

1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS

1.1 Product Identifier

Product name: The Clear Strategy™ Combination Eco Screen
 Product number: MD1-16-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: Calibre Scientific UK
 Unit 5A, R-Evolution @
 The Advanced Manufacturing Park
 Selden Way, Rotherham
 S60 5XA
 Telephone: +44 (0)11422 42257
 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
 H225 Highly flammable liquid & vapour
 H301 Toxic if swallowed
 H302 Harmful if swallowed
 H302+H312 Harmful if swallowed. Harmful in contact with skin
 H312 Harmful in contact with skin
 H315 Causes skin irritation
 H317 May cause an allergic skin reaction
 H319 Causes serious eye irritation
 H330 Fatal if inhaled
 H331 Toxic if inhaled
 H332 Harmful if inhaled
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H335 May cause respiratory irritation
 H336 May cause drowsiness or dizziness
 H340 May cause genetic defects
 H341 Suspected of causing genetic defects
 H350 May cause cancer
 H350i May cause cancer by inhalation
 H360D May damage the unborn child
 H360FD May damage fertility or the unborn child
 H372 Causes damage to organs through prolonged or repeated exposure
 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
 P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking
 P260 Do not breathe dust/fume/gas/mist/vapours/spray
 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
 P284 Wear respiratory 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
 P310 Immediately call a POISON CENTER or doctor/physician
 P311 Call a POISON CENTER or doctor/physician

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)
1,4-Butanediol	203-786-5	-	110-63-4	40%v/v	P261	H302, H336

Chemical	EC No.	REACH No.	CAS No.	Concentration	P-code(s)	H-code(s)
2-Propanol	200-661-7	-	603-117-00-0	35%v/v	P210, P261, P305+P351+P338	H225, H319, H336
Ammonium sulfate	231-984-1	-	7783-20-2	1.5 - 2.7 M		
Cadmium chloride hemi(pentahydrate)	233-296-7	-	7790-78-5	0.005M	P201, P260, P273, P284, P301+P310, P310	H301, H330, H340, H350, H360FD, H372, H410
Calcium acetate hydrate	200-580-7	-	114460-21-8	0.2M	P261, P305+P351+P338	H315, H319, H335
Hexylene glycol	203-489-0	-	107-41-5	40%w/v	P305+P351+P338	H315, H319
Jeffamine® M-600	-	-	83713-01-3	30%v/v	P280, P305+P351+P338	H302+H312, H315, H319
Lithium sulfate	233-820-4	-	10102-25-7	0.2 - 1.8 M		H302
Magnesium chloride hexahydrate	-	-	7791-18-6	0.2M		
MES monohydrate	224-632-3	-	145224-94-8	1M	P261, P305+P351+P338	H315, H319, H335
Nickel(II) chloride hexahydrate	-	-	7791-20-0	0.005M	P201, P261, P273, P280, P301+P310, P311	H301, H315, H317, H334, H341, H350i, H360D, H372, H410, H331,
Poly(ethylene glycol) 1000	500-038-2	-	25322-68-3	10%w/v		
Poly(ethylene glycol) 1500	500-038-2	-	25322-68-3	20%w/v		
Poly(ethylene glycol) 20000	500-038-2	-	25322-68-3	8%w/v		
Poly(ethylene glycol) 3350	500-038-2	-	25322-68-3	18%w/v		
Poly(ethylene glycol) 4000	500-038-2	-	25322-68-3	15 - 20 %w/v		
Poly(ethylene glycol) 600	500-038-2	-	25322-68-3	20%w/v		
Poly(ethylene glycol) 6000	500-038-2	-	25322-68-3	15%w/v		
Poly(ethylene glycol) 8000	500-038-2	-	25322-68-3	10%w/v		
Poly(ethylene glycol) methyl ether 2000	-	-	9004-74-4	25%w/v		
Poly(ethylene glycol) methyl ether 500	-	-	9004-74-4	8 - 20 %v/v		
Poly(ethylene glycol) methyl ether 5000	-	-	9004-74-4	18%w/v		
Potassium bromide	231-830-3	-	7758-02-3	0.2M	P261, P305+P351+P338	H315, H319, H335
Potassium phosphate monobasic	231-913-4	-	7778-77-0	0.5 - 1 M		
Potassium thiocyanate	206-370-1	-	333-20-0	0.15 - 0.2 M	P273, P280	H302, H312, H332, H412, EUH032
Sodium acetate trihydrate	-	-	6131-90-4	0.3 - 1 M		
Sodium formate	205-488-0	-	141-53-7	0.8 - 4 M		
Trizma® base	201-064-4	-	77-86-1	1M	P261, P305+P351+P338	H315, H319, H335

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

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

Following ingestion

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

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. Use dry chemical powder.

5.2 Special hazards arising from the substance or mixture

Carbon oxides. Sulfur oxides. Nitrogen oxides. Hydrogen chloride gas. Cadmium oxides. Calcium oxides. Lithium oxides. Magnesium oxides. Nickel oxides. Metal oxides. Potassium oxides. Hydrogen bromide gas. Phosphorous oxides. Sodium 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

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 & 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Chemical	CAS No.	Country	Limit value		Basis
			STEL	TWA	

2-Propanol	603-117-00-0	UK	500 ppm	400 ppm	EH40 WEL - Workplace Exposure Limit
Cadmium chloride hemi(pentahydrate)	7790-78-5	UK		0.025 mg/m ³	EH40 WEL - Workplace Exposure Limit
Hexylene glycol	107-41-5	UK	25 mg/m ³	25 mg/m ³	EH40 WEL - Workplace Exposure Limit
Nickel(II) chloride hexahydrate	7791-20-0	UK		0.1 ppm	EH40 WEL - Workplace Exposure Limit
Potassium thiocyanate	333-20-0	UK		5 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

Central nervous system depression, nausea, headache, vomiting, drowsiness. Overexposure could cause mild, reversible liver effects. Dizziness, procrastination, can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, thyroid disturbances. Central nervous system effects including: blurred vision, sensory loss, slurred speech, ataxia, convul. Diarrhoea, vomiting, neuromuscular effects such as tremors, clonus, hyperactive reflexes. Gastrointestinal disturbance. Headache, nausea, vomiting.

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.