

## 1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS

### 1.1 Product Identifier

Product name:	Additive Screen
Product number:	MD1-11
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
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## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of substance or mixture

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

H225	Highly flammable liquid & vapour
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H336	May cause drowsiness or dizziness
H301	Toxic if swallowed
H330	Fatal if inhaled
H340	May cause genetic defects
H350	May cause cancer
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
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H350i	May cause cancer by inhalation
H360F	May damage fertility
H315	Causes skin irritation
H226	Flammable liquid & vapour
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H311	Toxic in contact with skin
H373	May cause damage to organs through prolonged or repeated exposure
H332	Harmful if inhaled
H412	Harmful to aquatic life with long-lasting effects
EUH032	Contact with acids liberates very toxic gas
H411	Toxic 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):

P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P281	Use personal protective equipment as required
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P201	Obtain special instructions before use
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P273	Avoid release to the environment
P284	Wear respiratory protection
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P310	Immediately call a POISON CENTER or doctor/physician
P280	Wear protective gloves/protective clothing/eye protection/face protection
P308+P313	IF exposed or concerned: Get medical advice/attention

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)
1,4-Dioxane	204-661-8	-	123-91-1	100%v/v	P210, P261, P281, P305+P351+P338	H225, H319, H335, H351
2-Propanol	200-661-7	-	603-117-00-0	60%v/v	P210, P261, P305+P351+P338	H225, H319, H336
Betaine monohydrate	203-490-6	-	590-47-6	0.1M		
Cadmium chloride hemi(pentahydrate)	233-296-7	-	7790-78-5	0.1M	P201, P260, P273, P284, P301+P310, P310	H301, H330, H340, H350, H360FD, H372, H410
Cobalt(II) chloride hexahydrate	231-589-4	-	7791-13-1	0.1M	P201, P261, P273, P280, P308+P313, P501	H302, H317, H334, H341, H350i, H360F, H410
Dimethyl sulfoxide	200-664-3	-	67-58-5	100%v/v		
DL-Dithiothreitol	222-468-7	-	3483-12-3	0.05M	P261, P305+P351+P338	H302, H315, H319, H335
Ethylenediamine	203-468-6	-	107-15-3	1M	P261, P280, P305+P351+P338, P310	H226, H302, H312, H314, H317, H334
Ethylenediaminetetraacetic acid	200-449-4	-	60-00-4	0.05M	P305+P351+P338	H319
Glycerol	200-289-5	-	56-81-5	20%v/v		
Glycine	200-272-2	-	56-40-6	0.5M		
L-Glutamine	-	-	56-85-9	0.1M		
Magnesium chloride hexahydrate	-	-	7791-18-6	0.1M		
Octyl-β-D-glycopyranoside	-	-	29836-26-8	5%w/v		
Phenol	203-632-7	-	108-95-2	0.2M	P260, P280, P284, P301+P310, P305+P351+P338, P310	H301, H311, H314, H330, H341, H373
Potassium iodide	231-659-4	-	7681-11-0	1M	P305+P351+P338	H302, H315, H319
Sodium malonate dibasic monohydrate	-	-	26522-85-0	0.5M		
Sodium thiocyanate	208-754-4	-	540-72-7	0.1M	P273, P280	H302, H312, H332, H412, EUH032
Spermidine	204-689-0	-	124-20-9	0.1M	P280, P305+P351+P338, P310	H314
Spermine tetrahydrochloride	206-189-8	-	306-67-2	0.1M		H315
Taurine	203-483-8	-	107-35-7	0.1M	P261, P305+P351+P338	H315, H319, H335
Thymol	201-944-8	-	89-83-8	100%w/v	P273, P280, P305+P351+P338, P310	H302, H314, H411
Xylitol	201-788-0	-	87-99-0	0.2M		
Zinc chloride	231-592-0	-	7646-85-7	0.1M	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

Do NOT induce vomiting. Rinse mouth with water. Consult a doctor. Seek immediate medical attention.

#### 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. Nitrogen oxides. Hydrogen chloride gas. Cadmium oxides. Sulfur oxides. Hydrogen sulfide gas. Magnesium oxides. Potassium oxides. Sodium oxides. 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

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	
1,4-Dioxane	123-91-1	UK		20 ppm	EH40 WEL - Workplace Exposure Limit
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 <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Cobalt(II) chloride hexahydrate	7791-13-1	UK		0.1 mg/m <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Glycerol	56-81-5	UK		10 mg/m <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Phenol	108-95-2	UK	4 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Zinc chloride	7646-85-7	UK	2 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	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

Drying of skin, eczema. Nausea, vomiting, weakness, dizziness, vertigo, headache, sweating, loss of appetite. Kidney & liver injury may occur. Central nervous system depression, nausea, headache, vomiting, drowsiness. Overexposure could cause mild, reversible liver effects. Material is extremely destructive to tissue of mucous membranes & upper respiratory tract. Nausea, headache, fatigue. Nausea, headache, vomiting, central nervous system depression. Vomiting, diarrhoea, abdominal pain. Headache, nausea, vomiting. May cause kidney irregularities. Material is extremely destructive to mucous membranes & upper respiratory tract, eyes & skin. Spasm, inflammation & edema of larynx & bronchi. Pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, circulatory collapse, tachypnea, paralysis, convulsions, coma, necrosis of the mouth, jaundice, respiratory failure, cardiac arrest. Prolonged exposure to iodides may produce iodism. Symptoms include: skin rash, running nose, headache, irritation of mucous membrane. Severe cases: pimples, boils, hives, blisters, black & blue spots. Iodides readily diffuse across the placenta & can cause neonatal death. Known to cause drug-induced fevers for short periods. Nausea, headache, vomiting. Cough, shortness of breath, 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
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### 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
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### 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
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### 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
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### 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.