

## INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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Datum vytvoření: 22. 3. 2013  
Číslo DUMu: VY\_32\_INOVACE\_13\_AJ\_ACH  
Ročník: 1. – 4. ročník  
Vzdělávací oblast: Jazyk a jazyková komunikace  
Vzdělávací obor: Anglický jazyk  
Tematický okruh: odborná slovní zásoba pro studenty aplikované chemie  
Klíčová slova: olej, tuky, emulze, hydrogenace

### Metodický list/anotace:

Materiál slouží k seznámení se základní odbornou slovní zásobou pro studenty oborů Aplikovaná chemie. Jedná se zejména o termíny z oblasti biologie a chemie.

Studenti odhadují na základě svých znalostí význam slov. V případě potřeby pracují se slovníkem.

# Oils, emulsions and hydrogenation

# Vegetable oils

Vegetable oils are natural oils found in seeds, nuts and some fruit. They can be extracted.

Molecules of vegetable oils consist of glycerol and fatty acids.

Vegetable oils have higher boiling points than water.

Saturated oils tend to be solid at room temperature, unsaturated oils tend to be liquid at room temperature.

# Emulsions

- If oil and water are shaken together, droplets of oil spread through the water, forming a mixture called an ***emulsion***
- ***emulsifiers*** are substances that stabilise emulsions
- emulsifier molecules have two different ends:
  - a hydrophilic end* - 'water-loving' - that forms chemical bonds with water but not with oils
  - a hydrophobic end* - 'water-hating' - that forms chemical bonds with oils but not with water

# Hydrogenation

- Saturated vegetable fats are solid and have a higher melting point than unsaturated oils. This makes them suitable for making margarine, or for commercial use in the making of cakes and pastry. Unsaturated vegetable oils can be 'hardened' by reacting them with hydrogen. This reaction is called hydrogenation.

# Remember

- Vegetable oils are obtained from plants.
- They are important ingredients in many foods, and can be hardened to make, for example, margarine.
- They can also be used as fuels, for example as biodiesel.
- Emulsifiers are food additives that prevent oil and water mixtures in food from separating.

# Literatura

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