

1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS
1.1 Product Identifier

Product name: The Kryos Screen / The Kryos Screen HT-96
 Product number: MD1-133 / MD1-134
 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
 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
 H318 Causes serious eye damage
 H336 May cause drowsiness or dizziness
 H319 Causes serious eye irritation
 H302 Harmful if swallowed
 H335 May cause respiratory irritation
 H315 Causes skin irritation
 H301 Toxic if swallowed
 H330 Fatal if inhaled
 H340 May cause genetic defects
 H350 May cause cancer
 H360 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
 H373 May cause damage to organs through prolonged or repeated exposure
 H314 Causes severe skin burns and eye damage
 H360D May damage the unborn child
 H312 Harmful in contact with skin
 H332 Harmful if inhaled
 H412 Harmful to aquatic life with long-lasting effects
 EUH032 Contact with acids liberates very toxic gas
 H400 Very toxic to aquatic life
 H272 May intensify fire; oxidizer

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
 P280 Wear protective gloves/protective clothing/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
 P370+P378 In case of fire: Use appropriate media for extinction
 P403+P235 Store in a well ventilated place. Keep cool
 P301+P312+P330 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth
 P302+P352 IF ON SKIN: Wash with soap and water
 P337+P313 If eye irritation persists get medical advice/attention
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P312 Call a POISON CENTER or doctor/physician if you feel unwell
 P332+P313 If skin irritation occurs: Get medical advice/attention
 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
 P264 Wash thoroughly after handling
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P308+P313 IF exposed or concerned: Get medical advice/attention
 P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P220 Keep/Store away from clothing/combustible materials
P221 Take any precaution to avoid mixing with combustibles

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-Propanol	200-746-9	-	71-23-8	12%v/v	P210, P261, P280, P305+P351+P338	H225, H318, H336
2-Propanol	200-661-7	01-2119457558-25-XXXX	67-63-0	10%v/v	P210, P305+P351+P338, P370+P378, P403+P235	H225, H319, H336
ADA	247-530-0	01-2120760179-48-0003	26239-55-4	0.1M		
Ammonium chloride	235-186-4	01-2119489385-24-XXXX	12125-02-9	0.2M	P305+P351+P338, P301+P312+P330	H302, H319
Ammonium citrate dibasic	221-146-3	-	3012-65-5	0.2M	P261, P305+P351+P338	H319, H335
Ammonium phosphate dibasic	231-987-8	-	7783-28-0	1M		
Ammonium sulfate	231-984-1	-	7783-20-2	0.15 - 0.2 M		
BICINE	205-755-1	-	150-25-4	0.1M		
BIS-TRIS	230-237-7	-	6976-37-0	0.1M	P302+P352, P337+P313, P304+P340, P312, P280, P332+P313	H315, H319, H335
BIS-TRIS propane	264-899-3	-	64431-96-5	0.1M		
Cadmium sulfate 8/3-hydrate	233-331-6	01-2119487964-18-XXXX	7790-84-3	0.05M	P201, P260, P273, P284, P301+P310, P310	H301, H330, H340, H350, H360, H372, H410
Calcium chloride dihydrate	233-140-8	-	10035-04-8	0.2M	P305+P351+P338	H319
Citric acid	201-069-1	01-2119457026-42-XXXX	77-92-9	0.1M	P305+P351+P338	H319
DL-Malic acid	230-022-8	-	6915-15-7	0.15M	P280, P305+P351+P338, P337+P313	H319
Ethanol	200-578-6	01-2119457610-43	64-17-5	20 - 40 %v/v	P210, P264, P280, P303+P361+P353, P337+P313	H225, H319
Ethylene glycol	203-473-3	01-2119456816-28-XXXX	107-21-1	8%v/v	P280, P301+P310	H302, H373
Glycerol	200-289-5	-	56-81-5	25%v/v		
Glycine	200-272-2	01-2119864796-18-XXXX	56-40-6	0.1M		
HEPES	230-907-9	-	7365-45-9	0.1M		
HEPES sodium salt	278-169-7	-	75277-39-3	0.1M		
Hexylene glycol	203-489-0	01-2119539582-35-XXXX	107-41-5	25%v/v	P280, P305+P351+P338, P337+P313	H315, H319
Imidazole	206-019-2	01-2119485825-24-XXXX	288-32-4	0.1M	P201, P260, P280, P303+P361+P353, P305+P351+P338, P308+P313	H302, H314, H360D
Jeffamine® ED-2003	-	-	65605-36-9	0.5%w/v		
Lithium sulfate	233-820-4	-	10377-48-7	0.1 - 0.2 M	P280, P301+P312, P305+P351+P338	H302, H319
Magnesium acetate tetrahydrate	205-554-9	-	16674-78-5	0.1M		
Magnesium chloride hexahydrate	232-094-6	-	7791-18-6	0.1 - 0.2 M		
MES monohydrate	224-632-3	-	145224-94-8	0.1M		
Poly(ethylene glycol) 1000	500-038-2	-	25322-68-3	5%w/v		
Poly(ethylene glycol) 10000	500-038-2	-	25322-68-3	10%w/v		
Poly(ethylene glycol) 1500	500-038-2	-	25322-68-3	25%w/v		
Poly(ethylene glycol) 20000	500-038-2	-	25322-68-3	8 - 12 %w/v		
Poly(ethylene glycol) 3350	500-038-2	-	25322-68-3	20 - 25 %w/v		
Poly(ethylene glycol) 400	500-038-2	-	25322-68-3	25%v/v		
Poly(ethylene glycol) 4000	500-038-2	-	25322-68-3	10 - 20 %w/v		
Poly(ethylene glycol) 6000	500-038-2	-	25322-68-3	8 - 20 %w/v		
Poly(ethylene glycol) 8000	500-038-2	-	25322-68-3	8 - 20 %w/v		
Poly(ethylene glycol) methyl ether 5000	-	-	9004-74-4	10 - 20 %w/v		
Potassium bromide	231-830-3	-	7758-02-3	0.25M	P280, P305+P351+P338, P337+P313	H319
Potassium chloride	231-211-8	01-2119539416-36-XXXX	7447-40-7	0.1M		
Potassium citrate tribasic monohydrate	-	-	6100-05-6	0.2M		
Potassium formate	209-677-9	-	590-29-4	0.2M		
Potassium phosphate dibasic	231-834-5	-	7758-11-4	0.02M		
Potassium phosphate monobasic	231-913-4	01-2119490224-41-XXXX	7778-77-0	0.02M		
Potassium thiocyanate	206-370-1	-	333-20-0	0.2M	P273, P280	H302, H312, H332, H412, EUH032
Sodium acetate trihydrate	204-823-8	01-2119485123-42-XXXX	6131-90-4	0.1 - 1 M		
Sodium bromide	231-599-9	-	7647-15-6	0.2M		
Sodium chloride	231-598-3	01-2119485491-33-XXXX	7647-14-5	0.1 - 0.2 M		
Sodium citrate tribasic dihydrate	200-675-3	01-2119457027-40-XXXX	6132-04-3	0.1 - 0.2 M		
Sodium iodide	231-679-3	-	7681-82-5	0.2M	P273, P280, P305+P351+P338	H315, H319, H400
Sodium malonate dibasic monohydrate	-	-	26522-85-0	0.2 - 1.1 M		

Chemical	EC No.	REACH No.	CAS No.	Concentration	P-code(s)	H-code(s)
Sodium phosphate dibasic dihydrate	231-448-7	-	10028-24-7	0.1M		
Sodium phosphate monobasic monohydrate	231-449-2	01-2119489796-13-0045	10049-21-5	0.1M		
Sodium thiocyanate	208-754-4	-	540-72-7	0.2M	P273, P280	H302, H312, H332, H412, EUH032
Succinic acid	203-740-4	01-2119896114-34-XXXX	110-15-6	0.1M	P280, P305+P351+P338	H318
Trizma® base	201-064-4	01-2119957659-16-0024	77-86-1	0.1M		
Poly(ethylene glycol) methyl ether 550	-	-	9004-74-4	8%v/v		
Potassium nitrate	231-818-8		7757-79-1	0.2M	P210, P220, P221, P370+P378	H272

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.

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. Phosphorous oxides. Sulfur oxides. Cadmium oxides. Calcium oxides. Sodium oxides. Hydrogen cyanide gas. Lithium oxides. Magnesium oxides. Potassium oxides. Hydrogen bromide gas. Metal 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-Propanol	71-23-8	UK	250 ppm	200 ppm	EH40 WEL - Workplace Exposure Limit
2-Propanol	67-63-0	UK	500 ppm	400 ppm	EH40 WEL - Workplace Exposure Limit
Ammonium chloride	12125-02-9	UK	20 mg/m ³	10 mg/m ³	EH40 WEL - Workplace Exposure Limit
Cadmium sulfate 8/3-hydrate	7790-84-3	UK		0.025 mg/m ³	EH40 WEL - Workplace Exposure Limit
Ethanol	64-17-5	UK	3000 ppm	1000 ppm	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 ³	EH40 WEL - Workplace Exposure Limit
Hexylene glycol	107-41-5	UK	25 ppm	25 ppm	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

Eyeface 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, narcosis, skin irritation. Central nervous system depression, nausea, headache, vomiting, drowsiness. Overexposure could cause mild, reversible liver effects. Inhalation of fumes causes 'metal-fume fever': flu-like symptoms, weakness, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough, difficulty breathing. First chronic effect after exposure is kidney damage (anemia, teeth discoloura. Causes bone disease & pulmonary emphysema. Ingestion causes: headache, diarrhoea, muscular weakness, seizures, liver injury, kidney injury. Vomiting, diarrhoea, damage to tooth enamel, dermatitis. Burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Central nervous system depression, narcosis, damage to heart. 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. Material is extremely destructive to mucous membranes & upper respiratory tract. Nausea, dizziness, headache. 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. Diarrhea, vomiting, neuromuscular effects such as tremors, clonus, hyperactive reflexes. Sedation. Vomiting, diarrhoea, dehydration, congestion in internal organs. Inflammatory reactions in gastrointestinal tract. 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. 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
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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.AO.-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**
- c) **References and sources for data**
sigmaaldrich.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.