**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**
- **Trade name:** Eugenol
- **Stock number:** A14332, L03559
- **CAS Number:** 97-53-0
- **EC number:** 202-589-1

**1.2 Relevant identified uses of the substance or mixture and uses advised against.**
- **Identified use:** SU24 Scientific research and development

**1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** Alfa Aesar GmbH & Co.KG
  - A Johnson Matthey Company
  - Zeppelinstr. 7b
  - 76185 Karlsruhe / Germany
  - Tel: +49 (0) 721 84007 280
  - Fax: +49 (0) 721 84007 300
  - Email: tech@alfa.com
  - www.alfa.com
- **Informing department:** Product safety Tel + +049 (0) 7275 988687-0
- **Emergency phone number:**
  - Carechem 24: +44 (o) 1235 239 670 (Multi-language emergency number)
  - Poison Information Center Mainz
  - www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008
- GHS07
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2 H319 Causes serious eye irritation.
  - Skin Sens. 1 H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
- Xn; Harmful
- R22: Harmful if swallowed.
- Xi; Irritant
- R36/38: Irritating to eyes and skin.
- Xi; Sensitising
- R43: May cause sensitisation by skin contact.

**2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  - The substance is classified and labelled according to the CLP regulation.

**2.3 Other hazards**
- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.

**SECTION 3: Composition/Information on ingredients**

**3.1 Substances**
- **CAS# Designation:** 97-53-0 Eugenol
- **Identification number(s):**
  - EC number: 202-589-1

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**After inhalation**
- Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- Seek immediate medical advice.

**After skin contact**
- Instantly wash with water and soap and rinse thoroughly.
- Seek immediate medical advice.
- Rinse opened eye for several minutes under running water. Then consult doctor.
- Seek medical treatment.

**After eye contact**
- No further relevant information available.

**After swallowing**
- No further relevant information available.

**4.2 Most important symptoms and effects, both acute and delayed**
- No further relevant information available.

**4.3 Indication of any immediate medical attention and special treatment needed**
- No further relevant information available.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**
- **Suitable extinguishing agents:** CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **Special hazards arising from the substance or mixture:**
  - If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide

**5.2 Special hazards arising from the substance or mixture**
- **Protective equipment:** Wear self-contained breathing apparatus.
### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

#### 6.2 Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach sewage system or water bodies. Do not allow to enter the ground/soil.

#### 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.

#### Prevention of secondary hazards:
No special measures required.

#### 6.4 Reference to other sections
See Section 7 for information on safe handling. See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling
Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.

#### Information about protection against explosions and fires:
No information known.

#### 7.2 Conditions for safe storage, including any incompatibilities

- **Storage Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** Keep container tightly sealed. Store in cool, dry conditions in well sealed containers.

#### 7.3 Specific end use(s)
No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

#### 8.1 Control parameters

- **Components with critical values that require monitoring at the workplace:**
  - 97-53-0 Eugenol (100.0%)
  - MAK (Germany) vgl.Abschn.IV

- **Additional information:**
  - No data

#### 8.2 Exposure controls

- **Personal protective equipment**
  - **General protective and hygienic measures:**
    - The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment.

- **Breathing equipment:**
  - Use breathing protection with high concentrations.

- **Protection of hands:**
  - Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Material of gloves**
  - Impervious gloves
  - Not determined

- **Penetration time of glove material**
  - Safety glasses
  - Face protection

- **Eye protection:**
  - Protective work clothing

**Body protection:**

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

- **General Information**
  - **Appearance:** Liquid
  - **Colour:** Light yellow
  - **Smell:** Not determined
  - **Odour threshold:** Not determined
  - **pH-value:** Not determined

- **Change in condition**
  - **Melting point/Melting range:** -12 to -10 °C
  - **Boiling point/Boiling range:** 254 °C
  - **Sublimation temperature / start:** Not determined

- **Flash point:** > 121 °C

- **Inflammability (solid, gaseous)**
  - Not determined

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined

- **Self-inflammability:** Not determined

- **Danger of explosion:** Product is not explosive.

- **Critical values for explosion:**
  - **Lower:** Not determined
  - **Upper:** Not determined

- **Steam pressure:** Not determined

- **Density at 20 °C:** Not determined

- **Relative density:** Not determined

- **Vapour density:** Not determined

- **Evaporation rate:** Not determined
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name Eugenol
(Contd. of page 2)

Solubility in / Miscibility with
Water: Not determined
Partition coefficient (n-octanol/water): Not determined.
Viscosity: dynamic: Not determined.
kinematic: Not determined.
9.2 Other information
No further relevant information available.

SECTION 10: Stability and reactivity
10.1 Reactivity
No information known.
10.2 Chemical stability
Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions
No dangerous reactions known
10.5 Incompatible materials:
Oxidizing agents
10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification:
No data
Skin irritation or corrosion:
Causes skin irritation.
Eye irritation or corrosion:
May cause an allergic skin reaction.
Sensitization:
IARC-3: Not classifiable as to carcinogenicity to humans.
Carcinogenicity:
No effects known.
Reproductive toxicity:
No effects known.
Specific target organ system toxicity - repeated exposure:
No effects known.
Specific target organ system toxicity - single exposure:
No effects known.
Aspiration hazard:
No effects known.
Other information (about experimental toxicology):
Tumorigenic effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed on tests with bacteria.
Mutagenic effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed on tests with human lymphocytes.
Mutagenic effects have been observed on tests with insects.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information
12.1 Toxicity
Aquatic toxicity:
No further relevant information available.
12.2 Persistence and degradability
No further relevant information available.
12.3 Bioaccumulative potential
No further relevant information available.
12.4 Mobility in soil
No further relevant information available.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects
No further relevant information available.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Recommendation
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

SECTION 14: Transport information
UN-Number
ADR, IMDG, IATA
None
14.2 UN proper shipping name
ADR, IMDG, IATA
None
14.3 Transport hazard class(es)
ADR, IMDG, IATA
Class
None
Packing group
ADR, IMDG, IATA
None
14.5 Environmental hazards:
Not applicable.
14.6 Special precautions for user
Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC
Code
Not applicable.
Transport/Additional information:
Not dangerous according to the above specifications.

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Australian Inventory of Chemical Substances
Substance is listed.
Standard for the Uniform Scheduling of Drugs and Poisons
97-53-0 Eugenol
(Contd. on page 4)
Trade name **Eugenol**

<table>
<thead>
<tr>
<th>National regulations</th>
<th>Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water hazard class:</td>
<td>Water hazard class 1 (Self-assessment): slightly hazardous for water.</td>
</tr>
<tr>
<td>Other regulations, limitations and prohibitive regulations</td>
<td></td>
</tr>
<tr>
<td>ELINCS (European List of Notified Chemical Substances)</td>
<td>Substance is not listed.</td>
</tr>
<tr>
<td>Substances of very high concern (SVHC) according to REACH, Article 57</td>
<td>Substance is not listed.</td>
</tr>
<tr>
<td>REACH - Pre-registered substances</td>
<td>Substance is listed.</td>
</tr>
<tr>
<td>15.2 Chemical safety assessment:</td>
<td>A Chemical Safety Assessment has not been carried out.</td>
</tr>
</tbody>
</table>

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing data specification sheet:** Health, Safety and Environmental Department.

**Abbreviations and acronyms:**
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent