1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS

1.1 Product Identifier

Product name: Durham pH Screen

Product number: MD1-101

EC No.: See section 3

REACH registration No.: See section 3

CAS No.: See section 3

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

Identified uses: Research and development

Uses advised against: Not for drug, household or uses other than those identified

1.3 Details of the supplier of the Safety Data Sheet

Supplier: Molecular Dimensions Limited

Address: Unit 6 Goodwin Park Willie Snath Road Newmarket Suffolk CB8 7SQ United Kingdom

Telephone: +44 (0)1638 561051

Fax: +44 (0)1638 666747

Email address: enquiries@moleculardimensions.com

1.4 Emergency telephone number

Emergency phone number: 999

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Classification according to Regulation (EC) No. 1272/2008 (CLP)

H226 Flammable liquid & vapour

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

H360 May damage fertility or the unborn child

H302 Harmful if swallowed

H318 Causes serious eye damage

H360D May damage the unborn child

H301 Toxic if swallowed

H410 Very toxic to aquatic life with long-lasting effects

H331 Toxic if inhaled

H317 May cause an allergic skin reaction

H290 May be corrosive to metals

2.2 Label elements

Labelling according to Regulation (EC) No. 1277/2008 (CLP)

Pictogram(s):

Hazard statement(s):

See section 2.1.

Precautionary statement(s):

P280 Wear protective gloves/protective clothing/eye protection/face protection

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 CENTER or doctor/physician

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P301 Obtain special instructions before use

P308+P313 IF exposed or concerned: Get medical advice/attention

P273 Avoid release to the environment

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P311 Call a POISON CENTER or doctor/physician

P501 Dispose of contents/container according to instructions on SDS

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking

P303+P361+P338 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P303+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P302+P352 IF ON SKIN: Wash with soap and water

2.3 Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

<table>
<thead>
<tr>
<th>Chemical</th>
<th>EC No.</th>
<th>REACH No.</th>
<th>CAS No.</th>
<th>Concentration</th>
<th>P-code(s)</th>
<th>H-code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrapure water</td>
<td></td>
<td></td>
<td></td>
<td>100%v/v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetic acid</td>
<td>200-580-7</td>
<td></td>
<td>64-19-7</td>
<td>0.2M</td>
<td>P280, P305+P351+P338, P310</td>
<td>H226, H314</td>
</tr>
<tr>
<td>AOA</td>
<td></td>
<td>26239-55-4</td>
<td>0.2M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BICINE</td>
<td></td>
<td>160-25-4</td>
<td>0.2M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bis-TRIS</td>
<td>230-237-7</td>
<td></td>
<td>6976-37-0</td>
<td>0.2M</td>
<td>P261, P305+P351+P338</td>
<td>H315, H319, H335</td>
</tr>
<tr>
<td>Bis-TRIS propane</td>
<td></td>
<td>64431-96-5</td>
<td>0.2M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boric acid</td>
<td>133-139-2</td>
<td>01-2119486683-25-XXXX</td>
<td>10043-35-3</td>
<td>0.2M</td>
<td>P201, P308+P313</td>
<td>H360</td>
</tr>
</tbody>
</table>
**4. FIRST AID MEASURES**

4.1 Description of first aid measures

**General notes**
Consult a doctor. Show this safety sheet to the doctor in attendance.

Following inhalation
Move to fresh air. If not breathing, give artificial respiration. Consult a doctor. Seek immediate medical attention.

Following skin contact
Rinse off contaminated clothing and shoes immediately. Seek immediate medical attention. Wash off with soap and water. Consult a doctor.

Following eye contact
Rinse thoroughly for at least 15 minutes. Consult a doctor. Flush eyes with water. Seek immediate medical attention.

Following ingestion
Do not induce vomiting. Rinse mouth with water. Consult a doctor. Show this safety data sheet to the doctor in attendance.

Self-protection for first aider
Always use recommended PPE when treating patient.

4.2 Most important symptoms and effects, both acute and delayed
The most important known effects are detailed in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

---

**5. FIRE-FIGHTING METHODS**

5.1 Extinguishing media
Use water spray, alcohol resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters
Wear breathing apparatus. Use water spray to cool unopened containers.

---

**6. ACCIDENTAL RELEASE MEASURES**

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment including respiratory protection. Avoid breathing vapours. Use personal protective equipment.

6.2 Environmental precautions
Do not let product enter drains

6.3 Methods and materials for containment and clean up
Use spill kit to contain spillage and use wet brushing to place in a suitable container for disposal. Do not flush with water. Remove all sources of ignition. Evacuate personnel to safe areas.

6.4 Reference to any other sections
For disposal, see section 13

---

**7. HANDLING AND STORAGE**

7.1 Precautions for safe handling
For precautions, see section 2.2

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in well-ventilated place. Containers which are opened must be carefully resealed and stored upright to prevent leakage.

7.3 Specific end use
Apart from uses in Section 1.2, no other specific uses are stipulated.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 Control parameters

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS No.</th>
<th>Country</th>
<th>Limit value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium cacodylate trihydrate</td>
<td>5131-99-3</td>
<td>UK</td>
<td>STEL</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

8.2 Exposure controls
8.2.1 Appropriate engineering controls
Wash hands before work break and at the end of the day
8.2.2 Personal Protection

**Eye/face protection**
Face shield & safety specs.

**Skin Protection**
Nitrile gloves (splash protection only) and lab coat

**Respiratory protection**
Use respirators and components tested and approved under appropriate government standards such as CEN (EU) as back up to engineering control

**Environmental exposure controls**
Do not let product enter drains

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Transparent liquid</td>
</tr>
<tr>
<td>b) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point / freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper / lower flammability or exposure limits</td>
<td>No data available</td>
</tr>
<tr>
<td>k) Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>l) Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>n) Solubility(ies)</td>
<td>No data available</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol / water</td>
<td>No data available</td>
</tr>
<tr>
<td>p) Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>t) Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Reactivity</td>
<td>No data available</td>
</tr>
<tr>
<td>10.2 Chemical stability</td>
<td>No data available</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>No data available</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No data available</td>
</tr>
<tr>
<td>10.5 Incompatible materials</td>
<td>Strong oxidising agents, strong acids, strong bases</td>
</tr>
<tr>
<td>10.6 Hazardous decomposition materials</td>
<td>No data available. In case of fire see section 5</td>
</tr>
</tbody>
</table>

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Acute toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>b) Skin corrosion / irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Serious eye damage / irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>d) Respiratory or skin sensitization</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Germ cell mutagenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>f) Carcinogenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>g) Reproductive toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>h) STOT - single exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>i) STOT - repeated exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Aspiration hazard</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 11.2 Delayed and Immediate effects as well as chronic effects from short to long term exposure

**Symptoms**
Extremely destructive to mucous membranes, upper respiratory tract, eyes & skin. By ingestion/absorption: Nausea, vomiting, diarrhea, abdominal cramps, lesions on skin & mucous membranes. Circulatory collapse, tachycardia, delirium, convulsions, coma, death. Vomiting, diarrhoea, damage to tooth enamel, dermatitis. Bunting sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Material is extremely destructive to mucous membranes & upper respiratory tract. Drowsiness, tremors, convulsions. May cause respiratory irritation. Breathing difficulties. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea, vomiting. Corrosive material: Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus. Ingestion causes severe swelling, severe damage to delicate tissues & danger or perforation.

### 12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1 Toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>12.2 Persistence and degradability</td>
<td>No data available</td>
</tr>
<tr>
<td>12.3 Bioaccumulative potential</td>
<td>No data available</td>
</tr>
<tr>
<td>12.4 Mobility in soil</td>
<td>No data available</td>
</tr>
<tr>
<td>12.5 Results of PBT and vPvB assessment</td>
<td>No data available</td>
</tr>
<tr>
<td>12.6 Other adverse effects</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Product / packaging disposal**
Dispose of packaging as unused product. Offer surplus and non-recyclable solutions to a licensed disposal company.

Observe all EU and local environmental regulations.

### 14. TRANSPORT INFORMATION

#### 14.1 UN number

**A.R.D./R.I.D.** 3082  
I.M.D.G. 3082  
I.C.A.O.-T.I. 3082  
A.D.N. 3082

#### 14.2 UN proper shipping name

**A.R.D./R.I.D.** Environmentally hazardous substance, liquid, n.o.s.  

#### 14.3 Transport hazard classes

**A.R.D./R.I.D.** 9  
I.M.D.G. 9  
I.C.A.O.-T.I. 9  
A.D.N. 9
14.4 Packaging group
II II II II

14.5 Environmental hazards

14.6 Special precautions for user
A.R.D./R.I.D. No data available I.M.D.G. No data available
I.C.A.O.-T.I. No data available A.D.N. No data available

15. REGULATORY INFORMATION
15.1 Safety, health and environmental regulations
No data available.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

16. OTHER INFORMATION
a) Changes since last revision
First issue

b) Key to any abbreviations used
PPE Personal protective equipment
A.R.D./R.I.D. International Carriage of Dangerous Goods by Road / Rail
I.M.D.G. International Maritime Dangerous Goods
A.D.N. International Carriage of Dangerous Goods by Inland Waterways
TWA Time-weighted average
STEL Short-term exposure limit

c) References and sources for data
sigma-aldrich.com
fishersci.co.uk
anatrace.com

d) Indication of methods used for classification (mixtures only)
No data available

e) List of Hazard and Precautionary phrase not listed in full in other sections
See Section 2.1.

f) Advice for training

Disclaimer:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Molecular Dimensions Ltd., shall not be held liable for any damage resulting from handling or from contact with the above product.