

## SECTION 1 - Chemical Product & Company Identification

|                                                     |                               |
|-----------------------------------------------------|-------------------------------|
| Product Name                                        | Crystal Screen Cryo HT™       |
| Product Number                                      | HR2-133                       |
| 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 <b>CHEMTREC</b> Assistance, call:               | 800 424 9300                  |
| For International <b>CHEMTREC</b> 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 acetate                | 631-61-8    | 211-162-9 | Yes  | AF3675000 | 736 mg/kg - Mouse - Intraperitoneal   |
| 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                                   |
| Calcium acetate hydrate         | 114460-21-8 | 200-540-9 | No   | AF7525000 | 75 mg/kg - Mouse - Intraperitoneal    |
| Calcium chloride dihydrate      | 10035-04-8  | 233-140-8 | No   | EV9810000 | 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            |
| HEPES sodium                    | 75277-39-3  | 278-169-7 | No   | N/A       | N/A                                   |

**(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 acetate tetrahydrate             | 16674-78-5  | 205-554-9 | No   | AI5600000 | 111 mg/kg - Mouse - Intravenous     |
| Magnesium chloride hexahydrate             | 7791-18-6   | 232-094-6 | No   | OM2975000 | 8,100 mg/kg - Rat - Oral            |
| Magnesium formate dihydrate                | 557-39-1    | N/A       | No   | N/A       | N/A                                 |
| 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 1,500                  | 25322-68-3  | 500-038-2 | No   | TQ4030000 | 44,200 mg/kg - Rat - Oral           |
| Polyethylene glycol 4,000                  | 25322-68-3  | 500-038-2 | No   | TQ4050000 | 50,000 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 cacodylate trihydrate               | 6131-99-3   | 204-708-2 | Yes  | CH7890000 | 2,000 mg/kg - Rat - Oral            |
| 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 formate                             | 141-53-7    | 205-488-0 | No   | LR0350000 | 11,200 mg/kg - Mouse - Oral         |
| 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            |
| TRIS hydrochloride                         | 1185-53-1   | 214-684-5 | No   | N/A       | N/A                                 |
| Zinc acetate dihydrate                     | 5970-45-6   | 209-170-2 | No   | ZG8750000 | 794 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 |
| Odor Threshold                | 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 acetate                | 631-61-8    |             |                                  |                |
| 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    |
| Calcium acetate hydrate         | 114460-21-8 | Xi          | 36/37/38                         | 26-36          |
| Calcium chloride dihydrate      | 10035-04-8  | Xi          | 36                               | 26             |
| 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   |             |                                  |                |
| HEPES sodium                    | 75277-39-3  |             | 22-24/25                         |                |

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

| <b>Substance Name</b>                      | <b>CAS #</b> | <b>HAZARD Code</b> | <b>R-Phrase</b>      | <b>S-Phrase</b>   |
|--------------------------------------------|--------------|--------------------|----------------------|-------------------|
| 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    |
| 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 acetate tetrahydrate             | 16674-78-5   |                    |                      | 22-24/25          |
| Magnesium chloride hexahydrate             | 7791-18-6    |                    |                      |                   |
| Magnesium formate dihydrate                | 557-39-1     |                    |                      |                   |
| 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 1,500                  | 25322-68-3   |                    |                      |                   |
| Polyethylene glycol 4,000                  | 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 cacodylate trihydrate               | 6131-99-3    | T, N               | 23/25-50/53          | 20/21-28-45-60-61 |
| Sodium chloride                            | 7647-14-5    |                    |                      |                   |
| Sodium citrate tribasic dihydrate          | 6132-04-3    |                    |                      |                   |
| Sodium formate                             | 141-53-7     |                    |                      |                   |
| 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                |
| TRIS hydrochloride                         | 1185-53-1    | Xi                 | 36/37/38             | 26-36             |
| Zinc acetate dihydrate                     | 5970-45-6    | Xn, N              | 22-36-50/53          | 26-60-61          |
| Zinc sulfate heptahydrate                  | 7446-20-0    | Xn, N              | 22-41-50/53          | 22-26-39-46-60-61 |
|                                            |              |                    |                      |                   |
| <b>N/A = NOT AVAILABLE</b>                 |              |                    |                      |                   |

## **(CONTINUED) - SECTION 15 - Regulatory Information**

### **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.

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