Section 1. Identification

1.1 Product Identifier 00156208

Product Name COMBINED ACID BUFFER

CAS Number Mixture

REACH Registration No Not applicable

1.2 Relevant identified uses of the substance or mixture & uses advised against

Uses of Material Chemical for industrial and laboratory use. Not suitable for domestic use.

1.3 Supplier Sherwood Scientific Ltd

1 The Paddocks
Cherry Hinton Road
Cambridge
CB1 8DH
UNITED KINGDOM

Phone +44(0)1223 243444
Fax +44(0)1223 243300
Email hands@sherwood-scientific.com

1.4 Emergency Telephone (08:00-16:30) 01223 243444;
(24hr) 112
(Have this document to hand)

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to regulation 1272/2008/EC

Skin corrosion/irritation, category 2 (Skin Irrit. 2). Serious eye damage/irritation, category 2 (Eye Irrit. 2).

2.2 Label elements

Labelling according to regulation 1272/2008/EC

Signal word Warning

Hazard Pictograms
Hazard Statements
Causes skin irritation. Causes serious eye irritation.

Precautionary Statements
Wash thoroughly after handling. Wear protective gloves / protective clothing / eye protection. IF ON SKIN: Wash with soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Section 3. Composition

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>EEC No.</th>
<th>Conc w/w</th>
<th>CLP Classification (1272/2008/CE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>200-580-7</td>
<td>10.0 %</td>
<td>Flam. Liq. 3, Skin Corr. 1A</td>
</tr>
</tbody>
</table>

Section 4. First Aid

4.1 Description of first aid measures

Eyes
Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. OBTAIN MEDICAL ATTENTION URGENTLY.

Skin
Wash off skin thoroughly with water. Remove contaminated clothing immediately and wash before re-use. If discomfort persists OBTAIN MEDICAL ATTENTION.

Inhalation
Remove from exposure. Keep warm and at rest. If there is difficulty in breathing give oxygen if available. If discomfort persists OBTAIN MEDICAL ATTENTION.

Ingestion
If conscious give plenty of water to drink. Do not induce vomiting. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. If unconscious place in the recovery position. OBTAIN MEDICAL ATTENTION URGENTLY.

4.2 Most important symptoms and effects, both acute & delayed.
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed.
No further relevant information available.

Section 5. Fire Fighting

5.1 Extinguishing media
Extinguishing Media
Water spray, alcohol resistant foam, dry powder or carbon dioxide. Use water spray to keep fire exposed containers cool.

Unsuitable Media
Do not use water jet.

5.2 Special hazards arising from the substance or mixture
Hazards
Presents no specific fire danger.

5.3 Advice for firefighters
Advice for firefighters
Evacuate area immediately. Keep up wind. Avoid exposure to toxic vapours and fumes. Fire-fighters should wear protective clothing and breathing apparatus.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal Protection
Avoid breathing vapour. Use approved personal protective equipment. Evacuate area immediately. Do not allow general use of area until it is safe to do so.

6.2 Environmental precautions
Environmental
Keep material out of sewers, storm drains, surface waters and soil. Notify the Environmental Agency and local Environmental Health Officer if major spillage occurs.

6.3 Methods and material for containment and cleaning up
Major Spillage
Contain and absorb on inert material. Transfer absorbent to salvage container for removal. Wash area down with copious amounts of water.
Minor Spillage
Wash area down with copious amounts of water.

6.4 Reference to other sections
See section 8.2 for information on protective equipment and section 13 for information on disposal.

Section 7. Storage & Handling

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Do not breath vapours. Do not allow to contaminate clothing.
Ensure Local Exhaust Ventilation maintains vapour concentrations below the recommended limits.

7.2 Conditions for safe storage, including any incompatibilities
Well ventilated, cool, dry storage.

7.3 Specific end use(s)
See section 1.2.

Section 8. Workplace Exposure & Personal Protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Concentration</th>
<th>Workplace Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Long Term (8hr TWA)</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>10%</td>
<td>10.0 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25.0 ppm</td>
</tr>
</tbody>
</table>

8.2 Exposure controls
Respiratory Protection Use L.E.V. or natural ventilation to maintain vapour concentrations below exposure limits. If not, use a well maintained chemical cartridge organic vapour respirator, or use self-contained breathing apparatus.
Hand Protection Use nitrile gloves or PVC gauntlets.
Eye Protection Use chemical full face shield.
Skin Protection Wear PVC oversuit.
Special Hazards No special precautions required.

Section 9. Physical & Chemical Properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear colourless liquid.</td>
</tr>
<tr>
<td>Odour</td>
<td>Sharp vinegary odour and burning taste.</td>
</tr>
<tr>
<td>pH</td>
<td>&gt; @ 20°C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto Ignition</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No.</td>
</tr>
<tr>
<td>Oxidising Properties</td>
<td>No.</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density</td>
<td>1.1160</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely soluble in water.</td>
</tr>
</tbody>
</table>

9.2 Other information
No data available.
Section 10. Stability & Reactivity

10.1 Reactivity
No data available.

10.2 Chemical Stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to Avoid
No specific conditions.

10.5 Incompatible Materials

10.6 Hazardous Decomposition Products
None unusual. Burning will produce smoke, carbon monoxide and/or carbon dioxide.

Section 11. Toxicological Information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Both the vapour and liquid will be irritating to the eyes.</td>
</tr>
<tr>
<td>Skin</td>
<td>Both the vapour and liquid will be irritating to the skin.</td>
</tr>
<tr>
<td>LD50 Skin</td>
<td>Not available</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Causes severe corrosion of the mouth, throat and gastro-intestinal tract.</td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>Not available</td>
</tr>
<tr>
<td>Inhalation</td>
<td>High concentrations of vapour will produce severe irritation of the eyes, nose, throat and respiratory tract.</td>
</tr>
<tr>
<td>LD50 Inhalation</td>
<td>Not available</td>
</tr>
<tr>
<td>TCLo</td>
<td>Not available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not considered to be a carcinogen.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not considered to be a mutagen.</td>
</tr>
<tr>
<td>Reproductive Effects</td>
<td>None identified.</td>
</tr>
<tr>
<td>Other Information</td>
<td>The irritant effect provides warning that control of exposure is needed. 10ppm is the threshold for irritation with severe irritation occurring above 25ppm.</td>
</tr>
</tbody>
</table>

Section 12. Ecological

12.1 Toxicity
Readily bio-degraded in the environment. Slightly toxic to aquatic species but is unlikely to bioaccumulate.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 Algal</td>
<td>Not available</td>
</tr>
<tr>
<td>LC50 Crustacea</td>
<td>Not available</td>
</tr>
<tr>
<td>LC50 Fish</td>
<td>Not available</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT & vPvB Assessment
Assessment not required.

12.6 Other adverse effects
None known at present.
Section 13. Disposal Considerations

13.1 Waste treatment methods
   Disposal Methods  Dilute in a large excess of water and carefully neutralise with soda ash, then wash to drain with copious amounts of water.
   Contaminated Packaging  Wash out containers with water. Use a licensed waste disposer.

Section 14. Transport Information

14.1 UN Number  Non-restricted
14.2 Proper Shipping Name  Non-restricted
14.3 Transport classes
   UN classification  None
   Subsidiary Risk  None
   Transport category  None
   ADR Hazard ID  Non-restricted
   Tunnel Restriction Code  Non-restricted
14.4 Packing Group  None
14.5 Environment hazards  See section 12.
14.6 Special precautions for user  No special precautions required.
14.7 Transport in bulk  Not transported in bulk.
Section 15. Regulatory Information

15.1 Safety, health and environment regulations specific for substance/mixture.

Classification, Labeling & Packaging of Substances & Mixtures Regulations (1272/2008/CE)

Signal word Warning

Hazard Pictograms

Hazard Statements H315, H319
Causes skin irritation. Causes serious eye irritation.

Precautionary Statements P264, P280, P302+P352, P332+P313, P362
Wash thoroughly after handling. Wear protective gloves / protective clothing / eye protection. IF ON SKIN:
Wash with soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated
 clothing and wash before reuse.


Classification Irritant (Xi)

Risk & Safety Phrases R36/38, S24/25, S26
Irritating to eyes and skin. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately
with plenty of water and seek medical advice.

15.2 Chemical safety assessment
Assessment not required.

Section 16. Other Information

The information contained in this document only covers the hazards presented by this material, it DOES NOT
constitute a workplace risk assessment. See sections 11 for toxicological information and section 12 for
ecological information.