



1. Identification

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|---|--|
| Product identifier | Geraniol Prime |
| Other means of identification | |
| Product code | 05N60 |
| Recommended use | Fragrance Ingredient. |
| Recommended restrictions | None known. |
| Manufacturer/Importer/Supplier/Distributor information | |
| Company name | Renessenz LLC |
| Address | 601 Crestwood Street Jacksonville, Florida 32208 |
| Contact person | Regulatory Affairs Department |
| Telephone | 904-768-5800 |
| Emergency Telephone | CHEMTREC: (USA,Canada): 1-800-424-9300 ; (other): 703-527-3887 |
| Email | SDSRequest@renessenz.com |

2. Hazard(s) identification

| | | |
|------------------------------|---|-------------|
| Physical hazards | Not classified. | |
| Health hazards | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 1 |
| | Sensitization, skin | Category 1B |
| Environmental hazards | Hazardous to the aquatic environment, acute hazard | Category 3 |
| OSHA defined hazards | Not classified. | |
| Label elements |  | |

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| Signal word | Danger |
| Hazard statement | Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Harmful to aquatic life. |
| Precautionary statement | |
| Prevention | Avoid breathing mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves. Wear eye/face protection. |
| Response | If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. |
| Storage | Store away from incompatible materials. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |

3. Composition/information on ingredients

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|-------------------------------------|--------------------------|------------|-----|
| Reaction mass of geraniol and nerol | | 624-15-7 | 100 |

| Constituents | | | |
|---------------|--|------------|---------|
| Chemical name | | CAS number | % |
| Geraniol | | 106-24-1 | 60 - 65 |
| Nerol | | 106-25-2 | 35 - 40 |

4. First-aid measures

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| Inhalation | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| Skin contact | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse. |
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. |
| Ingestion | Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. |
| Environmental precautions | Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. |

7. Handling and storage

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|---|--|
| Precautions for safe handling | Do not get this material in contact with eyes. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Use care in handling/storage. |
| Conditions for safe storage, including any incompatibilities | Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

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| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Wear safety glasses with side shields (or goggles) and a face shield. |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. |
| Other | Wear appropriate chemical resistant clothing. |
| Respiratory protection | No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. |

9. Physical and chemical properties

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|---|--------------------------------|
| Appearance | Clear liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Nearly colorless |
| Odor | Floral. |
| Odor threshold | Not Relevant |
| pH | Not Relevant |
| Melting point/freezing point | 5 °F (-15 °C) |
| Initial boiling point and boiling range | 433.4 °F (223 °C) |
| Flash point | 212.0 °F (100.0 °C) Closed Cup |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | 5 (Air=1) |
| Vapor density temp. | 77 °F (25 °C) |
| Relative density | 0.878 |
| Relative density temperature | 77 °F (25 °C) |

| | |
|--|----------------|
| Solubility(ies) | |
| Solubility (water) | 0.1 g/l |
| Solubility temp. (water) | 68 °F (20 °C) |
| Partition coefficient (n-octanol/water) | 2.6 |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Bulk density | Not Relevant |
| VOC (Weight %) | estimated |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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|---------------------|--|
| Inhalation | No adverse effects due to inhalation are expected. |
| Skin contact | Causes skin irritation. May cause an allergic skin reaction. |
| Eye contact | Causes serious eye damage. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Toxicological data

| Constituents | Species | Test Results |
|--|----------------------------|---|
| Geraniol (CAS 106-24-1) | | |
| Acute | | |
| <i>Oral</i> | | |
| LD50 | Rat | 3600 mg/kg |
| Skin corrosion/irritation | Causes skin irritation. | |
| Irritation Corrosion - Skin | | |
| Geraniol (CAS 106-24-1) | | OECD 404 Result: Irritating. Species: Rabbit Patch Test Result: Severe irritation Species: Human |
| Nerol (CAS 106-25-2) | | OECD 404 Result: Irritating. Species: Rabbit |
| Serious eye damage/eye irritation | Causes serious eye damage. | |
| Eye | | |
| Geraniol (CAS 106-24-1) | | OECD 405 Result: Irritating. Species: Rabbit |

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

Skin sensitization May cause an allergic skin reaction.

Skin sensitization

Geraniol (CAS 106-24-1)

OECD 429

Result: Sensitizing.

Species: Mouse

Patch Test

Result: Sensitizing.

Species: Human

Nerol (CAS 106-25-2)

OECD 406

Result: Not sensitising.

Species: Guinea pig

OECD 429

Result: Sensitizing.

Species: Mouse

Patch Test

Result: Not sensitising.

Species: Human

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Germ cell mutagenicity: Ames test

Geraniol (CAS 106-24-1)

Result: negative

Mutagenicity

Reaction mass of geraniol and nerol

OECD 474

Result: Negative

Species: Mouse

OECD 476

Result: Negative

Species: Hamster, Chinese

Organ: Ovary

Nerol (CAS 106-25-2)

OECD 471

Result: negative

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reaction mass of geraniol and nerol

2000 mg/kg bw/day NTP, Read-across

Result: Negative

Species: Rat

Test Duration: 103 weeks

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Fertility effects - Males and females

Reaction mass of geraniol and nerol

1000 mg/kg bw/day OECD 421

Result: Negative

Species: Rat

Reproductivity

Geraniol (CAS 106-24-1)

300 mg/kg bw/day OECD 414

Result: Inconclusive

Species: Rat

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not classified.

12. Ecological information

Ecotoxicity Harmful to aquatic life.

| Product | Species | | Test Results |
|--|---------|---------|---------------------------------|
| Reaction mass of geraniol and nerol (CAS 624-15-7) | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Algae | EC50 | Algae | 13.1 mg/l, 72 hours growth rate |
| Crustacea | EC50 | Daphnia | 10.8 mg/l, 48 hours mobility |
| Constituents | Species | | Test Results |

| | | | |
|-------------------------|------|-------------|---------------------|
| Geraniol (CAS 106-24-1) | | | |
| Aquatic | | | |
| <i>Acute</i> | | | |
| Algae | EC50 | Algae | 5.93 mg/l, 72 hours |
| Crustacea | EC50 | Daphnia | 7.75 mg/l, 48 hours |
| Fish | LC50 | Danio rerio | 14 mg/l, 96 hours |

Persistence and degradability Rapidly degradable.

Biodegradability

Percent degradation (Aerobic biodegradation-ready)

| | |
|-------------------------|--|
| Geraniol (CAS 106-24-1) | 90 - 100 OECD 301 A Result: Readily biodegradable Species: Activated sludge Test Duration: 3 days |
| Nerol (CAS 106-25-2) | 91 % OECD 301 F Result: Readily biodegradable Species: Activated sludge Test Duration: 28 days |

Bioaccumulative potential The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Reaction mass of geraniol and nerol 2.7

Mobility in soil The product is not expected to adsorb to soil.

Adsorption

Soil/sediment sorption - log Koc

| | |
|-------------------------|-----------------|
| Geraniol (CAS 106-24-1) | 1.85 Calculated |
| Nerol (CAS 106-25-2) | 1.84 Calculated |

Mobility in general

Volatility

Henry's law

Geraniol (CAS 106-24-1) 5.97, m³*Pa/mol

Henry's law temperature

Geraniol (CAS 106-24-1) 25, °C

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

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| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

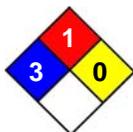
16. Other information, including date of preparation or last revision

Issue date 04-December-2014

Revision date 20-July-2015

Version # 03

NFPA ratings



Disclaimer

Renessenz LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.