

1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS

1.1 Product Identifier

Product name: PACT premier Eco Screen / PACT premier HT-96 Eco Screen
Product number: MD1-29-ECO / MD1-36-ECO
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 Datasheet

Supplier: Molecular Dimensions Limited
Address: Unit 6 Goodwin Park
Willie Snaith Road
Newmarket
Suffolk
CB8 7SQ
United Kingdom
Telephone: +44 (0)1638 561051
Fax: +44 (0)1638 660674
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]

EUH032 Contact with acids liberates very toxic gas
H272 May intensify fire; oxidizer
H301 Toxic if swallowed
H302 Harmful if swallowed
H312 Harmful in contact with skin
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H318 Causes serious eye damage
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory irritation
H360 May damage fertility or the unborn child
H360D May damage the unborn child
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long-lasting effects
H412 Harmful to aquatic life with long-lasting effects

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):

P201 Obtain special instructions before use
P220 Keep/Store away from clothing/combustible materials
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P308+P313 IF exposed or concerned: Get medical advice/attention
P310 Immediately call a POISON CENTER or doctor/physician
P501 Dispose of contents/container according to instructions on SDS

2.3 Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

| Chemical | EC No. | REACH No. | CAS No. | Concentration | P-code(s) | H-code(s) |
|----------------------------|-----------|-----------------------|------------|---------------|----------------------------------|------------------------|
| Ammonium chloride | 235-186-4 | - | 12125-02-9 | 0.2M | P305+P351+P338 | H302, H319 |
| BIS-TRIS propane | - | - | 64431-96-5 | 0.1M | | |
| Boric acid | 233-139-2 | 01-2119486683-25-XXXX | 10043-35-3 | 0.1M | P201, P308+P313 | H360 |
| Calcium chloride dihydrate | 233-140-8 | - | 10035-04-8 | 0.2M | P305+P351+P338 | H319 |
| DL-Malic acid | 230-022-8 | - | 6915-15-7 | 0.1M | P261, P280, P305+P351+P338 | H302, H315, H318, H335 |
| Glycine | 200-272-2 | - | 56-40-6 | 0.1M | | |
| HEPES | - | - | 7365-45-9 | 0.1M | | |
| Imidazole | 206-019-2 | 01-2119485825-24-XXXX | 288-32-4 | 0.1M | P201, P280, P305+P351+P338, P310 | H302, H314, H360D |

| Chemical | EC No. | REACH No. | CAS No. | Concentration | P-code(s) | H-code(s) |
|--|-----------|-----------|-------------|----------------|--|--------------------------------|
| Lithium chloride | 231-212-3 | - | 7447-41-8 | 0.2M | P261, P305+P351+P338 | H302, H315, H319, H335 |
| Magnesium chloride hexahydrate | - | - | 7791-18-6 | 0.2M | | |
| MES monohydrate | 224-632-3 | - | 145224-94-8 | 0.1M | P261, P305+P351+P338 | H315, H319, H335 |
| Poly(ethylene glycol) 1500 | 500-038-2 | - | 25322-68-3 | 25%w/v | | |
| Poly(ethylene glycol) 3350 | 500-038-2 | - | 25322-68-3 | 20%w/v | | |
| Poly(ethylene glycol) 6000 | 500-038-2 | - | 25322-68-3 | 20%w/v | | |
| Potassium phosphate dibasic | 231-834-5 | - | 7758-11-4 | 0.02M | | |
| Potassium phosphate monobasic | 231-913-4 | - | 7778-77-0 | 0.02M | | |
| Potassium sodium tartrate tetrahydrate | - | - | 6381-59-5 | 0.2M | | |
| Potassium thiocyanate | 206-370-1 | - | 333-20-0 | 0.2M | P273, P280 | H302, H312, H332, H412, EUH032 |
| Sodium acetate trihydrate | - | - | 6131-90-4 | 0.1 - 0.2 M | | |
| Sodium bromide | 231-599-9 | - | 7647-15-6 | 0.2M | | |
| Sodium chloride | 231-598-3 | - | 7647-14-5 | 0.2M | | |
| Sodium citrate tribasic dihydrate | - | - | 6132-04-3 | 0.2M | | |
| Sodium fluoride | 231-667-8 | - | 7681-49-4 | 0.2M | P301+P310, P305+P351+P338 | H301, H315, H319, EUH032 |
| Sodium formate | 205-488-0 | - | 141-53-7 | 0.2M | | |
| Sodium iodide | 231-679-3 | - | 7681-82-5 | 0.2M | P273, P305+P351+P338 | H315, H319, H400 |
| Sodium malonate dibasic monohydrate | - | - | 26522-85-0 | 0.2M | | |
| Sodium nitrate | 231-554-3 | - | 7631-99-4 | 0.2M | P220, P261, P305+P351+P338 | H272, H319 |
| Sodium phosphate dibasic dihydrate | - | - | 10028-24-7 | 0.02M | | |
| Sodium phosphate monobasic monohydrate | - | - | 10049-21-5 | 0.1M | | |
| Sodium propionate | 205-290-4 | - | 137-40-6 | 0.1M | P280 | H312 |
| Sodium sulfate | 231-820-9 | - | 7757-82-6 | 0.2M | | |
| Succinic acid | 203-740-4 | - | 110-15-6 | 0.1M | P261, P280, P305+P351+P338 | H315, H318, H335 |
| Trizma® base | 201-064-4 | - | 77-86-1 | 0.1M | P261, P305+P351+P338 | H315, H319, H335 |
| Zinc chloride | 231-592-0 | - | 7646-85-7 | 0.002 - 0.01 M | P273, P280, P305+P351+P338, P310, P501 | H302, H314, H410 |

4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes

Consult a doctor. Show this safety datasheet to the doctor in attendance.

Following inhalation

Move to fresh air. If not breathing, give artificial respiration. Consult a doctor.

Following skin contact

Wash off with soap & water. Consult a doctor. Take off contaminated clothing & shoes immediately.

Following eye contact

Rinse thoroughly for at least 15 minutes. Consult a doctor. Flush eyes with water.

Following ingestion

Rinse mouth with water. Consult a doctor. Do NOT induce vomiting.

Self-protection for first aid

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. Use dry chemical powder.

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas. Nitrogen oxides. Carbon oxides. Boron oxides. Calcium oxides. Sulfur oxides. Hydrogen cyanide gas. Lithium oxides. Magnesium oxides. Potassium oxides. Phosphorous oxides. Sodium oxides. Hydrogen bromide gas. Hydrogen fluoride gas. Zinc oxides.

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

Avoid breathing vapours. Use personal protective equipment including respiratory protection. 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 & use wet brushing to place in a suitable container for disposal. Do not flush with water. Evacuate personnel to safe areas. Remove all sources of ignition.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

| Chemical | CAS No. | Country | Limit value | | Basis |
|-----------------------|------------|---------|---------------------|-----------------------|-------------------------------------|
| | | | STEL | TWA | |
| Ammonium chloride | 12125-02-9 | UK | | 10 ppm | EH40 WEL - Workplace Exposure Limit |
| Potassium thiocyanate | 333-20-0 | UK | | 5 mg/m ³ | EH40 WEL - Workplace Exposure Limit |
| Sodium fluoride | 7681-49-4 | UK | | 2.5 mg/m ³ | EH40 WEL - Workplace Exposure Limit |
| Zinc chloride | 7646-85-7 | UK | 2 mg/m ³ | 1 mg/m ³ | EH40 WEL - Workplace Exposure Limit |

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

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

10. STABILITY AND REACTIVITY

| | |
|---|---|
| 10.1 Reactivity | No data available |
| 10.2 Chemical stability | No data available |
| 10.3 Possibility of hazardous reactions | No data available |
| 10.4 Conditions to avoid | No data available |
| 10.5 Incompatible materials | Strong oxidising agents, strong acids, strong bases |
| 10.6 Hazardous decomposition materials | No data available. In case of fire see section 5 |

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| | |
|--------------------------------------|-------------------|
| a) Acute toxicity | No data available |
| b) Skin corrosion / irritation | No data available |
| c) Serious eye damage / irritation | No data available |
| d) Respiratory or skin sensitization | No data available |
| e) Germ cell mutagenicity | No data available |
| f) Carcinogenicity | No data available |
| g) Reproductive toxicity | No data available |
| h) STOT - single exposure | No data available |
| i) STOT - repeated exposure | No data available |
| j) Aspiration hazard | No data available |

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

Symptoms

By ingestion/absorption: Nausea, vomiting, diarrhoea, abdominal cramps, and lesions on skin & mucous membranes. Circulatory collapse, tachycardia, delirium, convulsions, coma, death. Burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Material is extremely destructive to mucous membranes & upper respiratory tract. Headache, nausea, vomiting. Sedation. Vomiting, diarrhoea, dehydration, congestion in internal organs. Inflammatory reactions in gastrointestinal tract. Damage to lungs. Prolonged exposure to iodides may produce iodism. Symptoms include: skin rash, running nose, headache, and irritation of mucous membrane. Severe cases: pimples, boils, hives, and blisters, black & blue spots. Iodides readily diffuse across the placenta & can cause neonatal death. Known to cause drug-induced fevers for short periods. Absorption into body leads to formation of methemoglobin which causes cyanosis.

12. ECOLOGICAL INFORMATION

| | |
|---|-------------------|
| 12.1 Toxicity | No data available |
| 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 | No data available |
| 12.6 Other adverse effects | No data available |

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. | I.M.D.G. | Environmentally hazardous substance, liquid, n.o.s. |
| I.C.A.O.-T.I. | Environmentally hazardous substance, liquid, n.o.s. | A.D.N. | Environmentally hazardous substance, liquid, n.o.s. |

14.3 Transport hazard class(es)

| | | | | | | | |
|---------------|---|----------|---|---------------|---|--------|---|
| 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

| | | | | | | | |
|---------------|----|----------|----|---------------|----|--------|----|
| A.R.D./R.I.D. | II | I.M.D.G. | II | I.C.A.O.-T.I. | II | A.D.N. | II |
|---------------|----|----------|----|---------------|----|--------|----|

14.5 Environmental hazards

| | | | | | | | |
|---------------|-----|----------|-----|---------------|-----|--------|-----|
| A.R.D./R.I.D. | Yes | I.M.D.G. | Yes | I.C.A.O.-T.I. | Yes | A.D.N. | Yes |
|---------------|-----|----------|-----|---------------|-----|--------|-----|

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 |
| I.C.A.O.-T.I. | Technical Instructions for the Safe Transport of Dangerous Goods by Air |
| 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.