

## 1. Product Identification.

Product Name: Battery Acid.  
Chemical Name: Sulphuric Acid.  
Synonyms, Trade Name: Vitriol.

## 2. Composition/ Information on Ingredients.

Ingredient Name: Sulphuric Acid.  
EEC No.: 231-639-5  
CAS No.: 7664-93-9  
Class: C  
Risk Phrase Nos.: R 35

## 3. Hazards Identification.

Health Hazards: Corrosive liquid, which causes severe burns to all body parts. Its vapours are also very corrosive to eyes, throat and respiratory tract.

Environmental Hazards: Toxic to fish and algae.

## 4. First Aid Measures.

Eye Contact: Immediately flood the eyes with large quantities of clean water ensuring the lids are kept open for 15 minutes and adequately flushed. Obtain medical attention urgently.

Skin Contact: Rinse thoroughly with water under a shower, remove contaminated clothing and wash affected areas. Obtain medical attention.

Inhalation: Remove to fresh air. Keep warm and at rest. If there is respiratory distress, give oxygen by trained person. If respiration stops or shows signs of failure, apply artificial respiration,


Ingestion: Do not induce vomiting. Wash out mouth with water and give plenty of water to drink. Obtain medical attention.

**N.B.: Speed Is Essential In All Cases Of Exposure.**

## 5. Fire Fighting Measures.

Material is non flammable.

Extinguishing Media: Powder, water, foam, carbon dioxide.



Unusual Hazard: In contact with metals, the highly flammable hydrogen gas may be released.

Fire Fighting Equipment: Wear self-contained breathing apparatus and protective suit.

**6. Accidental Release Measures.**

Spill Clean Up Methods: Personnel involved in clean up should wear full protective equipment and clothing. See section 8.

Small Spillage: Flood with copious quantities of water. See section 10.

Large Spillage: Keep unauthorised personnel away from area. Contain spillage using earth, sand or vermiculite, pump into an emergency tank. Spread soda ash or crushed limestone over the area and sweep up into containers. Repeat. Wash down area with water. Dispose of containers and sulphuric acid if necessary using licensed waste disposal contractors. Collect and treat all water used in the clean up-operations (see section 13). Inform emergency services and local authority

**7. Handling & Storage.**

Usage Precautions: Provide safety showers and eyebaths where accidental exposure is possible. Smoking should be prohibited when handling sulphuric acid. When diluting sulphuric acid always add acid to water, slowly and with continual stirring.

Storage Precautions: Store sulphuric acid away from reactive materials in tightly closed containers. Protect from damage and keep in a well-ventilated, dry storage area. Protect from weather and direct sunshine. For concentrations greater than 96% some precautions against freezing may be necessary. Keep out of reach of children.

Storage Materials: Most common metals are unsuitable and will be corroded if the acid is weak (<70%). Mild and stainless steel are suitable if acid is (>70%). Other materials that are suitable are PFTE, glass PVC composites, HDPE and certain plastics and rubbers.

**8. Exposure Controls/ Personal Protection.**

Exposure Controls: Sulphuric Acid EH40/93 1 mg/m<sup>3</sup>.

Personal Protection:



Ventilation:	Provides local exhaust to ensure vapour concentrations are below Occupational Exposure levels.
Respirators:	Full B.A Equipment if there is a risk of exposure to fumes.
Eye Protection:	Chemical grade goggles as full-face shield.
Hand Protection:	PVC grade protective gloves.
Other Protection:	Acid resistant boots and PVC suit.

**9. Physical and Chemical Properties.**


(a) Appearance:	Colourless to dark brown liquid.
(b) Odour:	Acrid.
(c) Solubility:	Completely miscible with water but exothermic.
(d) Relative Density (Water=1):	1.5
(e) Molecular Weight:	98.07 (H <sub>2</sub> SO <sub>4</sub> ).

**10. Stability & Reactivity.**

Stability:	Stable if stored correctly.
Materials to Avoid:	Water, acids, bases, oxidising agents, chlorine oxyacid salts, hydrogen peroxide and permanganates. Toxic fumes may occur. Dangerous reactions with aldehydes, ketones, halocarbons, nitrocompounds, cyanides, phosphorus (111) oxide.
Conditions to Avoid:	Poor storage conditions (see section 7). Floors should be made of acid resistant materials.
Hazardous Decomposition Products:	Sulphuric acid has the potential to decompose to give sulphur trioxide gas. Sulphuric acid reacts with many metals, giving off highly flammable hydrogen gas.

**11. Toxicological Information.**

Effect of Substance:	
Eye Contact:	Liquid; severe burns and tissue destruction. Mist or fume; irritation or burns at high concentration.
Skin Contact:	Liquid; severe burns and tissue destruction. Mist or fume; irritation may cause burns at high concentrations.
Skin Absorption:	No systemic effects.
Ingestion:	Severe corrosion of the mouth, throat and digestive tract.



Inhalation (Acute Effect): Exposure to the mist or fume at concentrations much above the OEL causes moderate to severe irritation of the nose, throat and upper respiratory tract. High concentrations may cause immediate respiratory difficulty and serious damage to lung tissue.

Inhalation (Chronic Effect): Prolonged or repeated exposure to mists may cause dental erosion, chronic inflammation of the upper respiratory tract, bronchitis or lung damage. The WHO International Agency for Research on Cancer (IARC) have concluded that occupational exposure to strong inorganic mists containing sulphuric acid is carcinogenic to man. Although no direct link has been established between sulphuric acid and the frequency of cancer in man it is advisable to minimise exposure to any mist or aerosol during the use of sulphuric acid and if it cannot be avoided it should be kept below the O.E.S.

## 12. Ecological Information.

Mobility: Extremely soluble in water at all concentrations.  
Persistence & Degradability: Degrades in lime and basic soils.  
Aquatic Toxicity: Toxic to fish and algae. Concentrations greater than 1-2mg/l as may be lethal to fish. Lowering pH below about 5 could induce fatalities in aquatic life.

## 13. Disposal Considerations.

It is readily neutralised by first diluting the acid with water. Care: Add acid slowly to large excess of water. Wear personal protective equipment. Then neutralise with lime or caustics to pH 6-8 by experienced personnel and allowed to run to drain excess water, subject to approval by local authority regulations.

## 14. Transport Information.

UN No.: 1830  
UN Class: 8  
ADR/ RID: Class 8 - 1(b).  
Symbol: Corrosive Substances.  
Tremcard: 10A/806 - 06 (<75%).

## 15. Regulatory Information.

EC Label for Supply: Sulphuric Acid (Corrosive).  
Risk Phrases: R 35 Causes burns.  
Safety Phrases: S 2 Keep out of the reach of children.



- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 30 Never add water to this product.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately. (Show the label where possible).

## References:

1. EC Directives 67/548; and 88/379/EEC.
2. Safety Health and Welfare at Work Act 1989.
3. Safety Health and Welfare at Work (General Applications) 1993.
4. CPL Regulations 1994 (S.I. No. 77 of 1994).
5. HSE Occupational Exposure Limits EH40/93.

**16. Other Information.**

Information contained in this publication, while accurate to the best knowledge and belief of Carbon Group, is not intended and should not be construed as a warranty or representation for which Carbon Group assumes any legal responsibility.

Any information or advice obtained from Carbon Group otherwise than by means of this publication and whether relating to Carbon Group materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Carbon Group materials are suitable for the particular purpose intended.

Insofar as materials not manufactured or supplied by Carbon Group are used with or instead of Carbon Group material, the customer should ensure that he has received from the manufacturer or supplier all technical data and other information relating to such materials.

Carbon Group accepts no liability whatsoever (except as otherwise expressly provided by law) arising out of the use of the information supplied, the application, adaptation or processing of the products described herein, the use of other materials in lieu of Carbon Group materials or the use of Carbon Group materials in conjunction with other materials.

**Supplier:**

**Carbon Group,  
Ringaskiddy,  
Co. Cork.**

**Tel : 021 - 4378988**

**Fax: 021 - 4378950**

