



chem-ID
Your Lab. To Go.

Hydrocarbon Separation Capabilities of the Chem-ID



What chemicals can be found in gasoline?

What should I know about the composition and purity of gasoline?

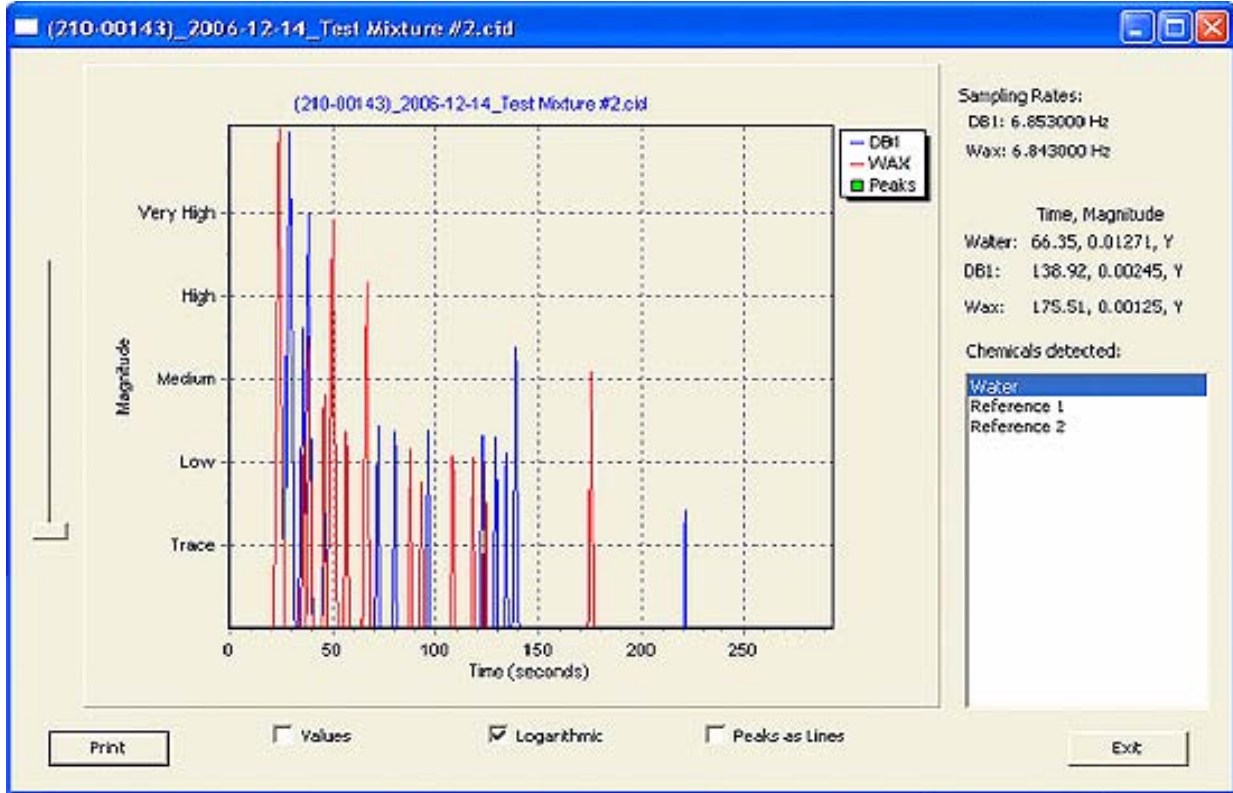
- This chemical profile record refers to common, commercial unleaded gasoline used for automotive purposes, unless otherwise specified.
- Gasoline is a complex mixture of petroleum hydrocarbons. The composition of the hydrocarbons depends on factors such as the origin of the crude oil used for refining and refining conditions. In general, the hydrocarbon groups consist of chains containing 4 to 12 carbons, and are mostly paraffins (alkanes), isoparaffins (isoalkanes), cycloparaffins (cycloalkanes) and aromatics. n-Hexane (1.5-3.0%) and benzene (0.5-2.0%) are normally present.
- In addition, trace or small amounts of additives and blending agents such as anti-knock compounds (MMT - methylcyclopentadienyl manganese tricarbonyl), anti-icing agents, anti-rust agents and metal deactivators can be found in gasoline.
- The chemical and physical properties of gasoline are highly variable depending on the specific product. As well, the hazards of gasoline are affected by the proportion of individual components. For example, gasoline containing a significant proportion of n-hexane may have toxic effects attributable to n-hexane. For information on specific components in gasoline consult the manufacturer or the appropriate chemical profile record(s) where possible.

Chem-ID Testing

Testing has been done with specialty gasoline mixtures and column resolution test mixtures

- Test Mixture #1 (10 components) contains:
 - n-pentane(C5),
 - n-hexane(C6),
 - n-octane(C8),
 - n-decane(C10),
 - n-dodecane(C12),
 - 1-methylnaphthalene,
 - naphthalene, toluene,
 - 1,2,3-trimethylbenzene,
 - all at 1,000ug/mL in a balance of methanol.
- Test Mixture #2 (14 components) contains:
 - n-hexane(C6),
 - n-octane(C8),
 - n-decane(C10),
 - n-dodecane(C12),
 - n-tetradecane(C14),
 - n-hexadecane(C16),
 - n-octadecane(C18),
 - n-eicosane(C20),
 - 2-ethyltoluene,
 - 3-ethyltoluene,
 - toluene,
 - 1,2,4-trimethylbenzene,
 - p-xylene,
 - all at 2,000ug/mL in balance methylene chloride.

Although all of the components haven't been added to our chemical library you can see that the Chem-ID is able to resolve all the hydrocarbon components from one another



Highest magnitude peaks are Methylene chloride
- the balance of the mixture

