



**Citronellol** is a naturally occurring aromatic compound classified as a monoterpene. It is a type of alcohol commonly found in the essential oils of various plants, including citronella, rose, and geranium. Citronellol is widely used in the fragrance and cosmetic industries due to its pleasant, fresh, and slightly floral scent, reminiscent of roses.

## Chemical Properties of Citronellol

### 1. Aromatic Properties:

- Citronellol is primarily known for its fragrance. Its fresh, floral scent with citrusy undertones makes it a popular ingredient in perfumery and scented products.
- The aroma is similar to that of roses and is often used to enhance or mimic the scent of rose oil in formulations.

### 2. Reactivity:

- Citronellol is reactive with oxidizing agents, and exposure to air can lead to oxidation, forming compounds like citronellal and other oxidized derivatives. These can sometimes cause skin sensitization in susceptible individuals.
- The compound can also undergo esterification reactions, which are used in fragrance chemistry to create various esters that have different scents and properties.

### 3. Solubility:

- Citronellol is moderately soluble in water but is more soluble in organic solvents such as alcohols and oils. This solubility profile makes it easy to incorporate into various formulations, especially those based on oils and alcohols.

**4. Boiling Point:**

- Citronellol has a boiling point of approximately 225°C (437°F), which is relatively high for a fragrance compound. This makes it stable at room temperature and suitable for use in a wide range of products.

**5. Antimicrobial and Insect-Repellent Properties:**

- Citronellol exhibits mild antimicrobial properties, which contribute to its effectiveness in preserving cosmetic formulations by inhibiting the growth of certain bacteria and fungi.

- It is also an effective insect repellent, particularly against mosquitoes, which is why it is commonly included in insect repellent formulations.

**6. Isomerism:**

- Citronellol exists in two stereoisomeric forms, known as (R)-(+)-citronellol and (S)-(-)-citronellol. The two isomers have slightly different olfactory characteristics