



THE AROMA OF COFFEE



COFFEE BEANS & COFFEE BREW



ROASTED COFFEE BEANS CONTAIN OVER
1000 CHEMICAL COMPOUNDS

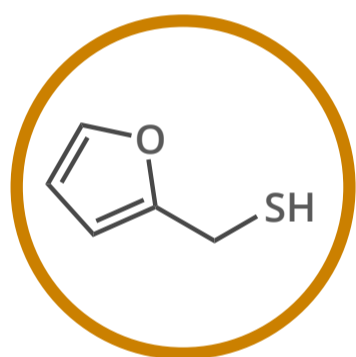


EXTRACTION YIELDS DURING COFFEE BREWING
NON-POLAR COMPOUNDS: 10-25%
POLAR COMPOUNDS: 75-100%

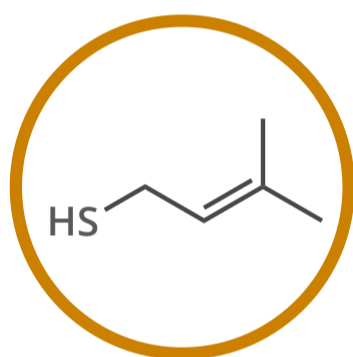


Not all compounds in coffee beans are extracted during brewing. Polar molecules are more soluble in water; they arise when uneven sharing of electrons between atoms leads to the two ends of a molecule having slight electrical charges.

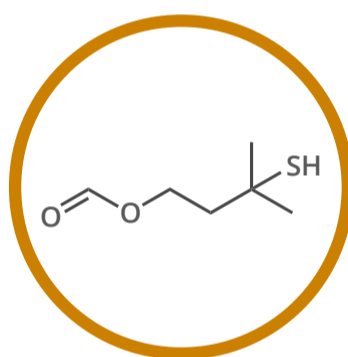
A SELECTION OF AROMA COMPOUNDS IN BREWED COFFEE



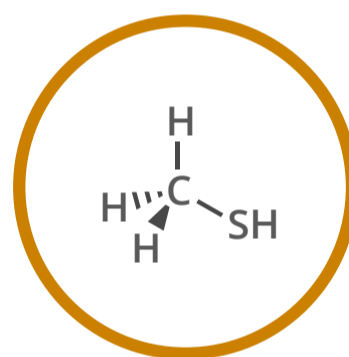
2-FURFURYLTHIOL
roasted (coffee)



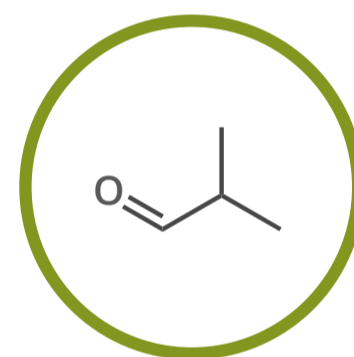
3-METHYL-2-BUTEN-1-THIOL
amine-like, sulfurous



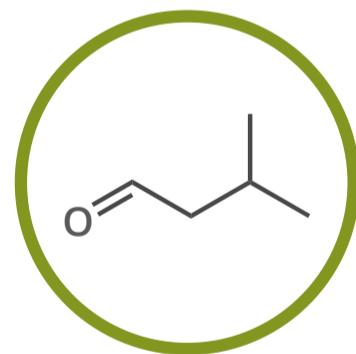
3-MERCAPTO-3-METHYLBUTYLFORMATE
catty, roasted



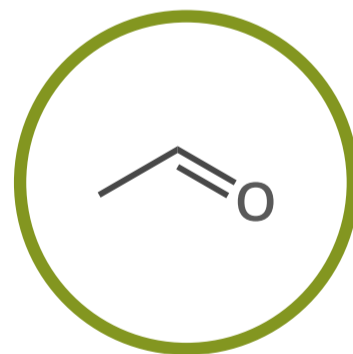
METHANETHIOL
rotten cabbage



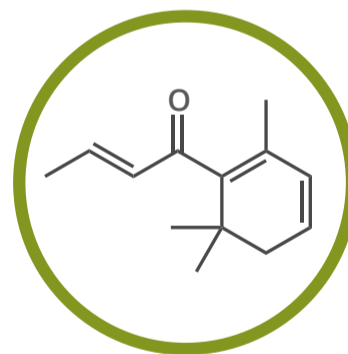
METHYLPROPANAL
floral, spicy



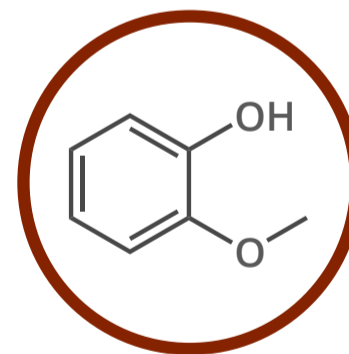
3-METHYLBUTANAL
fruity, malty



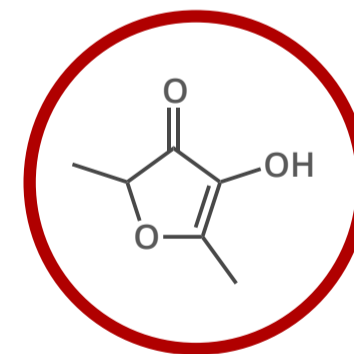
ACETALDEHYDE
pungent, fruity



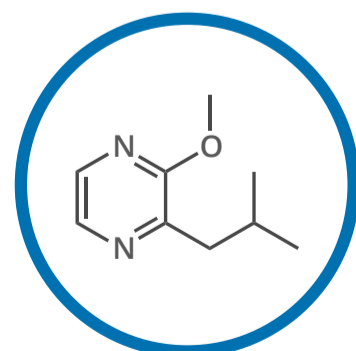
(E)-β-DAMASCENONE
honey, fruit-like



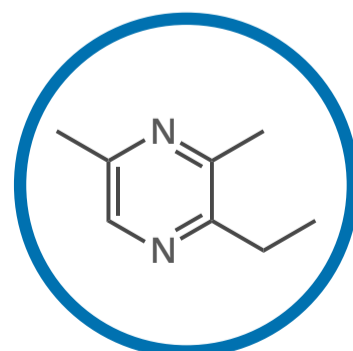
GUAIACOL
smoky, spicy



FURANEOL
sweet, caramel



2-ISOBUTYL-3-METHOXPYRAZINE
earthy



2-ETHYL-3,5-DIMETHYLPYRAZINE
earthy, roasted

KEY

- Sulfur-containing
- Aldehydes & ketones
- Phenolic
- Furans
- Pyrazines

Coffee contains several hundred different chemical compounds, but only a minority of these contribute to the aroma. A compound's contribution to aroma is dependent on both its concentration and the threshold at which its smell can be perceived by humans. There are also variances in chemical composition for different coffee beans, leading to the variety of differing tastes and aromas.

