

1. PRODUCT AND COMPANY IDENTIFICATION:

| | |
|---------------------|--|
| PRODUCT CODE | A0434 |
| PRODUCT NAME | GERANIOL 980 PURE |
| SUPPLIER | Shanghai M & U International Trade Co., Ltd. Rm 1717, No 598 North NuJiang Road 200333 Shanghai, China +86-21-32515501 32515502 sales@mu-intel.com |

FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315
 Serious eye damage (Category 1), H318
 Skin sensitisation (Category 1), H317
 Acute aquatic toxicity (Category 3), H402
 For the full text of the H-Statements mentioned in this Section, see Section 16

GHS Label elements, including precautionary statements

| | |
|----------------------------|---|
| Pictogram |  |
| Signal word | Danger |
| Hazard statement(s) | |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H318 | Causes serious eye damage |
| H402 | Harmful to aquatic life |
| Precautionary statement(s) | |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray |
| P264 | Wash skin thoroughly after handling |
| P272 | Contaminated work clothing should not be allowed out of the workplace |
| P273 | Avoid release to the environment |
| P280 | Wear protective gloves/ eye protection/ face protection |
| P302 + P352 IF ON SKIN | Wash with plenty of soap and water |

| | |
|-------------------------------|---|
| P305 + P351 + P338 IF IN EYES | Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing |
| P310 | Immediately call a POISON CENTER or doctor/ physician |
| P321 | Specific treatment (see supplemental first aid instructions on this label) |
| P333 + P313 | if skin irritation or rash occurs: Get medical advice/ attention |
| P362 | Take off contaminated clothing and wash before reuse |
| P501 | Dispose of contents/ container to an approved waste disposal plant |

Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. COMPOSITION AND INFORMATION ON INGREDIENTS:

| | |
|------------------|--------------------------------------|
| Synonyms | trans-3,7-Dimethyl-2,6-octadien-1-ol |
| Formula | C10 H18 O |
| Molecular Weight | 154.25 g/mol |
| CAS-No | 106-24-1 |
| EC-No | 203-377-1 |

Hazardous Components

| | |
|----------------|--|
| Component | Geraniol |
| Classification | Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1; Aquatic Acute 3; H315, H317, H318, H402 |
| Concentration | 90-100% |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST-AID GUIDE:

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician

In case of skin contact

Wash off with soap and plenty of water. Consult a physician

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE-FIGHTING GUIDE:

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

Special hazards arising from the substance or mixture

Carbon oxides

Advice for firefighters

Wear self contained breathing apparatus for firefighting if necessary

Further information

No data available

6. ACCIDENTAL RELEASE GUIDE:

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal

Reference to other sections

For disposal see section 13

7. HANDLING AND STORAGE:

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage

Specific end use(s)

No other specific uses are stipulated

8. EXPOSURE AND PERSONAL PROTECTION:

Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided

9. PHYSICAL AND CHEMICAL PROPERTIES:

| | |
|--|--|
| Appearance | Form: clear, liquid |
| Color | colorless |
| Odor | no data available |
| Odor Threshold | no data available |
| pH | no data available |
| Melting point/freezing point | Melting point/freezing point: -15 °C (5 °F) |
| Initial boiling point and boiling range | 229 - 230 °C (444 - 446 °F) - lit |
| Flash point | 108 °C (226 °F) - closed cup - Tested according to Annex V of Directive 67/548/EEC |
| Evaporation rate | no data available |
| Flammability (solid, gas) | no data available |
| Upper/lower flammability or explosive limits | no data available |
| Vapor pressure | 1 hPa (1 mmHg) at 70.6 °C (159.1 °F) |
| Vapor density | 5.33 - (Air = 1.0) |
| Relative density | 0.879 g/cm ³ at 20 °C (68 °F) |
| Water solubility | 0.1 g/l at 25 °C (77 °F) |
| Partition coefficient: n-octanol/water | log Pow: 2.5 at 25 °C (77 °F) |
| Auto-ignition temperature | no data available |
| Decomposition temperature | no data available |
| Viscosity | no data available |
| Explosive properties | no data available |
| Oxidizing properties | no data available |

Other safety information

Relative vapor density 5.33 - (Air = 1.0)

10. STABILITY AND REACTIVITY:

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions

Possibility of hazardous reactions

No data available

Conditions to avoid

No data available

Incompatible materials

Strong oxidizing agents, Acid chlorides, Acid anhydrides

Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 3,600 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Coma. Skin and Appendages: Other: Hair.

Inhalation: no data available

LD50 Dermal - rabbit - > 5,000 mg/kg

No data available

Skin corrosion/irritation

Skin - rabbit

Result: Irritating to skin. - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - rabbit

Result: Risk of serious damage to eyes. - 24 h
(Directive 67/548/EEC, Annex V, B.5.)

Respiratory or skin sensitisation

- guinea pig

May cause sensitisation by skin contact

Germ cell mutagenicity

No data available

Carcinogenicity

IARC

No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

ACGIH

No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH

NTP

No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP

OSHA

No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: RG5830000

Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache

12. ECOLOGICAL INFORMATION:**Toxicity**

Toxicity to fish

Static test LC50 - Danio rerio (zebra fish) - ca. 22 mg/l - 96 h

(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

Immobilization EC50 - Daphnia magna (Water flea) - 10.8 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae

Growth inhibition EC50 - Desmodesmus subspicatus (green algae) - 13.1 mg/l

- 72 h

Persistence and degradability

Biodegradability aerobic Chemical oxygen demand - Exposure time 3 d

Result: 80 - 100 % - Readily biodegradable.

(OECD Test Guideline 301A)

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

Harmful to aquatic life

13. DISPOSAL RECOMMENDATIONS:

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material

Contaminated packaging

Dispose of as unused product

14. TRANSPORTATION INFORMATION:

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION:

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act

Pennsylvania Right to Know Components

Geraniol

CAS-No

Revision Date

106-24-1

1989-12-01

New Jersey Right to Know Components

Geraniol

CAS-No

Revision Date

106-24-1

1989-12-01

California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm

16. OTHER INFORMATION:

Full text of H-Statements referred to under sections 2 and 3

| | |
|---------------|-------------------------------------|
| Aquatic Acute | Acute aquatic toxicity |
| Eye Dam. | Serious eye damage |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H318 | Causes serious eye damage |
| H402 | Harmful to aquatic life |
| Skin Irrit. | Skin irritation |
| Skin Sens. | Skin sensitization |

HMIS Rating

| | |
|-----------------------|---|
| Health hazard | 2 |
| Chronic Health Hazard | |
| Flammability | 1 |
| Physical Hazard | 0 |

NFPA Rating

| | |
|-------------------|---|
| Health hazard | 2 |
| Fire Hazard | 1 |
| Reactivity Hazard | 0 |

Further information

The information in this MSDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the MSDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the MSDS. The user should review these regulations to ensure full compliance.