Chemical Properties of Linalool:

1. **Molecular Structure:**
   - **Molecular Formula: $C_{10}H_{18}O$**
   - **Molecular Weight: 154.25 g/mol**
   - **Structure: Linalool is a linear monoterpene with a structure characterized by a hydroxyl group (-OH) attached to a chain of ten carbon atoms.**
2. **Physical Properties:**
   - **Appearance: Linalool is a colorless to pale yellow liquid.**
   - **Odor: It has a sweet, floral, and slightly woody aroma.**
   - **Boiling Point: Approximately 198–200°C (388–392°F).**
   - **Density: Around 0.86 g/cm³ at 20°C.**
   - **Solubility: It is slightly soluble in water but highly soluble in organic solvents like ethanol and diethyl ether.**
3. **Chemical Behavior:**
   - **Reactivity: Linalool can undergo typical reactions of alcohols, such as oxidation, esterification, and dehydration. It can be oxidized to form linalool oxide or dehydrogenated to form myrcene.**
   - **Stereoisomerism: Linalool exists in two enantiomeric forms (stereoisomers): (R)-(-)-linalool and (S)-(+)-linalool. These enantiomers can have different sensory properties and biological activities.**
   - **Stability: Linalool is relatively stable, but it can be prone to oxidation when exposed to air, leading to the formation of peroxides, which can alter its aroma profile.**