Fats!

Fatty acids are derived from hydrocarbons.

If $R = \text{alkane}$: \textit{saturated fat}

$\text{alkene}$: \textit{unsaturated fat}
Properties of fats

- **Saturated fats (shortening)**
  Solids at room temperature
  Less reactive
  Animal fats (lard)

- **Unsaturated fats**
  peanut oil
  Olive oil (mostly oleic acid)
  Mono unsaturated
  Naturally occurring ones are usually cis
  Liquids at room temperature
  Often found in plants
Hydrogenation

• To convert unsaturated fats into saturated fats

liquid oils to solid (margarine)

HYDROGENATION

By products include trans fats:

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH} & \quad \text{CH} & \quad \text{CH}_2 & \quad \text{CH}_3 \\
\end{align*}
\]

\[
\text{CH}_3 \quad \text{CH}_2 \quad \text{CH} \quad \text{CH} \quad \text{CH}_2 \quad \text{CH}_3
\]

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\text{CH}_3 + \text{H}_2
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