

**MATERIAL SAFETY DATA SHEET**  
**ACCORDING TO EC LEGISLATION 91/155/E EC**

Date created: August 2002

Date revised: June 2005

**1. Identification:**

Commercial name: *Clove Leaf essential oil.*  
Botanical Nomenclature: *Eugenia caryophyllus.*  
INCI name: *Eugenia caryophyllus.*  
CAS number: 8000-34-8.  
EINECS CAS number: 84961-50-2  
EEC Number: 284-638-7

**2. Composition:**

Main components: *Eugenol, Eugenyl acetate.*  
Additives (e.g. carriers, preservatives, antioxidants): *Nil.*

**3. Potential Health Hazards:**

Inhalation: *None identified.*  
Skin: *Concentrated liquid and vapours irritating to skin by prolonged exposure.*  
Eyes: *Irritating to eyes with possible damage.*  
Ingestion: *Harmful if swallowed.*

**4. First aid:**

Inhalation: *If discomfort is felt, remove person to a well-ventilated area with plenty of fresh air.*  
Skin: *Remove contaminated clothing. Wash affected area with plenty of soap and water.*  
Eyes: *Flush immediately with plenty of cool water for 10 to 20 minutes. Seek medical advice from a Medical Doctor.*  
Ingestion: *Seek immediate medical care.*

**5. In case of fire:**

Extinguishing Media: *Foam, Carbon dioxide.*  
Do not use: *Water.*  
Special precautions: *Wear breathing apparatus as toxic vapours may be released during fire.*

**6. Spill and Leak Procedure:**

Individual precautions: *Eliminate sources of ignition. Keep area well ventilated and isolate the spill.*  
Environmental protection: *Prevent the liquid from entering the drains and sewers.*  
Cleaning methods: *Soak up the spill using inert absorbents. For large spills use pumps.*

**7. Handling and storage:**

*Store in a cool, dry and dark place in suitable containers (aluminium cans or lacquer lined steel drums).*  
*Handle in a well-ventilated area.*  
*Keep away from sources of heat and ignition.*

**8. Personal Protection / Exposure control:**

Respiratory protection: *Wear breathing apparatus when working in an area of high vapour concentration.*

Skin protection: *Use protective gloves. Wear protective clothing when possibility exists of contact.*

Eye protection: *Goggles should be worn.*

General precautions: *Use good industrial hygiene practise.*

#### **9. Physiochemical properties:**

Appearance:	<i>Brownish yellow liquid</i>
Odour:	<i>Typical, warm, sweet and spicy</i>
pH:	<i>Neutral</i>
Boiling point:	<i>Not available</i>
Flash point:	<i>&gt;100°</i>
Autoignition Temperature:	<i>Not available</i>
Explosion Limits:	<i>Not available</i>
Vapour pressure (25°C):	<i>Not available</i>
Vapour Density:	<i>&gt;1 (air=1)</i>
Specific Gravity (20°C):	<i>1.041 to 1.054</i>
Optical Rotation (20°C):	<i>0 to -15°</i>
Refractive Index (20°C):	<i>1.528 to 1.537</i>
Solubility in water (20°):	<i>Negligible</i>
Partition Coefficient log P o/w:	<i>Not available</i>
Evaporation rate:	<i>&lt;1 (Butyl Acetate=1)</i>

#### **10. Stability and Reactivity:**

Chemical Stability: *Stable.*

Conditions to avoid: *Normally stable. Not reactive with water.*

Hazardous Decomposition Products: *Not available.*

#### **11. Sensitisers:**

Eugenol 92%, Isoeugenol 0.5%, total 92.5%

#### **12. Toxicological Information:**

According to RIFM- Monograph:

Acute Toxicity: *Oral LD<sub>50</sub>: 2.6 g/kg in rats.*

*Dermal LD<sub>50</sub>: 5 g/kg in rabbits.*

Irritation: *Tested without irritation at 2%.*

Sensitisation: *Tested without sensitisation at 5%.*

Phototoxicity: *No phototoxic reaction reported.*

#### **13. Ecotoxicological information:**

Fish Toxicity: LCO/EC<sub>50</sub>: *Not available.*

Bacteriotocity: ECO/EC<sub>50</sub>: *Not available.*

#### **14. Disposal Method:**

*Check Federal, State and Local Regulations.*

#### **15. Transport Information:**

*Non-hazardous material transport in suitable containers.*

#### **16. Regulatory Information**

##### **The British Essential Oil Association Chip Regulations – 2002**

<u>Hazard Symbols:</u>	Xn
<u>Risk Phrases:</u>	R21/22, 38, 65
<u>H/C %:</u>	15
<u>Safety Phrases:</u>	S62, 36/37

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FOR AND ON BEHALF OF PHOENIX NATURAL PRODUCTS:

J.S. CHANA..... (MANAGING DIRECTOR)

DATE:.....