

**1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS**
**1.1 Product Identifier**

Product name: CryoSol™  
 Product number: MD1-90  
 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: The Innovation centre  
 217 Portobello  
 Sheffield  
 S1 4DP  
 United Kingdom  
 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]**

H225: Highly flammable liquid & vapour  
 H302: Harmful if swallowed  
 H315: Causes skin irritation  
 H319: Causes serious eye irritation  
 H335: May cause respiratory irritation  
 H351: Suspected of causing cancer

**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

**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)
1,2-Propanediol	200-338-0	-	57-55-6	12.5 - 100 %v/v		
1,4-Dioxane	204-661-8	-	123-91-1	12.5 - 100 %v/v	P210, P261, P281, P305+P351+P338	H225, H319, H335, H351
3-(1-Pyridino)-1-propanesulfonate	239-491-3	-	15471-17-7	0.0125 - 12.5 M		
Diethylene glycol	203-872-2	-	111-46-6	12.5 - 50 %v/v		H302
Dimethyl sulfoxide	200-664-3	-	67-58-5	12.5 - 100 %v/v		
Ethylene glycol	203-473-3	-	107-21-1	12.5 - 100 %v/v		H302
Glycerol	200-289-5	-	56-81-5	12.5 - 100 %v/v		
Hexylene glycol	203-489-0	-	107-41-5	12.5 - 100 %v/v	P305+P351+P338	H315, H319
2,3-Butanediol	208-173-6	-	513-85-9	12.5 - 100 %v/v		

**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.

**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 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

Carbon oxides. Sulfur oxides. Nitrogen 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. Avoid breathing vapours. Use personal protective equipment including respiratory protection.

### 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	
1,2-Propanediol	57-55-6	UK		150 ppm	EH40 WEL - Workplace Exposure Limit
1,4-Dioxane	123-91-1	UK		20 ppm	EH40 WEL - Workplace Exposure Limit
Diethylene glycol	111-46-6	UK		23 mg/m <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Ethylene glycol	107-21-1	UK	40 ppm	20 ppm	EH40 WEL - Workplace Exposure Limit
Glycerol	56-81-5	UK		10 mg/m <sup>3</sup>	EH40 WEL - Workplace Exposure Limit
Hexylene glycol	107-41-5	UK	25 mg/m <sup>3</sup>	25 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**

Gastrointestinal disturbance, nausea, headache, vomiting, central nervous system depression. Drying of skin, eczema. Nausea, vomiting, weakness, dizziness, vertigo, headache, sweating, loss of appetite. Kidney & liver injury may occur. Confusion, dizziness, kidney injury, unconsciousness, convulsions, pulmonary edema, nausea, headaches, vomiting. Effects may be delayed. Nausea, headache, fatigue. Early symptoms of ingestion similar to drunkenness, leading to nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema. Without treatment, death may occur in 2h to 24h. Long term affects include renal failure, brain and liver damage. Consumption of alcohol may increase toxic effects. Headache, nausea, vomiting. May cause kidney irregularities.

**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.	Not hazardous	I.M.D.G.	Not hazardous	I.C.A.O.-T.I.	Not hazardous	A.D.N.	Not hazardous
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**14.2 UN proper shipping name**

A.R.D./R.I.D.	Not hazardous	I.M.D.G.	Not hazardous
I.C.A.O.-T.I.	Not hazardous	A.D.N.	Not hazardous

**14.3 Transport hazard class(es)**

A.R.D./R.I.D.	9	I.M.D.G.	Not hazardous	I.C.A.O.-T.I.	Not hazardous	A.D.N.	Not hazardous
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**14.4 Packaging group**

A.R.D./R.I.D.	II	I.M.D.G.	Not hazardous	I.C.A.O.-T.I.	Not hazardous	A.D.N.	Not hazardous
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**14.5 Environmental hazards**

A.R.D./R.I.D.	Yes	I.M.D.G.	Not hazardous	I.C.A.O.-T.I.	Not hazardous	A.D.N.	Not hazardous
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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.