

SAFETY DATA SHEET

1. Identification of the substance/preparation and of the company/undertaking

1.1 Product Identifier Sulphuric Acid / pH Minus Liquid / Granudos Acid

1.2 Relevant Identified uses of the substance or mixture and uses advised against

Uses: See table in front of appendix for a complete overview of identified uses.

Restrictions: At this time we do not yet have information on identified restrictions

1.3 Details of the supplier of the safety data sheet

Company: Complete Pool Controls Ltd
Unit 2, The Park
Stoke Orchard
Bishops Cleeve
Gloucestershire
GL52 7RS

Telephone: +44 (0) 8712 229081

Fax: +44 (0) 8712 229083

E-mail: sales@cpc-chemicals.co.uk

1.4 Emergency Telephone

Tel: +44 (0) 8712 229081 (office hours) +44 (0) 1242 300271 (outside of office hours)

2. Hazard Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

| Hazard Class | Hazard Category | Target Organs | Hazard Statements |
|---------------------|-----------------|---------------|-------------------|
| Corrosive to Metals | Category 1 | | H290 |
| Skin Corrosion | Category 1A | | H314 |

For the full text of the H statements mentioned in this section see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

| Hazard Symbol/Category of danger | Risk phrases |
|----------------------------------|--------------|
| Corrosive (C) | R35 |

For the full text of the R phrases mentioned in this section see Section 16.

Most important adverse effects

Human Health: See section 11 for toxicological information.

Physical & Chemical Hazards: See section 9 for toxicological information.

Potential environmental effects: See section 12 for toxicological information.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols:



Signal word: Danger

| | | |
|--------------------|------|---|
| Hazard statements: | H290 | May be corrosive to metals |
| | H314 | Causes severe skin burns and eye damage |

Precautionary statements:

| | | |
|------------|------|--|
| Prevention | P280 | Wear protective gloves/protective clothing/eye protection/ face protection |
| | P260 | Do not breath dust/fume/gas/mist/vapours/spray |

(continued on Page 2)

Trade Name: Granudos Acid

2. Hazard Identification...cont

Response P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair):Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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 centre / doctor

Storage P405 Store locked up.

Hazardous components which must be listed on the label sulphuric acid

2.3 Other Hazards For Results of PBT and vPvB assessment see section 12.5.

3. Composition/information on ingredients

3.1 Substances

Chemical nature: Aqueous solution

Hazardous components

Sulphuric acid

Index-No. 016-020-00-8

CAS-No. 7664-93-9

EC-No. 231-639-5

Registration 01-2119458838-20-xxxx

C & L No 02-2119752444-38-0000

Amount %

>=15 - < 50

Hazard

Skin Corr.1A

H314

Corrosive; C; R35

4. First Aid measures

4.1 Description of first aid measures

General Advice: Take off all contaminated clothing immediately.

If inhaled: : In case of accident by inhalation: remove casualty to fresh air and keep at rest. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

In case of skin contact: First swab the concentrated acid with dry pulp or textile; because the acid reacts vigorously with water and the strong evolution of heat. Wash off with plenty of water. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if necessary.

If swallowed: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: See Section 11 for more detailed information on health effects and symptoms

Effects: See Section 11 for more detailed information on health effects and symptoms

4.3 Indication of immediate medical attention and special treatment needed

Treatment Treat Symptomatically.

Trade Name: Granudos Acid

5. Fire fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Use extinguishing measures that are appropriate and local circumstances and the surrounding environment. This product itself does not burn

Unsuitable extinguishing media: Water

5.2 Special hazards arising from the substance or mixture

Specific Hazards during fire fighting: May decompose in a fire giving off toxic fumes, Hazardous decomposition products, Sulphur oxides, Reacts exothermic with water.

5.3 Advice for fire-fighters

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit).

Further Information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Cool closed containers exposed to fire with water

6. Accidental release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions: Use personal protective equipment. Provide adequate ventilation. Avoid contact with skin and eyes. Do not breath vapours or spray mist. For personal protection see section 8.

6.2 Environmental precautions

Environmental precautions: Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up: Neutralize with soda and flush with plenty of water. Taking into account local regulations the product may be disposed of as waste water after neutralisation. Clean-up methods - small spillage: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) Keep in suitable, closed containers for disposal.

Further information: Treat recovered material as described in the section "Disposal considerations"

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Keep container tightly closed. Use personal protective equipment. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist. Emergency eye wash fountains should be available in the immediate vicinity.

7. Handling and storage continued

| | |
|--------------------------|---|
| Advice on safe handling: | When diluting, always add the product to water. Never add water to the product |
| Hygiene measures: | Keep away from food, drink and animal feeding stuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Avoid contact with skin, eye and clothing. |

7.2 Conditions for safe storage, including any incompatibilities.

| | |
|--|---|
| Requirements for storage areas and containers: | Keep in an area equipped with acid resistant flooring. Store in original container |
| Advice on protection against fire and explosion: | The product is not flammable. Normal measures for preventive fire protection. Gives off hydrogen by reaction with metals. Risk of explosion |
| Further information on storage conditions: | Keep tightly closed in a dry and cool place. Keep in a well ventilated place. Product is hygroscopic. |
| Advice on common storage: | Keep away from food, drink and animal feeding stuffs. Keep away from combustible material. |

7.3 Specific end uses No information is available.

8. Exposure control/personal protection**8.1 Control parameters**

Components with critical values that require monitoring at the workplace: Observe all workplace limits for dust.

| | | |
|--|--------------------------|------------------------|
| Sulphuric Acid | 7664-93-9 | |
| Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL) | | |
| Workers, Acute - Local effects, Inhalation | | 0.1 mg/m ³ |
| Workers, Long Term - Local effects, Inhalation | | 0.05 mg/m ³ |
| Predicted No Effect Concentration (PNEC) | | |
| Fresh water | | 0.0025 mg/l |
| Marine sediment | | 0.0025 mg/l |
| Fresh water sediment | | 0.002 mg/kg |
| Marine sediment | | 0.002 mg/kg |
| Sewage Treatment Plant (STP) | | 8.8 mg/l |
| Other Occupational Exposure Limit Values | | |
| EU ELV, Time Weighted Average (TWA):, Mist. | Indicative | 0.05 mg/m ³ |
| EH40 WEL, Time Weighted Average (TWA): | Mist. Thoracic fraction. | 0.05 mg/m ³ |
| ELV (IE), Time Weighted Average (TWA):, Mist. | Indicative OELV | 0.05 mg/m ³ |

8.2 Exposure controls

Engineering measures Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

| | |
|------------------------|---|
| Respiratory protection | Required if vapours or aerosol are released. Recommended Filter type: Combination filter: E-P2 |
| Hand protection | Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374. |

Continued on Page 5

8. Exposure control/personal protection

| | |
|--------------------------|---|
| Hand protection | The following materials are suitable |
| | Material: Gloves: Glove thickness: |
| | Fluorinated rubber. >= 8 h 0.5 mm |
| | butyl-rubber >= 2 h 0.5 mm |
| Eye protection | Tightly fitting safety goggles approved to standard EN 166. Provide eye station |
| Skin and body protection | Acid resistant protective clothing. |

Environmental exposure controls

| | |
|-----------------|---|
| General advice: | Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration If the product contaminates rivers and lakes or drains inform respective authorities Local authorities should be advised if significant spillages cannot be contained |
|-----------------|---|

9. Physical and chemical properties**9.1 Information on basic physical and chemical properties**

| | |
|--|-------------------------------|
| Form: | Liquid |
| Colour: | colourless or slight coloured |
| Odour: | odourless |
| Odour Threshold: | No data available |
| pH @ 20°C: | ca. 1 (5 g/l; 20 °C) |
| Solidification point | ca. -40°C |
| Boiling point/boiling range: | ca.120°C |
| Flash point: | Not applicable |
| Evaporation rate: | No data available |
| Flammability (solid, gas) | The product is not flammable. |
| Upper explosion limit: | Not applicable |
| Lower explosion limit: | Not applicable |
| Vapour pressure: | No data available |
| Relative vapour density: | 3.4 |
| Density @ 20°C: | ca. 1.3 g/cm ³ |
| Water solubility: | completely miscible. |
| Partition coefficient:n-octanol/water: | No data available |
| Ignition temperature: | Not applicable |
| Thermal decomposition: | Decomposes on heating. |
| Viscosity, kinematic: | No data available |
| Explosive properties: | Product is not explosive. |
| Oxidising properties: | No data available |

9.2 Other Information

| | |
|---------------------|---------------------|
| Molecular weight | 98.1 g/mol |
| Corrosion to metals | Corrosive to metals |

10. Stability and reactivity

| | |
|--|---|
| 10.1 Reactivity | No information available. |
| 10.2 Chemical stability | Stable under normal conditions |
| 10.3 Possibility of hazardous reactions | |
| Hazardous reactions: | Gives off hydrogen by reaction with metals. Reacts exothermic with water. |
| 10.4 Conditions to avoid | No information available. |
| 10.5 Incompatible materials | Organic materials, Bases, Reducing agents, Metals |
| 10.6 Hazardous decomposition products | |
| Hazardous decomposition products: | Sulphur oxides Stable under recommended storage conditions. |

11. Toxicological Information**11.1 Information on toxicological effects****Acute Toxicity**

Oral: The substance or mixture is not classified
 Inhalation: The substance or mixture is not classified
 Dermal: The substance or mixture is not classified

Irritation Skin: Very corrosive (rabbit)
 Eyes: Very corrosive (rabbit) Risk of serious damage to eyes

Sensitisation: Did not cause sensitisation on laboratory animals

CMR Properties

Carcinogenicity No data available
 Mutagenicity No data available
 Teratogenicity Did not show teratogenic effects in animal experiments
 Reproductive toxicity Animal testing did not show any effects on fertility.

Specific Target Organ Toxicity

Single exposure The substance or mixture is not classified as specific target organ toxicant, single exposure.

Repeated Exposure The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration Hazard No aspiration toxicity classification

Further information If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute Toxicity

| Sulphuric Acid | | | | |
|----------------|---------|------|-------|-------|
| Route | Species | Test | Value | Units |
| Oral | Rat | LD50 | 2140 | mg/kg |

12. Ecological Information**12.1 Toxicity**

Component: Sulphuric Acid

CAS No: 7664-93-9

| Species | Test | Value | Time | Units |
|------------------|------|-------|-------|--------|
| Gambusia affinis | LC50 | 42 | 96 h | mg / l |
| Daphnia magna | EC50 | 29 | 24 h | mg / l |
| activated sludge | EC50 | 58 | 120 h | mg / l |

12.2 Persistence and degradability

Persistence: No data available

Biodegradability: The methods for determining the biological degradability are not applicable for inorganic substances.

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil No data available

12.5 Results of PBT and PvB assessment Not applicable

Trade Name: Granudos Acid

12. Ecological Information

12.6 Other adverse effects

Remarks: All numerical values for etotoxicity effects are calculated on the pure substances
Harmful effects to aquatic organisms due to pH shift
Neutralization is normally necessary before waste water is discharged into water treatment plants.
Do not flush into surface water or sanitary sewer system

13. Disposal Considerations

13.1 Waste treatment methods

Product: Disposal together with normal waste is not allowed. Special disposal is required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging: Empty contaminated packaging thoroughly. They can be re-cycled after thorough and proper cleaning. Packaging that cannot be cleaned is to be disposed of in the same manner as the product

European Waste Catalogue No: No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

14. Transport Information

14.1 UN Number 2796

14.2 UN proper shipping name SULPHURIC ACID

14.3 Transport hazard class(es)

| | |
|---------------------|----------|
| Class | 8 |
| Classification Code | C1 |
| Hazard label | 8 |
| Transport Category | 80 |
| Tunnel Code | E |
| EMS | F-A, S-B |

14.4 Packaging Group II

14.5 Environmental hazards

| | |
|---|----|
| Classified as environmentally hazardous: ADR | No |
| Labeling according to 5.2.1.8 RID | No |
| Labeling according to 5.2.1.6.3 IMDG | No |
| Classification as environmentally hazardous according to 2.9.3 IMDG | No |
| Classified as "P" according to 2.10 IMDG | No |

14.6 Special precautions for user

Note: Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG: Not applicable

15. Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for this substance or mixture.****Sulphuric acid:**

| Regulatory List | Notification | Notification No |
|-----------------|--------------|-----------------|
| AICS | YES | |
| DSL | YES | |
| INV (CN) | YES | |
| ENCS (JP) | YES | (1) - 430 |
| ISHL (JP) | YES | (1) - 430 |
| TSCA | YES | |
| EINECS | YES | 231-639-5 |
| KECI (KR) | YES | 97-1-405 |
| KECI (KR) | YES | KE-32570 |
| PICCS (PH) | YES | |

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance

16. Other information

Full text of R-phrases referred to under sections 2 and 3
R35 Causes severe burns

Full text of H-statements referred to under sections 2 and 3
H290 May be corrosive to metals
H314 Causes severe skin burns and eye damage

Further information

Restricted to professional users. Attention - Avoid exposure- obtain special instructions before use

This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty or merchantability, or fitness for any particular use, or any other warranty, express or implied, with respect to this information, and we assume no liability resulting from use of this information. Users should make their own investigations to determine the suitability of the information for their particular needs and uses.

• Abbreviations and acronyms:

| | |
|----------|---|
| ADR: | Accord europeen sur le transport des marchandises dangereuse par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| RID: | Reglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International Carriage of Dangerous Goods by Road) |
| IMDG: | International Maritime Code for Dangerous Goods |
| IATA: | International Air Transport Association |
| IATA-DGR | Dangerous goods Regulations by the 'International Air Transport Association' (IATA) |
| ICAO: | International Civil Aviation Organization |
| GHS: | Globally Harmonized System of Classification and Labelling of Chemicals |
| EINECS | European Inventory of Existing Commercial Chemical Substances. |
| CAS: | Chemicals Abstracts Service (division of the American Chemical Society) |
| LC50: | Lethal concentration, 50 percent |
| LD50: | Lethal dose, 50 percent |

█ Indicates updated section

Trade Name: Granudos Acid

| No. | Short title | Main User Group (SU) | Sector of Use (SU) | Product Category (PC) | Process Category (PROC) | Environmental Release Category (ERC) | Specified |
|-----|--|----------------------|------------------------|-----------------------|---------------------------|--------------------------------------|-----------|
| 1 | Use as an intermediate | 3 | 4, 6b, 8, 9, 14 | 19 | 1, 2, 3, 4, 8a, 8b, 9 | 6a | ES679 |
| 2 | Formulation & (re)packing of substances and mixtures | 3 | 10 | NA | 1, 3, 5, 8a, 8b, 9 | 2 | ES689 |
| 3 | Use in laboratories | 22 | NA | 21 | 15 | 8a, 8b | ES906 |
| 4 | Use for extractions and processing of minerals, ores | 3 | 2a, 14 | 20, 40 | 2, 3, 4 | 4, 6b | ES784 |
| 5 | Use as processing aid | 3 | 4, 5, 6b, 8, 9, 11, 23 | 20 | 1, 2, 3, 4, 8a, 8b, 9, 13 | 6b | ES782 |
| 6 | Use in electrolytic processes | 3 | 14, 15, 17 | 14, 20 | 1, 2, 8b, 9, 13 | 5, 6b | ES788 |
| 7 | Use in the process of surface treatments, purification and etching | 3 | 2a, 14, 15, 16 | 14, 15 | 1, 2, 3, 4, 8a, 8b, 9, 13 | 6b | ES786 |
| 8 | Use in gas treatment | 3 | 8 | 20 | 1, 2, 8b | 7 | ES790 |
| 9 | Use in production of sulphuric acid contained batteries | 3 | NA | NA | 2, 3, 4, 9 | 2, 5 | ES792 |
| 10 | Use in recycling of sulphuric acid contained batteries | 3 | NA | NA | 2, 4, 5, 8a | 1 | ES794 |
| 11 | Use in maintenance of sulphuric acid contained batteries | 22 | NA | NA | 19 | 8b, 9b | ES798 |

For exposure scenarios and further information please contact Complete Pool Controls