

SECTION 1 - Chemical Product & Company Identification

Product Name	Crystal Screen 2 Cryo™
Product Number	HR2-121
Company	Hampton Research
Street Address	34 Journey
City, State, Zip, Country	Aliso Viejo, CA 92656, U.S.A.
Technical Phone	949 425 1321
Fax	949 425 1611
Emergency Phone	949 425 1321
For CHEMTREC Assistance, call:	800 424 9300
For International CHEMTREC Assistance, call:	703 527 3887

SECTION 2 - Composition / Information on Ingredient

Substance Name	CAS #	EC No	SARA	RTECS	LD50
(+/-)-2-Methyl-2,4-pentanediol	107-41-5	203-489-0	No	SA0810000	3,700 mg/kg - Rat - Oral
1,4-Dioxane	123-91-1	204-661-8	Yes	JG8225000	4,200 mg/kg - Rat - Oral
1,6-Hexanediol	629-11-8	211-074-0	No	MO2100000	3,730 mg/kg - Rat - Oral
2-Propanol	67-63-0	200-661-7	Yes	NT8050000	5,045 mg/kg - Rat - Oral
Ammonium formate	540-69-2	208-753-9	Yes	BQ6650000	2,250 mg/kg - Mouse - Oral
Ammonium phosphate monobasic	7722-76-1	231-764-5	No	N/A	5,750 mg/kg - Rat - Oral
Ammonium sulfate	7783-20-2	231-984-1	No	BS4500000	2,840 mg/kg - Rat - Oral
BICINE	150-25-4	205-755-1	No	MB9700000	1,540 mg/kg - Mouse - Intraperitoneal
Cadmium chloride hydrate	654054-66-7	N/A	Yes	N/A	N/A
Cadmium sulfate hydrate	7790-84-3	233-331-6	Yes	EV2850000	N/A
Cesium chloride	7647-17-8	231-600-2	No	FK9625000	2,600 mg/kg - Rat - Oral
Cobalt(II) chloride hexahydrate	7791-13-1	231-589-4	Yes	GG0200000	766 mg/kg - Rat - Oral
Ethanol	64-17-5	200-578-6	No	KQ6300000	7,060 mg/kg - Rat - Oral
Ethylene glycol	107-21-1	203-473-3	Yes	KW2975000	4,700 mg/kg - Rat - Oral
Ethylene imine polymer	9002-98-6	205-793-9	No	N/A	N/A
Glycerol	56-81-5	200-289-5	No	MA8050000	12,600 mg/kg - Rat - Oral
HEPES	7365-45-9	230-907-9	No	TL6809000	> 316 mg/kg - Quail - Oral

(CONTINUED) - SECTION 2 - Composition / Information on Ingredient

Substance Name	CAS #	EC No	SARA	RTECS	LD50
Hexadecyltrimethylammonium bromide	57-09-0	200-311-3	No	BQ7875000	410 mg/kg - Rat - Oral
Imidazole	288-32-4	206-019-2	No	NI3325000	220 mg/kg - Rat - Oral
Iron(III) chloride hexahydrate	10025-77-1	231-729-4	No	NO5425000	260 mg/kg - Mouse - Intraperitoneal
Jeffamine® M-600®	77110-54-4	N/A	No	N/A	N/A
Lithium sulfate monohydrate	10102-25-7	233-820-4	No	N/A	N/A
Magnesium chloride hexahydrate	7791-18-6	232-094-6	No	OM2975000	8,100 mg/kg - Rat - Oral
Magnesium sulfate heptahydrate	10034-99-8	231-298-2	No	OM4508000	N/A
MES monohydrate	145224-94-8	224-632-3	No	N/A	N/A
Nickel(II) chloride hexahydrate	7791-20-0	231-743-0	Yes	QR6480000	186 mg/kg - Rat - Oral
Polyethylene glycol 400	25322-68-3	500-038-2	No	TQ3675000	N/A
Polyethylene glycol 1,000	25322-68-3	500-038-2	No	TQ4025000	32,000 mg/kg - Rat - Oral
Polyethylene glycol 6,000	25322-68-3	500-038-2	No	N/A	N/A
Polyethylene glycol 8,000	25322-68-3	500-038-2	No	TQ4105000	> 50,000 mg/kg - Rat - Oral
Polyethylene glycol 10,000	25322-68-3	500-038-2	No	TQ4110000	50,000 mg/kg - Rat - Oral
Polyethylene glycol 20,000	25322-68-3	500-038-2	No	TQ4110000	50,000 mg/kg - Rat - Oral
Polyethylene glycol monomethyl ether 550	9004-74-4	N/A	No	PE8271000	39,800 mg/kg - Rat - Oral
Polyethylene glycol monomethyl ether 2,000	9004-74-4	N/A	No	PE8271000	39,800 mg/kg - Rat - Oral
Polyethylene glycol monomethyl ether 5,000	9004-74-4	N/A	No	PE8271000	39,800 mg/kg - Rat - Oral
Potassium phosphate monobasic	7778-77-0	231-913-4	No	TC6615500	4,640 mg/kg - Rabbit - Dermal
Potassium sodium tartrate tetrahydrate	6381-59-5	206-156-8	No	N/A	N/A
Sodium acetate trihydrate	6131-90-4	204-823-8	No	AJ4580000	N/A
Sodium chloride	7647-14-5	231-598-3	No	VZ4725000	3,000 mg/kg - Rat - Oral
Sodium citrate tribasic dihydrate	6132-04-3	200-675-3	No	N/A	N/A
Sodium phosphate monobasic monohydrate	10049-21-5	231-449-2	No	N/A	N/A
tert-Butanol	75-65-0	200-869-7	Yes	EO1925000	2,743 mg/kg - Rat - Oral
Tris	77-86-1	201-064-4	No	TY2900000	5,900 mg/kg - Rat - Oral
Zinc sulfate heptahydrate	7446-20-0	231-793-3	No	ZH5300000	2,150 mg/kg - Rat - Oral

N/A = NOT AVAILABLE

SECTION 3 - Hazards Identification

HMIS RATING

HEALTH HAZARD: 0

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH HAZARD: 0

FLAMMABILITY: 0

REACTIVITY: 0

HAZARD RATINGS

0 - LEAST

1 - SLIGHT

2 - MODERATE

3 - HIGH

4 - EXTREME

For additional information on toxicity, please refer to **SECTION 11**.

SECTION 4 - First Aid Measures

ORAL EXPOSURE

- If swallowed, wash out mouth with water provided person is conscious.
- DO NOT INDUCE VOMITING.
- Call a physician.

INHALATION EXPOSURE

- If inhaled, remove to fresh air.
- If breathing is difficult, GIVE OXYGEN.
- Call a physician.

DERMAL EXPOSURE

- In case of contact, immediately wash skin with soap and copious amounts of water for at least 15 minutes.
- Take off contaminated clothing and shoes immediately.
- Call a physician.

EYE EXPOSURE

- In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.
- Assure adequate flushing by separating the eyelids with fingers.
- Call a physician.

SECTION 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMPERATURE

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

- Suitable: Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

(CONTINUED) - SECTION 5 - Fire Fighting Measures

FIREFIGHTING

- Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Specific Hazard(s): Emits toxic fumes under fire conditions.

SECTION 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTIONS

- Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

METHODS FOR CLEANING UP

- Wash spill site with soap solution. Flush spill area with copious amounts of water.
- Place in appropriate container.
- Ventilate area and wash spill site after material pickup is complete.

SECTION 7 - Handling & Storage

HANDLING

- User Exposure - Ensure adequate inhalation.
 - Avoid inhalation.
 - Avoid contact with eyes, skin, and clothing.
 - Avoid prolonged or repeated exposure.

STORAGE

- Suitable: Keep container tightly closed.

SECTION 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

- Mechanical exhaust required.
- Safety shower and eye bath

PERSONAL PROTECTIVE EQUIPMENT

- Respiratory: Use respirators and components tested and approved under appropriate government standards such as (NIOSH) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dust are desired, use type N95 (US) or type (P1) (EN 143) dust masks.
- Hand: Compatible chemical-resistant gloves.
- Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

- Wash thoroughly before and after handling.

SECTION 9 - Physical / Chemical Properties

APPEARANCE

PHYSICAL STATE: Liquid

PROPERTY

VALUE

AT TEMPERATURE OR PRESSURE

Molecular Weight	N/A
pH	N/A
BP / BP Range	N/A
MP / MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Concentration	N/A
SG / Density	N/A
Bulk Density	N/A
Volatile %	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temperature	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temperature	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = NOT AVAILABLE

SECTION 10 - Stability & Reactivity

STABILITY

- Stable: Stable under recommended storage conditions.

HAZARDOUS DECOMPOSITION PRODUCTS

- No data available.

HAZARDOUS EXOTHERMIC REACTIONS

- Will not occur.

(CONTINUED) - SECTION 10 - Stability & Reactivity

HAZARDOUS POLYMERIZATION

- Will not occur.

SECTION 11 - Toxicological Information

ACUTE TOXICITY

- No data available.

IRRITATION AND CORROSION

- No data available.

SENSITISATION

- No data available.

CHRONIC EXPOSURE

- No data available.

ROUTE OF EXPOSURE

- Skin Contact: May cause skin irritation
- Skin Absorption: May be harmful if absorbed through the skin.
- Eye Contact: May cause eye irritation.
- Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.
May be harmful if inhaled.
- Ingestion: May be harmful if swallowed.

SIGNS & SYMPTOMS OF EXPOSURE

- To the best of our knowledge, the chemical, physical, and toxicological properties have NOT been thoroughly investigated.

SECTION 12 - Ecological Information

- No data available.

SECTION 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

- Contact a licensed professional waste disposal service to dispose of this material.
- Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and a scrubber.
- Observe all federal, state, and local environmental regulations.

SECTION 14 - Transportation Information

DOT (US)

- UN- Number: 3316
- Class: N/A
- Proper Shipping Name: Chemical kits or First aid kits (containing hazardous materials)
- Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

- UN- Number: 3316
- Class: N/A
- Proper Shipping Name: Chemical kits or First aid kits (containing hazardous materials)
- Non-Hazardous for Transport: Non-hazardous for air transport.

SECTION 15 - Regulatory Information

OSHA HAZARDS

- N/A

TSCA STATUS

- N/A

EU ADDITIONAL INFORMATION

Substance Name	CAS #	HAZARD Code	R-Phrase	S-Phrase
(+/-)-2-Methyl-2,4-pentanediol	107-41-5	Xi	36/38	26-36
1,4-Dioxane	123-91-1	F, Xn	11-19-36/37-40-66	9-16-36/37-46
1,6-Hexanediol	629-11-8			23-24/25-36/37
2-Propanol	67-63-0	F, Xi	11-36-67	7-16-24/25-26
Ammonium formate	540-69-2	Xi	36/37/38	26-36
Ammonium phosphate monobasic	7722-76-1			
Ammonium sulfate	7783-20-2			
BICINE	150-25-4			
Cadmium chloride hydrate	654054-66-7	T+, N	45-46-60-61-25-26-48/23/25-50/53	53-45-60-61
Cadmium sulfate hydrate	7790-84-3	T+, N	45-46-60-61-25-26-48/23/25-50/53	53-45-60-61
Cesium chloride	7647-17-8			
Cobalt(II) chloride hexahydrate	7791-13-1	T, N	49-22-42/43-50/53	53-22-45-60-61
Ethanol	64-17-5	F	11	7-16
Ethylene glycol	107-21-1	Xn	22	
Ethylene imine polymer	9002-98-6			
Glycerol	56-81-5			
HEPES	7365-45-9			
Hexadecyltrimethylammonium bromide	57-09-0	Xn, N	22-37/38-41-50	26-39-61
Imidazole	288-32-4	C	22-34	26-36/37/39-45

(CONTINUED) - SECTION 15 - Regulatory Information**EU ADDITIONAL INFORMATION**

Substance Name	CAS #	HAZARD Code	R-Phrase	S-Phrase
Iron(III) chloride hexahydrate	10025-77-1	Xn	22-38-41	26-39
Jeffamine® M-600®	77110-54-4	Xn	21/22-36/38	26-36/37
Lithium sulfate monohydrate	10102-25-7	Xn	22	
Magnesium chloride hexahydrate	7791-18-6			
Magnesium sulfate heptahydrate	10034-99-8			
MES monohydrate	145224-94-8	Xi	36/37/38	26-36
Nickel(II) chloride hexahydrate	7791-20-0	T, N	45-25-36/38-43-50/53	53-36/37-45-60-61
Polyethylene glycol 400	25322-68-3			
Polyethylene glycol 1,000	25322-68-3			
Polyethylene glycol 6,000	25322-68-3			
Polyethylene glycol 8,000	25322-68-3			
Polyethylene glycol 10,000	25322-68-3			
Polyethylene glycol 20,000	25322-68-3			
Polyethylene glycol monomethyl ether 550	9004-74-4			
Polyethylene glycol monomethyl ether 2,000	9004-74-4			
Polyethylene glycol monomethyl ether 5,000	9004-74-4			
Potassium phosphate monobasic	7778-77-0			
Potassium sodium tartrate tetrahydrate	6381-59-5			22-24/25
Sodium acetate trihydrate	6131-90-4			
Sodium chloride	7647-14-5			
Sodium citrate tribasic dihydrate	6132-04-3			
Sodium phosphate monobasic monohydrate	10049-21-5			
tert-Butanol	75-65-0	F, Xn	11-20	9-16
Tris	77-86-1	Xi	36	26
Zinc sulfate heptahydrate	7446-20-0	Xn	22-41-50/53	22-26-39-46-60-61

UNITED STATES REGULATORY INFORMATION

- SARA LISTED: No
- SARA LISTED: For additional information on toxicity, please refer to **SECTION 2**.
- TSCA INVENTORY ITEM: N/A

CANADA REGULATORY INFORMATION

- WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

SECTION 16 - Other Information

DISCLAIMER

- For R&D use only. Not for drug, household, or other use.

WARRANTY

• The above information is believed to be correct but does no 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 this product. Hampton Research Corp., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

- License granted to make unlimited paper copies for internal use only.

© 1991-2009 Hampton Research Corp.