Acute Toxicity** | | |
| **Oral** | mouse $LD_{50}$: 2140 mg/kg | Rating : Non-Hazardous |
| **Dermal** | Rabbit $LD_{50}$: 250 x 10-6 mg/kg | Rating : Extremely irritating (corrosive) |
| **Inhalation** | Rat $LC_{50}$: 0.361 mg/l | Rating : Very Toxic |
| | Mouse $LC_{50}$: 0.226 mg/l | |

**Carcinogenicity** None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists(ACGIH).

**Human Hazard characterization** Based on our hazard characterization, the potential human hazard is : High

## Section 12 - Ecological Information

| | Species | Exposure | LC50 | Rating |
|---|---|---|---|---|
| **Acute Fish Result** | Inland Siverside | 96 hrs | > 5,000 mg/l | Essentially non -toxic |
| **Acute Invertebrate Result** | Mysid Shrimp | 96 hrs | > 5,000 mg/l | Essentially non -toxic |

**Environmental Hazard and exposure characterization** Based on our hazard characterization, the potential environmental hazard is : Moderate

## Section 13 - Disposal Considerations

**Waste Disposal** Comply with federal, state and local regulation on reporting releases. If approved, neutralize and transfer to waste treatment system.

## Section 14 - Transport Information

| | | |
|---|---|---|
| **Road & Rail** | **UNRTDG** | **UN Classification Number :**<br>**Proper shipping name : Sulfuric Acid**<br>**UN Class : 8 (corrosive substances)**<br>**UN number : 1830**<br>**Packing group : II (medium danger)** |
| **Air** | **IATA** | **Proper shipping name : Sulfuric Acid**<br>**UN/ID no : UN 1830**<br>**Hazard Class : 8**<br>**Packing group : II (medium danger)**<br>**IATA cargo Packing Intruction : 813** |
| **Sea** | **IMDG** | **Proper shipping name : Sulfuric Acid**<br>**UN/ID no : UN 1830**<br>**Hazard Class : 8**<br>**Packing group : II (medium danger)** |

## Section 15 - Regulatory Information

**National Regulation, USA**

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910,1200 :Based on our hazard evaluation, the following substance in this product is hazardous and the reason is shown below.Sulfuric Acid : Corrosive

SARA (Superfund Amendments and Reauthorization Act of 1986 (Title III) section 313 –List of Toxic Chemical 40 CFR 372:This product contains the following substance which appear on the list of Toxic Chemical

| Hazardous substance | CAS No. | % (w/w) |
|---|---|---|
| SulfuricAcid | 7664-93-9 | 60.0 –100.0 |

## Section 16 - Additional Information

References

Purple Book Rev.3, 2009
UNRTDG Orange Books 14th edition
Dangerous Properties of Material 6thedition, N.Irving Sach, March 1987
Hazardous Material in Industry 12thedition
CERI, Japan / NITE ; Hazard Evaluation Report
CERI, Japan ; Chemical Substance Safety (Hazard) Data

*his Information contained herein is based on the present state of our knowledge.It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.*