

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

076653836

N/A

## Safety Data Sheet

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010)

Date Issued: 22 June 2009  
Document Number: 10404MS  
Date Revised: 6 December 2011  
Revision Number: 2


### 1. PRODUCT IDENTIFICATION

|                                                |                                                                                      |
|------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Trade Name (as labeled):</b>                | <b>Dry Socket Paste</b>                                                              |
| <b>Chemical Name/Classification:</b>           | Mixture of organic compounds                                                         |
| <b>Product Identifier (Part/Item Number):</b>  | 10404 (1oz)                                                                          |
| <b>U.N. Number:</b>                            | None                                                                                 |
| <b>U.N. Dangerous Goods Classification:</b>    | None                                                                                 |
| <b>Recommended Use:</b>                        | Topical anesthetic                                                                   |
| <b>Restrictions on Use:</b>                    | Use only as directed                                                                 |
| <b>Manufacturer/Supplier Name:</b>             | Sultan Healthcare                                                                    |
| <b>Manufacturer/Supplier Address:</b>          | 411 Hackensack Avenue, 9 <sup>th</sup> Floor<br>Hackensack, NJ                       |
| <b>Manufacturer/Supplier Telephone Number:</b> | 1-201-871-1232 or 800-637-8582 (Product Information)                                 |
| <b>Emergency Contact Telephone Number:</b>     | 800-535-5053 (INFOTRAC)<br>1-352-323-3500 (Outside the United States – Call Collect) |
| <b>Email address:</b>                          | <a href="mailto:customer.service@sultanhc.com">customer.service@sultanhc.com</a>     |

### 2. HAZARD(s) IDENTIFICATION

**EU Classification (1999/45/EC as amended):** Irritant (Xi) R43

**EU Labeling:**

|                                                                                                 |                                                                                                                                      |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <br>Irritant | R43 May cause sensitization by skin contact.<br>S24 Avoid contact with skin.<br>S36/37 Wear suitable protective clothing and gloves. |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

**US Hazard Classification:** Hazardous

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

| Hazardous Components     | C.A.S. #<br>EC#        | IUPAC Name                          | Substance Classification<br>67/548/EEC<br>(EC) No 1272/2008                                 | WT % |
|--------------------------|------------------------|-------------------------------------|---------------------------------------------------------------------------------------------|------|
| Guaiacol                 | 90-05-1 /<br>201-964-7 | 2-methoxyphenol                     | Xn, Xi, R22, R36/38<br>Acute Tox. 4 (H302),<br>Eye Irrit. 2 (H319),<br>Skin Irrit. 2 (H315) | 1-5  |
| Eugenol                  | 97-53-0 /<br>202-589-1 | 2-methoxy-4-prop-2-enylphenol       | Xn, Xi R22, R38, R43                                                                        | 1-5  |
| Chlorobutanol, anhydrous | 57-15-8 /<br>200-317-6 | 1,1,1-Trichloro-2-methyl-2-propanol | Xn R22, R36/38                                                                              | 1-2  |





Refer to Section 16 for the full text of the EU Classifications and R Phrases.

### 4. FIRST-AID MEASURES

| Routes of Exposure                                                                                                                                               | First Aid Instructions                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye                                                                                                                                                              | Flush eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.             |
| Skin                                                                                                                                                             | Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if symptoms develop and persist. |
| Inhalation                                                                                                                                                       | None needed under normal use conditions. If irritation develops, remove to fresh air. Get medical attention if symptoms persist.                        |
| Ingestion                                                                                                                                                        | If swallowed, rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.                                     |
| Most important symptoms of exposure                                                                                                                              | May cause eye and skin irritation. May cause allergic skin reaction. May be harmful if swallowed.                                                       |
| Other                                                                                                                                                            | Contact with skin or mucous membranes may cause numbness.                                                                                               |
| <b>Note to Physicians (Treatment, Testing, and Monitoring):</b> Treatment of overexposure should be directed at the control of symptoms and clinical conditions. |                                                                                                                                                         |

### 5. FIRE-FIGHTING MEASURES

|                                                    |                                                                                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media:</b>               | Use media appropriate for surrounding fire.                                                                                                   |
| <b>Fire Fighting Procedures:</b>                   | Cool fire exposed containers and structures with water.                                                                                       |
| <b>Specific Hazards Arising from the Chemical:</b> | None known.                                                                                                                                   |
| <b>Precautions for Fire Fighters:</b>              | Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for all fires involving chemicals. |



| Recommended Protective Equipment for Fire Fighters:                               |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| EYES/FACE                                                                         | SKIN                                                                              | RESPIRATORY                                                                        | THERMAL                                                                             |
|  |  |  |  |

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, PPE and Emergency Procedures:** For spills, wear gloves and eye protection.

**Environmental Precautions:** Prevent spill from entering sewers and water courses. Report releases as required by local and national authorities.

**Methods and Materials for Containment and Clean-up:** Wipe up with a paper towel and place into an appropriate container for disposal.

| Recommended Personal Protective Equipment for Containment and Clean-up:             |                                                                                     |             |         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------|---------|
| EYES/FACE                                                                           | SKIN                                                                                | RESPIRATORY | THERMAL |
|  |  |             |         |

## 7. HANDLING AND STORAGE

**Precautions for Safe Handling:** Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use in accordance with package instructions.

**Conditions for Safe Storage:** Store in a cool, dry, well ventilated area away. Keep containers tightly closed. Protect from physical damage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits:

|                          |                |                  |
|--------------------------|----------------|------------------|
| Chlorobutanol, anhydrous | United States  | None Established |
|                          | Germany        | None Established |
|                          | United Kingdom | None Established |
|                          | France         | None Established |
|                          | Spain          | None Established |
|                          | Italy          | None Established |
|                          | European Union | None Established |

|          |                |                  |
|----------|----------------|------------------|
| Guaiacol | United States  | None Established |
|          | Germany        | None Established |
|          | United Kingdom | None Established |
|          | France         | None Established |
|          | Spain          | None Established |
|          | Italy          | None Established |
|          | European Union | None Established |

|         |                |                  |
|---------|----------------|------------------|
| Eugenol | United States  | None Established |
|         | Germany        | None Established |
|         | United Kingdom | None Established |
|         | France         | None Established |
|         | Spain          | None Established |
|         | Italy          | None Established |
|         | European Union | None Established |

**Biological Exposure Limits:** None Established

**Appropriate Engineering Controls:** No special controls required.



### Individual Protection Measures (PPE)

**Specific Eye/face Protection:** Safety glasses should be worn if contact is likely.

**Specific Skin Protection:** Wear rubber gloves to avoid contact. Recommended glove: rubber gloves. Consult glove supplier for thickness and breakthrough times.

**Specific Respiratory Protection:** None required under normal use conditions.

**Specific Thermal Hazards:** Not applicable

| Recommended Personal Protective Equipment:                                                                                                       |                                                                                   |             |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|---------|
| EYES/FACE                                                                                                                                        | SKIN                                                                              | RESPIRATORY | THERMAL |
|                                                                 |  |             |         |
| <b>Environmental Exposure Controls:</b> None required for normal use.                                                                            |                                                                                   |             |         |
| <b>General Hygiene Considerations and Work Practices:</b> Wash thoroughly after handling. Remove and launder contaminated clothing before reuse. |                                                                                   |             |         |
| <b>Protective Measures During Repair and Maintenance of Contaminated Equipment:</b> Not applicable for product.                                  |                                                                                   |             |         |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                         |                   |                                                |                 |
|-----------------------------------------|-------------------|------------------------------------------------|-----------------|
| <b>Appearance:</b>                      | Dark brown liquid | <b>Explosive limits:</b>                       | Not applicable  |
| <b>Odor:</b>                            | Aromatic          | <b>Vapor pressure:</b>                         | Negligible      |
| <b>Odor threshold:</b>                  | Not available     | <b>Vapor density:</b>                          | Not available   |
| <b>pH: (1:1 water)</b>                  | 4.5 in water      | <b>Specific Gravity: (H<sub>2</sub>O = 1)</b>  | 0.964 @ 25°C    |
| <b>Melting/freezing point:</b>          | Not available     | <b>Solubility:</b>                             | Not miscible    |
| <b>Initial boiling point and range:</b> | 400°F / 204.4°C   | <b>Partition coefficient: n-octanol/water:</b> | Not available   |
| <b>Flash point: PMCC</b>                | 280°F / 137.8°C   | <b>Auto-ignition temperature:</b>              | Not available   |
| <b>Evaporation rate:</b>                | Not available     | <b>Decomposition temperature:</b>              | Not available   |
| <b>Flammability:</b>                    | Not flammable     | <b>Viscosity:</b>                              | 800 centipoises |
| <b>Explosive Properties:</b>            | None              | <b>Oxidizing Properties:</b>                   | None            |

## 10. STABILITY AND REACTIVITY

**Reactivity:** Will not react under normal use conditions.

**Chemical Stability:** Stable under normal use conditions.

**Possibility of Hazardous Reactions:** Not reactive under normal conditions of use.

**Conditions to Avoid:** None known.

**Incompatible materials:** Avoid oxidizing agents.

**Hazardous Decomposition Products:** Thermal decomposition may produce carbon and nitrogen oxides.

## 11. TOXICOLOGICAL INFORMATION

### **Potential Health Effects:**

**Eyes:** Direct contact may cause eye irritation with blurred vision and pain. May cause anesthetic effects.

**Skin:** May cause skin irritation. May cause anesthetic effects. Studies in humans show that eugenol causes contact dermatitis.

**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea, vomiting, diarrhea and central nervous system effects such as confusion, ataxia and mild hypertension. May be harmful if swallowed.

**Inhalation:** No effects are expected because the product is an ointment.

**Chronic Health Effects:** Prolonged exposure to chlorobutanol may cause kidney or liver damage.

**Carcinogenicity:** None of the components of this product are listed as carcinogens by OSHA, IARC, ACGIH, NTP or EU Directives.

**Mutagenicity:** Eugenol was negative in the AMES test, positive in a mouse lymphoma assay, both positive and negative results were found in a in vitro CHO assay and negative in a in vivo mouse micronucleus assay.

**Medical Conditions Aggravated by Exposure:** Employees with pre-existing skin disorders may be at increased risk from exposure.

### **Acute Toxicity Data:**

Guaiacol: LD50 oral rat 520 mg/kg, LD50 skin rabbit 4,600 mg/kg

Eugenol: Oral rat LD50 1930 mg/kg

Chlorobutanol: Oral rat LD50 510 mg/kg; Skin rabbit LD50 2000 mg/kg

**Reproductive Toxicity Data:** No data available.

### **Specific Target Organ Toxicity (STOT):**

**Single Exposure:** Eugenol has been shown to inhibit peripheral sensory nerve activity in low doses. In high doses it can produce neurotoxicity

**Repeated Exposure:** In a 4 month study, rats given 1% of their diet showed no liver damage. In another study, rats given

0.1-1% for 19 weeks showed no changes in growth, hematology, organ weights and histology. In a 34 days oral study, rats were given 1.4 grams increasing to 4 grams of eugenol over 34 days. Enlargement of the liver and adrenals, hyperplasia and hyperkeratosis of the skin with focal ulcerations were observed.

## 12. ECOLOGICAL INFORMATION

### Toxicity:

Guaiacol: 48 hr EC50 daphnia magna 25.9 mg/L

Eugenol: 96 hr LC50 Pimephales promelas (Fathead minnow) 24 mg/L

**Persistence and Degradability:** Guaiacol: Readily Biodegradable (90% in 28 days).

**Bio-accumulative Potential:** Guaiacol: The calculated BCF is estimated to be 3 which suggests the potential for bioconcentration in aquatic organisms is low. Eugenol: The potential for bioaccumulation in aquatic organisms is low, provided the compound is not metabolized by the organism.

**Mobility in Soil:** Guaiacol is expected to have very high mobility in soil. Eugenol is expected to have moderate mobility in soil.

**Other Adverse Effects:** None known.

**Results of PBT/vPvB Assessment:** Not required.

## 13. DISPOSAL CONSIDERATIONS

**Regulations:** Dispose in accordance with local and national environmental regulations

**Properties (Physical/Chemical) Affecting Disposal:** None known.

**Waste Treatment Recommendations:** None needed for normal anticipated use.

## 14. TRANSPORT INFORMATION

|                                           |                                                                                            |                           |            |           |
|-------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------|------------|-----------|
| <b>UN Number:</b>                         | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>UN proper shipping name:</b>           | ADR/RID: Not Regulated<br>IMDG: Not Regulated<br>IATA: Not Regulated<br>DOT: Not Regulated |                           |            |           |
| <b>Transport hazard class(es):</b>        | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>Packaging group:</b>                   | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>Environmental hazards:</b>             | ADR/RID: No                                                                                | IMDG Marine pollutant: No | IATA: No   | DOT: No   |
| <b>Special precautions for user:</b> None |                                                                                            |                           |            |           |

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

**Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):** This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**Toxic Substances Control Act (TSCA):** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**OSHA Hazard Classification:** Irritant, Target organ effects, Sensitizer

**Clean Water Act (CWA):** Not Listed

**Clean Air Act (CAA):** Not Listed

**Superfund Amendments and Reauthorization Act (SARA) Title III Information:**

**SARA Section 311/312 (40 CFR 370) Hazard Categories:**

|                          |            |                           |           |
|--------------------------|------------|---------------------------|-----------|
| <b>Immediate Hazard:</b> | <b>Yes</b> | <b>Pressure Hazard:</b>   | <b>No</b> |
| <b>Delayed Hazard:</b>   | <b>Yes</b> | <b>Reactivity Hazard:</b> | <b>No</b> |
| <b>Fire Hazard:</b>      | <b>No</b>  |                           |           |

**This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):**

| <b>Components</b> | <b>C.A.S. #</b> | <b>WT %</b> |
|-------------------|-----------------|-------------|
| None              |                 |             |

### State Regulations

**California:** This product contains the following chemicals(s) known to the State of California to cause cancer, birth defects or reproductive harm:

| <b>Components</b> | <b>C.A.S. #</b> | <b>WT %</b> |
|-------------------|-----------------|-------------|
| None              |                 |             |

### International Regulations

**Canadian Environmental Protection Act:** All the components of this product are listed on the Canadian DSL.

**Canadian Workplace Hazardous Materials Information System (WHMIS):** Class D, Division 2B

**EU REACH:** The substances in this product comply with the EU REACH regulation as applicable.

## 16. OTHER INFORMATION

Full text of Classification abbreviations used in Section 2 and 3:

Xn Harmful  
Xi Irritant  
R22 Harmful if swallowed.  
R36/38 Irritating to eyes and skin.  
R38 Irritating to skin.  
R43 May cause sensitization by skin contact.  
Acute Tox 4 Acute Toxicity Category 4  
Eye Irrit. 2 Eye Irritation Category 2  
Skin Irrit. 2 Skin Irritation Category 2  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

Date of SDS Preparation/Revision: 6 December 2011

Data Sources: US NLM ChemID Plus and HSDB, Substance SDS for components, IUCLID Dataset EU Chemical Bureau, ESIS, Country websites for occupational exposure limits.

## Safety Data Sheet

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010)

Date Issued: 22 June 2009  
Document Number: 10404MS  
Date Revised: 21 July 2015  
Revision Number:3


### 1. PRODUCT IDENTIFICATION

|                                                 |                                                                                  |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| <b>Trade Name (as labeled):</b>                 | <b>Dry Socket Paste</b>                                                          |
| <b>Chemical Name/Classification:</b>            | Mixture of organic compounds                                                     |
| <b>Product Identifier (Part/Item Number):</b>   | 10404 (1oz)                                                                      |
| <b>U.N. Number:</b>                             | None                                                                             |
| <b>U.N. Dangerous Goods Classification:</b>     | None                                                                             |
| <b>Recommended Use:</b>                         | Topical anesthetic                                                               |
| <b>Restrictions on Use:</b>                     | Use only as directed                                                             |
| <b>Manufacturer/Supplier Name:</b>              | Sultan Healthcare                                                                |
| <b>Manufacturer/Supplier Address:</b>           | 1301 Smile Way<br>York, PA 17404                                                 |
| <b>Manufacturer/Supplier Telephone Number:</b>  | <b>800-989-8826 or 717-767-8502</b> (Product Information)                        |
| <b>Transportation Emergency Contact Number:</b> | <b>800-424-9300 Chemtrec</b>                                                     |
| <b>E-Mail Address:</b>                          | <a href="mailto:ProfessionalMSDS@dentsply.com">ProfessionalMSDS@dentsply.com</a> |

### 2. HAZARD(s) IDENTIFICATION

**EU Classification (1999/45/EC as amended):** Irritant (Xi) R43

**EU Labeling:**

|                                                                                                     |                                                                                                                                                                                                                                                   |     |                                          |     |                          |        |                                               |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------|-----|--------------------------|--------|-----------------------------------------------|
|  <p>Irritant</p> | <table border="0"> <tr> <td>R43</td> <td>May cause sensitization by skin contact.</td> </tr> <tr> <td>S24</td> <td>Avoid contact with skin.</td> </tr> <tr> <td>S36/37</td> <td>Wear suitable protective clothing and gloves.</td> </tr> </table> | R43 | May cause sensitization by skin contact. | S24 | Avoid contact with skin. | S36/37 | Wear suitable protective clothing and gloves. |
| R43                                                                                                 | May cause sensitization by skin contact.                                                                                                                                                                                                          |     |                                          |     |                          |        |                                               |
| S24                                                                                                 | Avoid contact with skin.                                                                                                                                                                                                                          |     |                                          |     |                          |        |                                               |
| S36/37                                                                                              | Wear suitable protective clothing and gloves.                                                                                                                                                                                                     |     |                                          |     |                          |        |                                               |

**US Hazard Classification:** Hazardous

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

| Hazardous Components     | C.A.S. #<br>EC#        | IUPAC Name                          | Substance Classification<br>67/548/EEC<br>(EC) No 1272/2008                                 | WT % |
|--------------------------|------------------------|-------------------------------------|---------------------------------------------------------------------------------------------|------|
| Guaiacol                 | 90-05-1 /<br>201-964-7 | 2-methoxyphenol                     | Xn, Xi, R22, R36/38<br>Acute Tox. 4 (H302),<br>Eye Irrit. 2 (H319),<br>Skin Irrit. 2 (H315) | 1-5  |
| Eugenol                  | 97-53-0 /<br>202-589-1 | 2-methoxy-4-prop-2-enylphenol       | Xn, Xi R22, R38, R43                                                                        | 1-5  |
| Chlorobutanol, anhydrous | 57-15-8 /<br>200-317-6 | 1,1,1-Trichloro-2-methyl-2-propanol | Xn R22, R36/38                                                                              | 1-2  |





Refer to Section 16 for the full text of the EU Classifications and R Phrases.

### 4. FIRST-AID MEASURES

| Routes of Exposure                                                                                                                                              | First Aid Instructions                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye                                                                                                                                                             | Flush eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.             |
| Skin                                                                                                                                                            | Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if symptoms develop and persist. |
| Inhalation                                                                                                                                                      | None needed under normal use conditions. If irritation develops, remove to fresh air. Get medical attention if symptoms persist.                        |
| Ingestion                                                                                                                                                       | If swallowed, rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.                                     |
| Most Important Symptoms of Exposure                                                                                                                             | May cause eye and skin irritation. May cause allergic skin reaction. May be harmful if swallowed.                                                       |
| Other                                                                                                                                                           | Contact with skin or mucous membranes may cause numbness.                                                                                               |
| <b>Note to Physicians (Treatment, Testing and Monitoring):</b> Treatment of overexposure should be directed at the control of symptoms and clinical conditions. |                                                                                                                                                         |

### 5. FIRE-FIGHTING MEASURES

|                                                    |                                                                                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media:</b>               | Use media appropriate for surrounding fire.                                                                                                   |
| <b>Fire Fighting Procedures:</b>                   | Cool fire exposed containers and structures with water.                                                                                       |
| <b>Specific Hazards Arising from the Chemical:</b> | None known.                                                                                                                                   |
| <b>Precautions for Fire Fighters:</b>              | Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for all fires involving chemicals. |



| Recommended Protective Equipment for Fire Fighters:                               |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| EYES/FACE                                                                         | SKIN                                                                              | RESPIRATORY                                                                        | THERMAL                                                                             |
|  |  |  |  |

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, PPE and Emergency Procedures:** For spills, wear gloves and eye protection.

**Environmental Precautions:** Prevent spill from entering sewers and water courses. Report releases as required by local and national authorities.

**Methods and Materials for Containment and Clean-Up:** Wipe up with a paper towel and place into an appropriate container for disposal.

| Recommended Personal Protective Equipment for Containment and Clean-up:             |                                                                                     |             |         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------|---------|
| EYES/FACE                                                                           | SKIN                                                                                | RESPIRATORY | THERMAL |
|  |  |             |         |

## 7. HANDLING AND STORAGE

**Precautions for Safe Handling:** Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use in accordance with package instructions.

**Conditions for Safe Storage:** Store in a cool, dry, well ventilated area away. Keep containers tightly closed. Protect from physical damage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits:

|                          |                |                  |
|--------------------------|----------------|------------------|
| Chlorobutanol, anhydrous | United States  | None Established |
|                          | Germany        | None Established |
|                          | United Kingdom | None Established |
|                          | France         | None Established |
|                          | Spain          | None Established |
|                          | Italy          | None Established |
|                          | European Union | None Established |

|          |                |                  |
|----------|----------------|------------------|
| Guaiacol | United States  | None Established |
|          | Germany        | None Established |
|          | United Kingdom | None Established |
|          | France         | None Established |
|          | Spain          | None Established |
|          | Italy          | None Established |
|          | European Union | None Established |

|         |                |                  |
|---------|----------------|------------------|
| Eugenol | United States  | None Established |
|         | Germany        | None Established |
|         | United Kingdom | None Established |
|         | France         | None Established |
|         | Spain          | None Established |
|         | Italy          | None Established |
|         | European Union | None Established |

**Biological Exposure Limits:** None Established

**Appropriate Engineering Controls:** No special controls required.



### Individual Protection Measures (PPE)

**Specific Eye/Face Protection:** Safety glasses should be worn if contact is likely.

**Specific Skin Protection:** Wear rubber gloves to avoid contact. Recommended glove: rubber gloves. Consult glove supplier for thickness and breakthrough times.

**Specific Respiratory Protection:** None required under normal use conditions.

**Specific Thermal Hazards:** Not applicable

| Recommended Personal Protective Equipment:                                                                                                       |                                                                                   |             |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|---------|
| EYES/FACE                                                                                                                                        | SKIN                                                                              | RESPIRATORY | THERMAL |
|                                                                 |  |             |         |
| <b>Environmental Exposure Controls:</b> None required for normal use.                                                                            |                                                                                   |             |         |
| <b>General Hygiene Considerations and Work Practices:</b> Wash thoroughly after handling. Remove and launder contaminated clothing before reuse. |                                                                                   |             |         |
| <b>Protective Measures During Repair and Maintenance of Contaminated Equipment:</b> Not applicable for product.                                  |                                                                                   |             |         |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                         |                   |                                                |                 |
|-----------------------------------------|-------------------|------------------------------------------------|-----------------|
| <b>Appearance:</b>                      | Dark brown liquid | <b>Explosive Limits:</b>                       | Not applicable  |
| <b>Odor:</b>                            | Aromatic          | <b>Vapor Pressure:</b>                         | Negligible      |
| <b>Odor Threshold:</b>                  | Not available     | <b>Vapor Density:</b>                          | Not available   |
| <b>pH: (1:1 water)</b>                  | 4.5 in water      | <b>Specific Gravity: (H<sub>2</sub>O = 1)</b>  | 0.964 @ 25°C    |
| <b>Melting/Freezing Point:</b>          | Not available     | <b>Solubility:</b>                             | Not miscible    |
| <b>Initial Boiling Point and Range:</b> | 400°F / 204.4°C   | <b>Partition Coefficient: n-octanol/water:</b> | Not available   |
| <b>Flash Point: PMCC</b>                | 280°F / 137.8°C   | <b>Auto-Ignition Temperature:</b>              | Not available   |
| <b>Evaporation Rate:</b>                | Not available     | <b>Decomposition Temperature:</b>              | Not available   |
| <b>Flammability:</b>                    | Not flammable     | <b>Viscosity:</b>                              | 800 centipoises |
| <b>Explosive Properties:</b>            | None              | <b>Oxidizing Properties:</b>                   | None            |

## 10. STABILITY AND REACTIVITY

**Reactivity:** Will not react under normal use conditions.

**Chemical Stability:** Stable under normal use conditions.

**Possibility of Hazardous Reactions:** Not reactive under normal conditions of use.

**Conditions to Avoid:** None known.

**Incompatible materials:** Avoid oxidizing agents.

**Hazardous Decomposition Products:** Thermal decomposition may produce carbon and nitrogen oxides.

## 11. TOXICOLOGICAL INFORMATION

### **Potential Health Effects:**

**Eyes:** Direct contact may cause eye irritation with blurred vision and pain. May cause anesthetic effects.

**Skin:** May cause skin irritation. May cause anesthetic effects. Studies in humans show that eugenol causes contact dermatitis.

**Ingestion:** Swallowing may cause gastrointestinal irritation, nausea, vomiting, diarrhea and central nervous system effects such as confusion, ataxia and mild hypertension. May be harmful if swallowed.

**Inhalation:** No effects are expected because the product is an ointment.

**Chronic Health Effects:** Prolonged exposure to chlorobutanol may cause kidney or liver damage.

**Carcinogenicity:** None of the components of this product are listed as carcinogens by OSHA, IARC, ACGIH, NTP or EU Directives.

**Mutagenicity:** Eugenol was negative in the AMES test, positive in a mouse lymphoma assay, both positive and negative results were found in a in vitro CHO assay and negative in a in vivo mouse micronucleus assay.

**Medical Conditions Aggravated by Exposure:** Employees with pre-existing skin disorders may be at increased risk from exposure.

### **Acute Toxicity Data:**

Guaiacol: LD50 oral rat 520 mg/kg, LD50 skin rabbit 4,600 mg/kg

Eugenol: Oral rat LD50 1930 mg/kg

Chlorobutanol: Oral rat LD50 510 mg/kg; Skin rabbit LD50 2000 mg/kg

**Reproductive Toxicity Data:** No data available.

### **Specific Target Organ Toxicity (STOT):**

**Single Exposure:** Eugenol has been shown to inhibit peripheral sensory nerve activity in low doses. In high doses it can produce neurotoxicity.

**Repeated Exposure:** In a 4 month study, rats given 1% of their diet showed no liver damage. In another study, rats given 0.1-1% for 19 weeks showed no changes in growth, hematology, organ weights and histology. In a 34 days oral study, rats were given 1.4 grams increasing to 4 grams of eugenol over 34 days. Enlargement of the liver and adrenals, hyperplasia and hyperkeratosis of the skin with focal ulcerations were observed.

## 12. ECOLOGICAL INFORMATION

**Toxicity:**

Guaiacol: 48 hr EC50 daphnia magna 25.9 mg/L

Eugenol: 96 hr LC50 Pimephales promelas (Fathead minnow) 24 mg/L

**Persistence and Degradability:** Guaiacol: Readily Biodegradable (90% in 28 days).

**Bio-accumulative Potential:** Guaiacol: The calculated BCF is estimated to be 3 which suggests the potential for bioconcentration in aquatic organisms is low. Eugenol: The potential for bioaccumulation in aquatic organisms is low, provided the compound is not metabolized by the organism.

**Mobility in Soil:** Guaiacol is expected to have very high mobility in soil. Eugenol is expected to have moderate mobility in soil.

**Other Adverse Effects:** None known.

**Results of PBT/vPvB Assessment:** Not required.

## 13. DISPOSAL CONSIDERATIONS

**Regulations:** Dispose in accordance with local and national environmental regulations.

**Properties (Physical/Chemical) Affecting Disposal:** None known.

**Waste Treatment Recommendations:** None needed for normal anticipated use.

## 14. TRANSPORT INFORMATION

|                                           |                                                                                            |                           |            |           |
|-------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------|------------|-----------|
| <b>UN Number:</b>                         | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>UN Proper Shipping Name:</b>           | ADR/RID: Not Regulated<br>IMDG: Not Regulated<br>IATA: Not Regulated<br>DOT: Not Regulated |                           |            |           |
| <b>Transport Hazard Class(es):</b>        | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>Packaging Group:</b>                   | ADR/RID: None                                                                              | IMDG: None                | IATA: None | DOT: None |
| <b>Environmental Hazards:</b>             | ADR/RID: No                                                                                | IMDG Marine pollutant: No | IATA: No   | DOT: No   |
| <b>Special Precautions for User:</b> None |                                                                                            |                           |            |           |

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

**Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):** This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**Toxic Substances Control Act (TSCA):** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**OSHA Hazard Classification:** Irritant, Target organ effects, Sensitizer

**Clean Water Act (CWA):** Not Listed

**Clean Air Act (CAA):** Not Listed

**Superfund Amendments and Reauthorization Act (SARA) Title III Information:**

**SARA Section 311/312 (40 CFR 370) Hazard Categories:**

|                          |            |                           |           |
|--------------------------|------------|---------------------------|-----------|
| <b>Immediate Hazard:</b> | <b>Yes</b> | <b>Pressure Hazard:</b>   | <b>No</b> |
| <b>Delayed Hazard:</b>   | <b>Yes</b> | <b>Reactivity Hazard:</b> | <b>No</b> |
| <b>Fire Hazard:</b>      | <b>No</b>  |                           |           |

**This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):**

| <b>Components</b> | <b>C.A.S. #</b> | <b>WT %</b> |
|-------------------|-----------------|-------------|
| None              |                 |             |

### State Regulations

**California:** This product contains the following chemicals(s) known to the State of California to cause cancer, birth defects or reproductive harm:

| <b>Components</b> | <b>C.A.S. #</b> | <b>WT %</b> |
|-------------------|-----------------|-------------|
| None              |                 |             |

### International Regulations

**Canadian Environmental Protection Act:** All the components of this product are listed on the Canadian DSL.

**Canadian Workplace Hazardous Materials Information System (WHMIS):** Class D, Division 2B

**EU REACH:** The substances in this product comply with the EU REACH regulation as applicable.

## 16. OTHER INFORMATION

Full text of Classification abbreviations used in Section 2 and 3:

|               |                                          |
|---------------|------------------------------------------|
| Xn            | Harmful                                  |
| Xi            | Irritant                                 |
| R22           | Harmful if swallowed.                    |
| R36/38        | Irritating to eyes and skin.             |
| R38           | Irritating to skin.                      |
| R43           | May cause sensitization by skin contact. |
| Acute Tox 4   | Acute Toxicity Category 4                |
| Eye Irrit. 2  | Eye Irritation Category 2                |
| Skin Irrit. 2 | Skin Irritation Category 2               |
| H302          | Harmful if swallowed.                    |
| H315          | Causes skin irritation.                  |
| H319          | Causes serious eye irritation.           |

Date of SDS Preparation/Revision: 6 December 2011

Revision Summary: Revision 3 – Updated address and contact information and updated hazard symbol to GHS image.

Data Sources: US NLM ChemID Plus and HSDB, Substance SDS for components, IUCLID Dataset EU Chemical Bureau, ESIS, Country websites for occupational exposure limits.