SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product Name : 3.4 M Sodium malonate pH 4.0
Product Number : HR2-747
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS Number : 141-82-2

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

Identified uses : Laboratory chemicals, Manufacture of substances.

1.3 Details of the supplier of the Safety Data Sheet

Company : Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317
United States
Telephone : 949 425 1321
Fax : 949 425 1611
E-mail : tech@hrmail.com
E-mail Technical Support is available 24 hours a day.

1.4 Emergency telephone number

Emergency phone : 949 425 1321
For CHEMTREC Assistance : 800 424 9300
For CHEMTREC Assistance : 703 527 3887 (International)

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 4), H302
Serious eye damage (Category 1), H318

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
Xn Harmful R22, R41

For the full text of the R-phrases mentioned in this Section, see Section 16.
2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram:

Signal word: Danger

Hazard statement(s)
H302: Harmful if swallowed.
H318: Causes serious eye damage.

Precautionary statement(s)
P280: Wear protective gloves/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.

Supplemental Hazard Statements: none

2.3 Other hazards - none

SECTION 3: Composition/Information on Ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Synonym</th>
<th>Malonic acid or Propanedioic acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>$C_3H_4O_4 + NaOH$</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>104.06 + NaOH</td>
</tr>
<tr>
<td>CAS Number</td>
<td>141-82-2</td>
</tr>
<tr>
<td>EC Number</td>
<td>205-503-0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RTECS</th>
<th>Merck</th>
<th>Beilstein</th>
<th>SARA</th>
<th>MDL #</th>
<th>PubChem Substance ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>OO0175000</td>
<td>14,5710</td>
<td>14,5710</td>
<td>No</td>
<td>MFCD00002707</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malonic acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No. 141-82-2</td>
<td>Acute Tox. 4; Eye Dam. 1; H302, H318</td>
<td></td>
</tr>
<tr>
<td>EC-No. 205-503-0</td>
<td>&lt;= 100 %</td>
<td></td>
</tr>
</tbody>
</table>

Hazardous ingredients according to Directive 1999/45/EC

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malonic acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No. 141-82-2</td>
<td>Xn, R22 - R41</td>
<td></td>
</tr>
<tr>
<td>EC-No. 205-503-0</td>
<td>&lt;= 100 %</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: First Aid Measures

4.1 Description of first aid measures

General Advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes as a precaution and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. The most important known symptoms and effects are described in the labeling (see Section 2.2) and/or in Section 11.

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

SECTION 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information
no data available

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
(CONTINUED) - SECTION 6: Accidental Release Measures

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and Storage

7.1 Personal Precautions
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.
For precautions see section 2.2. Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters
Components with workplace control parameters

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de,
test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374,
contact the supplier of the CE approved gloves. This recommendation is advisory only and must be
evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated
use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type
of protective equipment must be selected according to the concentration and amount of the dangerous
substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle
respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering
controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use
respirators and components tested and approved under appropriate government standards such
as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into
the environment must be avoided.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: Fine Crystals</td>
</tr>
<tr>
<td>b) Odor</td>
<td>no data available</td>
</tr>
<tr>
<td>c) Odor 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>132 - 136°C (dec.)</td>
</tr>
<tr>
<td>f) Initial boiling point and</td>
<td>no data available</td>
</tr>
<tr>
<td>boiling range</td>
<td></td>
</tr>
<tr>
<td>g) Flash point</td>
<td>157°C (314°F)</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or</td>
<td>no data available</td>
</tr>
<tr>
<td>explosive limits</td>
<td></td>
</tr>
<tr>
<td>k) Vapor pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>no data available</td>
</tr>
<tr>
<td>m) Relative density</td>
<td>no data available</td>
</tr>
<tr>
<td>n) Water solubility</td>
<td>no data available</td>
</tr>
</tbody>
</table>
(CONTINUED) - SECTION 9: Physical and Chemical Properties

- o) Partition coefficient: no data available
  - octanol/water
- p) Autoignition temperature: no data available
- q) Decomposition temperature: no data available
- r) Viscosity: no data available
- s) Explosive properties: no data available
- t) Oxidizing properties: no data available

9.2 Other safety information
- Surface tension: no data available
- Relative vapour density: no data available

SECTION 10: Stability and Reactivity

10.1 Reactivity
- no data available

10.2 Chemical stability
- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
- no data available

10.4 Conditions to avoid
- no data available

10.5 Incompatible materials
- Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products
- Other decomposition products - no data available
- In the event of fire: see section 5

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
- LD50 Oral - rat - 1.310 mg/kg
- Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Dyspnea. Cyanosis
- LC50 Inhalation - rat - 1 h - > 8.989 mg/m³
(CONTINUED) - SECTION 11: Toxicological Information

Skin irritation / corrosion
Skin - rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit
Result: Severe eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
rat
Morphological transformation.

Chronic exposure
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information
RTECS: OO0175000
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting

SECTION 12: Ecological Information

12.1 Toxicity
Toxicity to fish          LC50 - Lepomis macrochirus - 150 mg/l - 24 h
Toxicity to daphnia and other aquatic invertebrates  EC50 - Daphnia magna (Water flea) - 275 mg/l - 48 h
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 and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
no data available

SECTION 13: Disposal Considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transportation Information

14.1 UN number
ADR/RID: -  IMDG: -  IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -  IMDG: -  IATA: -

14.4 Packaging group
ADR/RID: -  IMDG: -  IATA: -

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
no data available
SECTION 15: Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3.
Acute Tox. Acute toxicity
Eye Dam. Serious eye damage
H302 Harmful if swallowed.
H318 Causes serious eye damage.

Full text of R-phrases referred to under sections 2 and 3
Xn Harmful
R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

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