Material Safety Data Sheet
Reactive Skin Decontamination Lotion (RSDL)

1. Product and company identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Reactive Skin Decontamination Lotion (RSDL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>V-F5402</td>
</tr>
<tr>
<td>Material uses</td>
<td>RSDL has been cleared by the Food and Drug Administration as a medical device for the decontamination of skin exposed to chemical warfare agents and certain biological toxins.</td>
</tr>
<tr>
<td>Supplier/Manufacturer</td>
<td>E-Z-EM Inc., a subsidiary of Bracco Diagnostics Inc. 11065 L.-H.-Lafontaine Blvd. Anjou, Quebec, Canada H1J 2Z4 Tel: 514-353-5820 Fax: 514-353-9938</td>
</tr>
</tbody>
</table>

In case of emergency: 514-353-5820

2. Hazards identification

Emergency overview

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid. [Clear solution.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellow. / Brown. / Orange.</td>
</tr>
<tr>
<td>Signal word</td>
<td>CAUTION!</td>
</tr>
<tr>
<td>Hazard statements</td>
<td>MAY CAUSE EYE AND SKIN IRRITATION.</td>
</tr>
<tr>
<td>Precautionary measures</td>
<td>Avoid contact with eyes and mucous membranes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.</td>
</tr>
<tr>
<td>OSHA/HCS status</td>
<td>While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.</td>
</tr>
</tbody>
</table>

Potential acute health effects

Inhalation: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.
Skin: May cause skin irritation.
Eyes: May cause eye irritation.

Potential chronic health effects

Chronic effects: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
General: For external use only. Not for prophylactic use or whole body decontamination. Not a substitute for proper protective breathing devices and garments. Avoid unnecessary contact with eyes and mucous membrane. RSDL should not be used for wound decontamination because its effects on wounds and effects resulting from its absorption through the wound have not been studied.
Absorption: Avoid extended contact with the skin. One of the ingredients (DAM) is absorbed through the skin. Studies with RSDL up to 84ml left on the skin for 24 hours showed minimal adverse effects. Studies beyond this point have not been conducted. Do not use RSDL for whole body decontamination.
2. Hazards identification

Pregnancy: RSDL should be used during pregnancy only when necessary; one of the ingredients, 2,3 butanedione monoxime (DAM) has been shown to cross the placental barrier in animal studies.¹ Animal reproduction studies have shown RSDL to be non toxic for all of the reproductive parameters examined, including the neonates - RSDL is not teratogenic, not spermicidal, and not embriocidal.² No human studies on pregnant women have been conducted.

². One-Generation Reproduction Study of RSDL in Rat; Southern Research Study Number: 9200.05.01 February 13, 2003. Southern Research Institute, Birmingham Alabama.

Over-exposure signs/symptoms

Inhalation: No specific data.
Ingestion: No specific data.
Skin: No specific data.
Eyes: Adverse symptoms may include the following: irritation, watering, redness.

Medical conditions aggravated by over-exposure: None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>CAS number</td>
<td>%</td>
</tr>
<tr>
<td>Methoxy polyethylene glycol 550</td>
<td>9004-74-4</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Dekon 139</td>
<td>Patent 57-71-6</td>
<td>10 - 30</td>
</tr>
<tr>
<td>DAM</td>
<td>0.58</td>
<td></td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact: Wash with water.
Skin contact: Wash with soap and water when conditions permit.
Inhalation: Move exposed person to fresh air.
Ingestion: No emergency care anticipated.
Protection of first-aiders: Wear gloves.
Notes to physician: No specific treatment. Treat symptomatically.

5. Fire-fighting measures

Flammability of the product: No specific fire or explosion hazard when used on its own. The RSDL vehicle (MPEG) when combined with some commonly used decontamination materials, i.e., solid powdered HTH (calcium hypochlorite) or solid powdered Super Tropical Bleach, causes spontaneous combustion. Refer to section 10 for flammability hazards.

Extinguishing media

Suitable: Use dry chemical, CO₂, water spray (fog) or foam.
Not suitable: Do not use water jet.
Reactive Skin Decontamination Lotion (RSDL)

5. Fire-fighting measures

Hazardous decomposition products: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions: Provide adequate ventilation. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Spill: Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact with eyes and mucous membranes. Empty containers retain product residue and can be hazardous.

Storage: Store in accordance with local regulations. Storage temperature should be between 15°C to 30°C. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Specific uses: The full strength solution is applied on body surfaces after exposure to chemical warfare agents (RSDL should not be used before exposure since its effectiveness following prophylactic use has not been evaluated). Generally, one 21 ml packet is sufficient to decontaminate hands, neck, and face. The packaging and sponge should be discarded after a single use, in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.

8. Exposure controls/personal protection

United States

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary</td>
<td>AIHA WEEL (United States, 5/2010). TWA: 10 mg/m³ 8 hour(s). Form: Aerosol</td>
</tr>
</tbody>
</table>

Canada

<table>
<thead>
<tr>
<th>Occupational exposure limits</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient</td>
<td>List name</td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Proprietary</td>
<td>US AIHA 5/2010</td>
<td>-</td>
<td>10</td>
</tr>
</tbody>
</table>

Form: [a]Aerosol

Consult local authorities for acceptable exposure limits.
8. Exposure controls/personal protection

**Recommended monitoring procedures**
- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Engineering measures**
- No special ventilation requirements.

**Hygiene measures**
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, drinking, smoking and using the lavatory and at the end of the working period.

**Personal protection**

**Respiratory**
- Not required under normal conditions of use.

**Hands**
- None required.

**Eyes**
- safety glasses or goggles.

**Skin**
- None required.

**Environmental exposure controls**
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9. Physical and chemical properties

**Physical state**
- Liquid. [Clear solution.]

**Flash point**
- Open cup: 238°C (460.4°F) [Cleveland.]

**Flammable limits**
- Lower: 1.1%
- Upper: 6.9%

**Color**
- Yellow. / Brown. / Orange.

**pH**
- 10.35 to 10.85

**Boiling/condensation point**
- Decomposition temperature: >200°C (>392°F)

**Freezing point**
- 0°C (32°F)

**Relative density**
- 1.1

**Vapor pressure**
- <0.0013 kPa (<0.01 mm Hg) [20°C]

**Vapor density**
- >1 [Air = 1]

**Evaporation rate**
- 0 (butyl acetate = 1)

**Viscosity**
- Dynamic: 1.14 mPa·s (1.14 cP)

**Solubility**
- Soluble

10. Stability and reactivity

**Chemical stability**
- The product is stable.

**Conditions to avoid**
- The RSDL vehicle (MPEG) when combined with some commonly used decontamination materials, i.e., solid powdered HTH (calcium hypochlorite) or solid powdered Super Tropical Bleach, causes spontaneous combustion. Should RSDL be used on the same decontamination line as either of these products, care must be taken to keep them apart. Do not discard RSDL packaging and sponge into containers that contain or have contained HTH or Super Tropical Bleach.

**Incompatible materials**
- Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.

**Hazardous decomposition products**
- Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides.

**Possibility of hazardous reactions**
- Under normal conditions of storage and use, hazardous reactions will not occur.
11. Toxicological information

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive Skin Decontamination Lotion (RSDL)</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;950 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Chronic toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dekon 139</td>
<td>Chronic LD50 Dermal</td>
<td>Rat</td>
<td>1286 mg/kg</td>
<td>5 weeks</td>
</tr>
</tbody>
</table>

**IDLH** : Not available.

**Synergistic products** : Not available.

12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

13. Disposal considerations

**Waste disposal** : Do not dump into sewers, on the ground, or any body of water. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.

E-Z-EM Inc., a subsidiary of Bracco Diagnostics Inc. has no control on the management practices of parties handling or using this material. The information presented here pertains only to the product as shipped in its intended condition as described in section 3 of this MSDS (Composition / Information on ingredients).

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

**International transport regulations**

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IATA-DGR Class</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG* : Packing group

Exemption to the above classification may apply. AERG : Not available.

15. Regulatory information

**United States**

**HCS Classification** : Not regulated.

**U.S. Federal regulations**

United States inventory (TSCA 8b) : Not determined.

SARA 302/304/311/312 extremely hazardous substances : No products were found.

SARA 302/304 emergency planning and notification : No products were found.

SARA 302/304/311/312 hazardous chemicals : No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification : No products were found.
# 15. Regulatory information

<table>
<thead>
<tr>
<th>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</th>
<th>Not listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Air Act Section 602 Class I Substances</td>
<td>Not listed</td>
</tr>
<tr>
<td>Clean Air Act Section 602 Class II Substances</td>
<td>Not listed</td>
</tr>
<tr>
<td>DEA List I Chemicals (Precursor Chemicals)</td>
<td>Not listed</td>
</tr>
<tr>
<td>DEA List II Chemicals (Essential Chemicals)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**State regulations**

| Massachusetts                                                                 | None of the components are listed. |
| New York                                                                     | None of the components are listed. |
| New Jersey                                                                   | None of the components are listed. |
| Pennsylvania                                                                 | None of the components are listed. |

**California Prop. 65**

No products were found.

**Canada**

<table>
<thead>
<tr>
<th>WHMIS (Canada)</th>
<th>Not controlled under WHMIS (Canada).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canadian lists</strong></td>
<td></td>
</tr>
<tr>
<td>Canadian NPRIs</td>
<td>None of the components are listed.</td>
</tr>
<tr>
<td>CEPA Toxic substances</td>
<td>None of the components are listed.</td>
</tr>
<tr>
<td><strong>Canada inventory</strong></td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**International regulations**

<table>
<thead>
<tr>
<th>International lists</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia inventory (AICS)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>China inventory (IECSC)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Japan inventory</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Korea inventory</td>
<td>Not determined.</td>
</tr>
<tr>
<td>New Zealand Inventory of Chemicals (NZIoC)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Philippines inventory (PICCS)</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

Directive 67/548/EEC and its modifications, adaptations and later transpositions: This product is not dangerous in the sense of this Directive.

EINECS: This product is not included in EINECS. This product is not required to be included in EINECS.
16. Other information

Label requirements : MAY CAUSE EYE AND SKIN IRRITATION.

Hazardous Material : Health : 0  Flammability : 1  Physical hazards : 0
Information System (U.S.A.)

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection : Health : 0  Flammability : 1  Instability : 0
Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Document History

Date of issue mm/dd/yyyy : 07/01/2011
Date of previous issue : 10/23/2006
Version : 2

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Conforms to ANSI Z400.1-2004 Standard