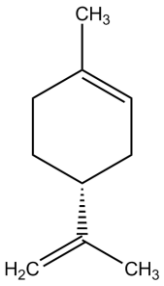
Chemical profile – R-(+)-Limonene

Basic information



IUPAC name: 1-methyl-4-prop-1-en-2-yl-cyclohexene
Other names: D-limonene, R-(+)-p-mentha-1,8-diene, 1-methyl-4-(1-methylethenyl)-cyclohexene
Molecular formula: $C_{10}H_{16}$
Molecular weight: 136.23 g mol^{-1}

Physical properties

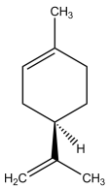
Appearance: Colourless to pale yellow liquid
Relative density: 0.842 g cm^{-3}
Melting point: -74 °C
Boiling point: 176 °C
Flash point: 48 °C – closed cup

Occurrence and uses

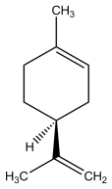
R-(+)-Limonene occurs naturally in the oil of citrus fruits including lemons, grapefruit and oranges. It is being increasingly used in cleaning productions, in addition to its use as a food additive, an insecticide and an industrial solvent. Limonene is favourable over a number of industrial solvents due to its relatively low toxicity, it's biodegradability and the fact that is can be obtained from renewable resources.

Links to curriculum

Stereoisomers:



R-(+)-Limonene



S-(-)-Limonene

Functional groups: Alkenes

Use in practical experiments: Learn Chemistry resources 'Properties of Stereoisomers', 'Testing for unsaturation using bromine', 'Testing for unsaturation using potassium manganite (VII)' and 'Extracting Limonene from Oranges'.

ROYAL SOCIETY OF CHEMISTRY

LearnChemistry
Enhancing learning and teaching