**Section 1 - Chemical Product and Company Identification**

**Manufacturer Information**
VENTANA MEDICAL SYSTEMS INC.
1910 E. Innovation Park Drive
Tucson, AZ 85755
Phone: (520) 887-2155

**Material Name:** ultraView Universal Alkaline Phosphatase Red Fast Red B

**Product Number(s)**
253-4330, 760-501, 05262461001, 06099157001

**Product Use**
clinical/research

**Section 2 - Hazards Identification**

**NFPA Ratings:**
- **Health:** 1
- **Fire:** 0
- **Reactivity:** 0

**Hazard Scale:** 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe

**Preparation**
Xi; R:43

**Risks**
May cause sensitization by skin contact.

**Emergency Overview**
- **Color:** red
- **Physical Form:** liquid
- **Major Health Hazards:** No significant target effects reported.

**Potential Health Effects**

**Inhalation**
- **Short Term:** no information on significant adverse effects
- **Long Term:** no information on significant adverse effects

**Skin**
- **Short Term:** allergic reactions
- **Long Term:** no information on significant adverse effects

**Eye**
- **Short Term:** no information on significant adverse effects
- **Long Term:** no information on significant adverse effects

**Ingestion**
- **Short Term:** no information on significant adverse effects
- **Long Term:** no information on significant adverse effects

**OSHA Regulatory Status**
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Section 3 - Composition/Information on Ingredients**

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component / EU Number</th>
<th>Percent</th>
<th>Symbol(s)</th>
<th>Risk Phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Non-hazardous Components</td>
<td>60-100</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>86780-25-8</td>
<td>Fast Red KL Salt</td>
<td>&lt;1</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>64-19-7</td>
<td>Acetic acid 200-580-7</td>
<td>&lt;1</td>
<td>C</td>
<td>R:10-35</td>
</tr>
</tbody>
</table>

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Material Safety Data Sheet

Material Name: ultraView Universal Alkaline Phosphatase Red Fast Red B

MSDS ID: 00232564

<table>
<thead>
<tr>
<th>Material Name</th>
<th>Purity</th>
<th>MSDS ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>55965-84-9 Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl-&lt;0.01 T N with 2-methyl-3(2H)-isothiazolone R:23/24/25-34-43-50/53</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** Section 4 - First Aid Measures***

**Inhalation**
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**Skin**
Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing before reuse. Get medical attention, if needed.

**Eyes**
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion**
If a large amount is swallowed, get medical attention.

*** Section 5 - Fire-Fighting Measures***

**Flammable Properties**
Negligible fire hazard.

**Extinguishing Media**
Use extinguishing agents appropriate for surrounding fire.

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products.

**Sensitivity to Mechanical Impact**
Not sensitive

**Sensitivity to Static Discharge**
Not sensitive

*** Section 6 - Accidental Release Measures***

**Occupational Spill/Release**
Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

*** Section 7 - Handling and Storage***

**Handling Procedures**
Wash thoroughly after handling.

**Storage Procedures**
Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.
**Section 8 - Exposure Controls/Personal Protection**

**Exposure Limits**

Acetic acid (64-19-7)

- **ACGIH:**
  - 10 ppm TWA
  - 15 ppm STEL
- **NIOSH:**
  - 10 ppm TWA; 25 mg/m3 TWA
  - 15 ppm STEL; 37 mg/m3 STEL
  - 50 ppm IDLH
- **OSHA:**
  - 10 ppm TWA; 25 mg/m3 TWA
  - 10 ppm STEL; 25 mg/m3 STEL
- **EEC:**
  - 10 ppm TWA; 25 mg/m3 TWA
- **Austria:**
  - 20 ppm STEL (8 X 5 min); 50 mg/m3 STEL (8 X 5 min)
  - 10 ppm MAK; 25 mg/m3 MAK
- **Belgium:**
  - 15 ppm STEL; 38 mg/m3 STEL
  - 10 ppm TWA; 25 mg/m3 TWA
- **Denmark:**
  - 10 ppm TWA; 25 mg/m3 TWA
- **Finland:**
  - 10 ppm STEL; 25 mg/m3 STEL
  - 5 ppm TWA; 13 mg/m3 TWA
- **France:**
  - 10 ppm VLCT; 25 mg/m3 VLCT
- **Germany:**
  - 10 ppm TWA (exposure factor 2); 25 mg/m3 TWA (exposure factor 2)
  - 10 ppm MAK; 25 mg/m3 MAK
  - 20 ppm Peak; 50 mg/m3 Peak
- **Greece:**
  - 15 ppm STEL; 37 mg/m3 STEL
  - 10 ppm TWA; 25 mg/m3 TWA
- **Ireland:**
  - 15 ppm STEL; 37 mg/m3 STEL
  - 10 ppm TWA; 25 mg/m3 TWA
- **Japan:**
  - 10 ppm OEL; 25 mg/m3 OEL
- **Portugal:**
  - 10 ppm TWA
  - 15 ppm STEL
- **Spain:**
  - 15 ppm VLA-EC; 37 mg/m3 VLA-EC
  - 10 ppm VLA-ED; 25 mg/m3 VLA-ED
- **Sweden:**
  - 5 ppm LLV; 13 mg/m3 LLV
  - 10 ppm STV; 25 mg/m3 STV

**Ventilation**

Provide adequate ventilation. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes/Face**

Safety glasses or goggles are recommended when there is a potential for eye contact. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Protective Clothing**

Lab coat or apron.

**Glove Recommendations**

Wear appropriate chemical resistant gloves.

**Respiratory Protection**

No respirator is required under normal conditions of use.
**Section 9 - Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Red</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>3.32</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not flammable</td>
</tr>
<tr>
<td>LEL</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Density</td>
<td>0.99 g/mL</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>miscible</td>
</tr>
<tr>
<td>Coeff. Water/Oil Dist.</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Section 10 - Stability and Reactivity**

**Chemical Stability**

Stable at normal temperatures and pressure.

**Conditions to Avoid**

None reported.

**Materials to Avoid**

None known.

**Decomposition Products**

miscellaneous decomposition products

**Possibility of Hazardous Reactions**

Will not polymerize.

**Section 11 - Toxicological Information**

**Acute and Chronic Toxicity**

**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

- **Acetic acid (64-19-7)**
  - Inhalation LC50 Rat 11.4 mg/L 4 h; Oral LD50 Rat 3310 mg/kg; Dermal LD50 Rabbit 1060 mg/kg
  - Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)
    - Oral LD50 Rat 53 mg/kg

**RTECS Acute Toxicity (selected)**

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

**Acute Toxicity Level**

- **Acetic acid (64-19-7)**
  - Toxic: inhalation
  - Moderately Toxic: dermal absorption, ingestion

- Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)
  - Toxic: ingestion

**Irritation/Corrosivity**

**RTECS Irritation**

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.
Local Effects
- **Fast Red KL Salt (86780-25-8)**
  - Irritant: skin
- **Acetic acid (64-19-7)**
  - Corrosive: inhalation, skin, eye, ingestion
- **Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)**
  - Corrosive: inhalation, skin, eye, ingestion

Target Organs
- **Fast Red KL Salt (86780-25-8)**
  - Immune system (sensitizer)
- **Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)**
  - Immune system (sensitizer)

Carcinogenicity
- **Component Carcinogenicity**
  - **Acetic acid (64-19-7)**
    - Denmark: Present

Mutagenic
- No data available for the mixture.

RTECS Mutagenic
- The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects
- No data available for the mixture.

RTECS Reproductive Effects
- The components of this material have been reviewed, and RTECS publishes data for one or more components.

Tumorigenic
- No data available for the mixture.

RTECS Tumorigenic
- The components of this material have been reviewed, and RTECS publishes data for one or more components.

Medical Conditions Aggravated by Exposure
- None known.

*** Section 12 - Ecological Information ***

Component Analysis - Aquatic Toxicity
- **Acetic acid (64-19-7)**
  - **Fish:** 96 Hr LC50 Pimephales promelas: 79 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 75 mg/L [static]
  - **Invertebrate:** 24 Hr EC50 Daphnia magna: 47 mg/L; 48 Hr EC50 Daphnia magna: 65 mg/L [Static]

Mobility
- No data available for the mixture.

Persistence & Degradation
- No data available for the mixture.

Bioaccumulative Potential
- No data available for the mixture.

*** Section 13 - Disposal Considerations ***

Disposal Methods
- Dispose in accordance with all applicable regulations.

Component Waste Numbers
- The U.S. EPA has not published waste numbers for this product's components.
**Section 14 - Transport Information**

- **US DOT Information**: Not regulated.
- **TDG Information**: Not regulated.
- **ADR Information**: Not regulated.
- **RID Information**: Not regulated.
- **IATA Information**: Not regulated.
- **ICAO Information**: Not regulated.
- **IMDG Information**: Not regulated.

**Section 15 - Regulatory Information**

**U.S. Federal Regulations**
This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

- **Acetic acid (64-19-7)**
  - CERCLA: 5000 lb final RQ; 2270 kg final RQ

**SARA 311/312**
- **Acute Health**: No
- **Chronic Health**: No
- **Fire**: No
- **Pressure**: No
- **Reactive**: No

**U.S. State Regulations**
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component / EC Number</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**California Proposition 65**
Not regulated under California Proposition 65

**Canadian Regulations**
Not a Controlled Product under Canada's Workplace Hazardous Material Information System.

**WHMIS Classification**
Not a Controlled Product under Canada's Workplace Hazardous Material Information System.

**European Regulations**
This preparation has been classified for the European Union according to Annex VI Directives 67/548/EEC and 99/45/EC.

**Germany Water Classification**
- **Acetic acid (64-19-7)**
  - ID Number 93, hazard class 1 - low hazard to waters (>25%)
- **Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)**
  - ID Number 2959, hazard class 3 - severe hazard to waters

**EU Marking and Labelling**

- **Risk Phrases**: R43 May cause sensitization by skin contact.
- **EU Symbols**: Xi Irritant
- **Safety Phrases**: S24 Avoid contact with skin.
  - S37 Wear suitable gloves.
Japanese Regulations

Japan Designated Chemical Substances (PRTR Law)

No components of this material are subject to reporting requirements as specified by the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management" nor are they included in the "Pollutant Release and Transfer Register (PRTR)" of designated chemicals.

Japan Poisonous and Deleterious Substances

No components of this material are specified as poisonous or deleterious substances, as regulated by Japan under the Poisonous and Deleterious Substances Control Law.

Industrial Safety and Health Law - Flammable Materials

The following components are identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

Acetic acid (64-19-7)
Flammable substance

Industrial Safety and Health Law - Label Disclosure

No components of this material are specifically required to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.

Industrial Safety and Health Law - Organic Solvents

No components of this material are specifically identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

*** Section 16 - Other Information***

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOEL - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R10 Flammable.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R34 Causes burns.
R35 Causes severe burns.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other Information

Limitations: The information and recommendations set forth in this MSDS are believed to be correct as of this date. Ventana Medical Systems, Inc. makes no warranty with respect to the
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New MSDS: 05/21/2007
MSDS Update: 12/8/2010

End of Sheet 00232564