According to Regulation (EC) No 1907/2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME  PERCHLORIC ACID 0.1M IN GLACIAL ACETIC ACID
SUPPLIER  Reagent Chemical Services
Whitehouse Industrial Estate
Runcorn
Cheshire WA7 3DL
T: 01928 716903
F: 01928 716425
E: info@reagent.co.uk
PRODUCT NO. 1060
APPLICATION  General chemical reagent
EMERGENCY TELEPHONE  Emergency Telephone : +44 (0) 1928 716903  Between 08.30 - 17.00

2 HAZARDS IDENTIFICATION

Flammable. Causes severe burns.

3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>EC No.</th>
<th>CAS-No.</th>
<th>Content</th>
<th>Classification (67/548)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETIC ACID ...%</td>
<td>200-580-7</td>
<td>64-19-7</td>
<td>60-100%</td>
<td>R10 C;R35</td>
</tr>
<tr>
<td>PERCHLORIC ACID ...%</td>
<td>231-512-4</td>
<td>7601-90-3</td>
<td>1-5%</td>
<td>R5 O;R8 C;R35</td>
</tr>
</tbody>
</table>

The Full Text for all R-Phrases are Displayed in Section 16

4 FIRST-AID MEASURES

INHALATION
Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Get medical attention if any discomfort continues.

INGESTION
Do not induce vomiting. Immediately rinse mouth and drink plenty of water. Get medical attention immediately!

SKIN CONTACT
Immediately remove contaminated clothing and wash before re-use. Rinse the skin immediately with lots of water. Get medical attention immediately.

EYE CONTACT
May cause permanent damage if eye is not immediately irrigated. Promptly wash eyes with plenty of water or eye wash solution while lifting the eyelids. If possible remove any contact lenses and continue to wash. Get medical attention immediately.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Water spray, dry powder or vaporising liquids

UNUSUAL FIRE & EXPLOSION HAZARDS
FLAMMABLE. Forms explosive mixtures with air. Vapours are heavier than air and may spread near ground to sources of ignition.

SPECIFIC HAZARDS
By heating and fire, toxic and corrosive vapours/gases may be formed.

PROTECTIVE MEASURES IN FIRE
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES
PERSONAL PRECAUTIONS
Wear protective clothing as described in Section 8 of this safety data sheet.

SPILL CLEAN UP METHODS
Remove sources of ignition. Small Spillages: Absorb with inert, non-combustible material. Large Spillages: Dam and absorb spillages with sand, earth or other inert, non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Wash spillage site well with water and detergent, be aware of the potential for surfaces to become slippery. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Ventilate well. Wash thoroughly after dealing with a spillage.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS
Avoid spilling, skin and eye contact. Static electricity and formation of sparks must be prevented. Eliminate all sources of ignition.

STORAGE PRECAUTIONS
Flammable/combustible - Keep away from oxidisers, heat and flames. Store in tightly closed original container in a dry and cool place.

STORAGE CLASS
Corrosive storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS
The OES for acetic acid has been withdrawn by the HSE. The quoted value is for guidance only.

ENGINEERING MEASURES
Provide adequate ventilation including appropriate local extraction to maintain airborne concentrations at a low level. Explosion-proof general and local exhaust ventilation.

RESPIRATORY EQUIPMENT
In case of inadequate ventilation use suitable respirator.

HAND PROTECTION
Use full length gloves. Use protective gloves made of: Butyl rubber. Viton rubber (fluor rubber). Polyethylene/Ethylene Vinyl Alcohol (PE/EVAL). Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION
Wear goggles/face shield.

OTHER PROTECTION
Wear suitable protective clothing as protection against splashing or contamination. Provide eyewash station and safety shower.

HYGIENE MEASURES
DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes wet or contaminated. Wash promptly if skin becomes wet or contaminated. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Liquid
COLOUR Colourless
ODOUR Acetic acid
SOLUBILITY Miscible with water

BOILING POINT (°C) ~118
pH-VALUE, CONC. SOLUTION <1
RELATIVE DENSITY 1.05
FLASH POINT (°C) 40
FLAMMABILITY LIMIT - LOWER(%) 4
FLAMMABILITY LIMIT - UPPER(%) 16

10 STABILITY AND REACTIVITY

STABILITY
Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID
Avoid heat, flames and other sources of ignition.

MATERIALS TO AVOID

11 TOXICOLOGICAL INFORMATION

INHALATION
Irritating to respiratory system. May cause oedemas in the respiratory tract.
PERCHLORIC ACID 0.1M IN GLACIAL ACETIC ACID

INGESTION
May cause chemical burns in mouth, oesophagus and stomach. May cause perforation in the oesophagus and stomach.

SKIN CONTACT
Causes severe burns.

EYE CONTACT
Strongly corrosive. Causes severe burns and serious eye damage. Immediate first aid is imperative.

12 ECOLOGICAL INFORMATION

ECOTOXICITY
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

UK ROAD CLASS 8
PROPER SHIPPING NAME CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ACETIC ACID, PERCHLORIC ACID
UN NO. ROAD 2920 UK ROAD PACK GR. II
ADR CLASS NO. 8 ADR CLASS Class 8: Corrosive substances.
ADR PACK GROUP II HAZARD No. (ADR) 83
ADR LABEL NO. 8 & 3 HAZCHEM CODE 2W
CEFIC TEC(R) NO. 80GCF1-II RID CLASS NO. 8
RID PACK GROUP II UN NO. SEA 2920
IMDG CLASS 8 IMDG PAGE NO. 8 & 3
IMDG PACK GR. II EMS F-E, S-C
MFAG See Guide MARINE POLLUTANT No.
UN NO. AIR 2920 AIR CLASS 8
AIR SUB CLASS 3 AIR PACK GR. II

15 REGULATORY INFORMATION

LABELLING

Corrosive

CONTAINS
ACETIC ACID 98.5%
Peroxidic ACID 1.4%

RISK PHRASES
R10 Flammable.
R35 Causes severe burns.

SAFETY PHRASES
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
S51 Use only in well-ventilated areas.
S24/25 Avoid contact with skin and eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
PERCHLORIC ACID 0.1M IN GLACIAL ACETIC ACID

S60 This material and its container must be disposed of as hazardous waste.

UK REGULATORY REFERENCES

STATUTORY INSTRUMENTS
Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

APPROVED CODE OF PRACTICE
Classification and Labelling of Substances and Preparations Dangerous for Supply. COSHH essentials: Easy steps to control chemicals.
Control of Substances Hazardous to Health Regulations.

GUIDANCE NOTES
Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37.

NATIONAL REGULATIONS
Control of Substances Hazardous to Health Regulations 2002 (as amended)

16 OTHER INFORMATION

GENERAL INFORMATION
Under REACH Material Safety Datasheets (MSDS) are referred to as Safety Datasheets (SDS).

REVISION COMMENTS
Change to section 7. Change to section 1

REVISION DATE 25/09/2008
REV. NO./REPL. SDS GENERATED 1
SDS NO. 10017

RISK PHRASES IN FULL
R35 Causes severe burns.
R8 Contact with combustible material may cause fire.
R10 Flammable.
R5 Heating may cause an explosion.