

Grade 10 MYP Science LIS – Separation Techniques - Review

Understand the differences between elements, compounds and mixtures

Describe techniques for the separation of mixtures, including simple distillation, fractional distillation, filtration and paper chromatography

Recall that crude oil is a mixture of hydrocarbons

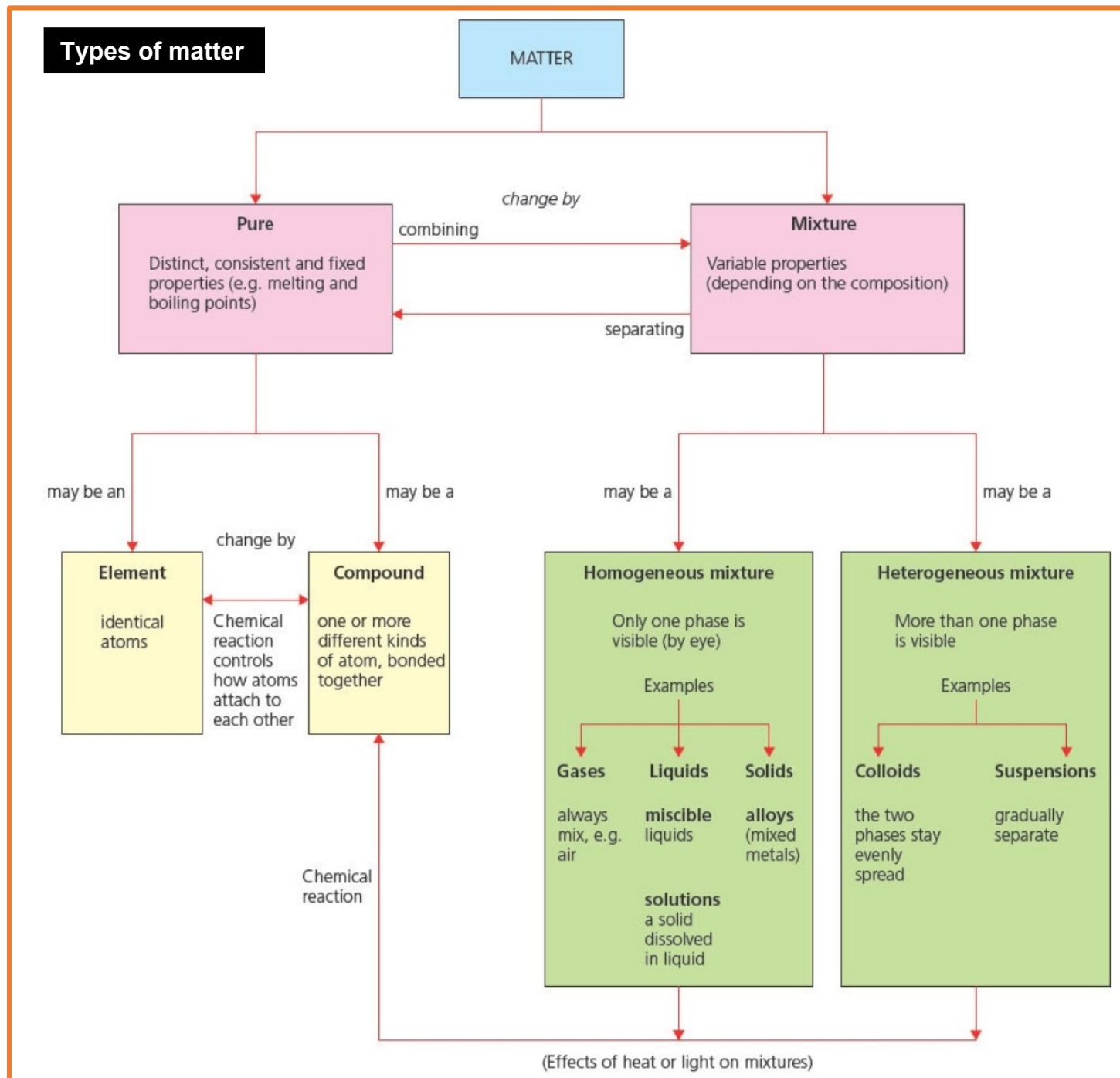
Describe how the industrial process of fractional distillation separates crude oil into fractions

Recall the names and uses of the main fractions obtained from crude oil: refinery gases, gasoline (petrol), kerosene, diesel, fuel oil and bitumen

Describe the trend in boiling point and viscosity of the main fractions

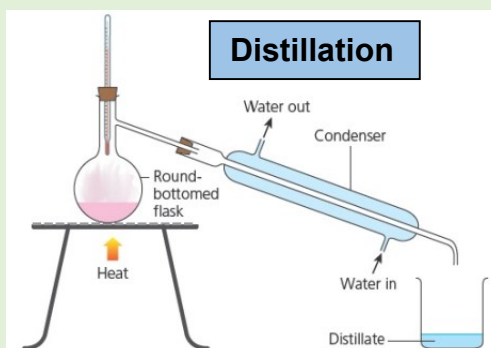
Describe solutions, oils, alloy and emulsions

Give the properties of solutions, oils, alloys and emulsions

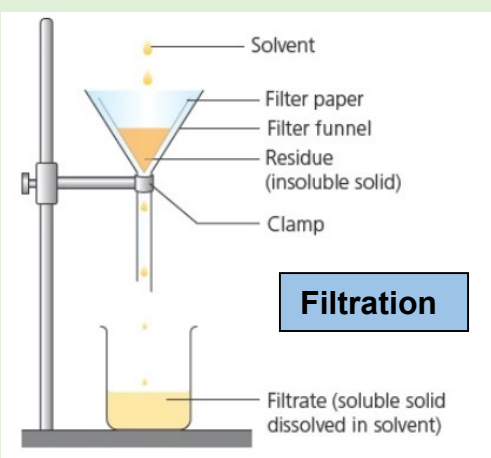


Separation methods

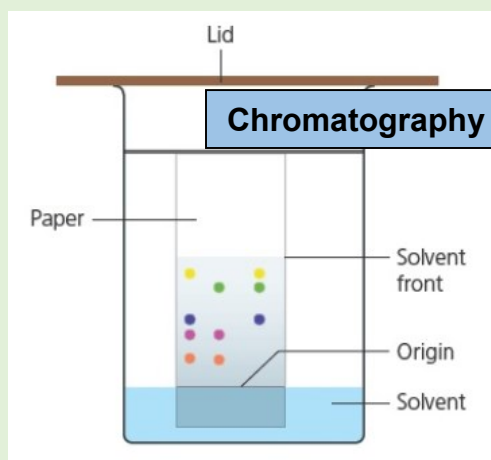
Distillation



Filtration



Chromatography

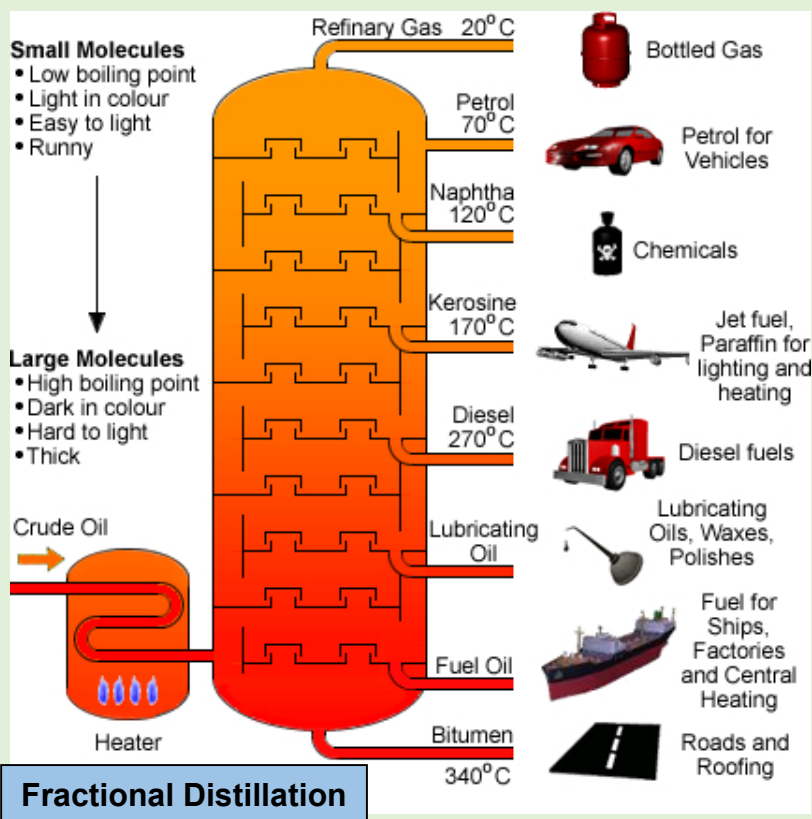


Small Molecules

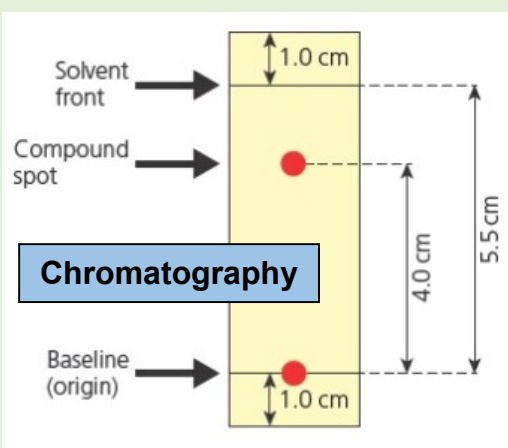
- Low boiling point
- Light in colour
- Easy to light
- Runny

Large Molecules

- High boiling point
- Dark in colour
- Hard to light
- Thick



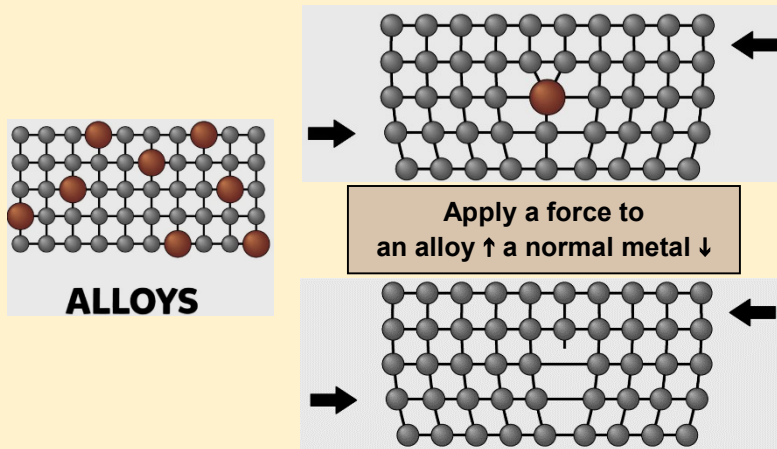
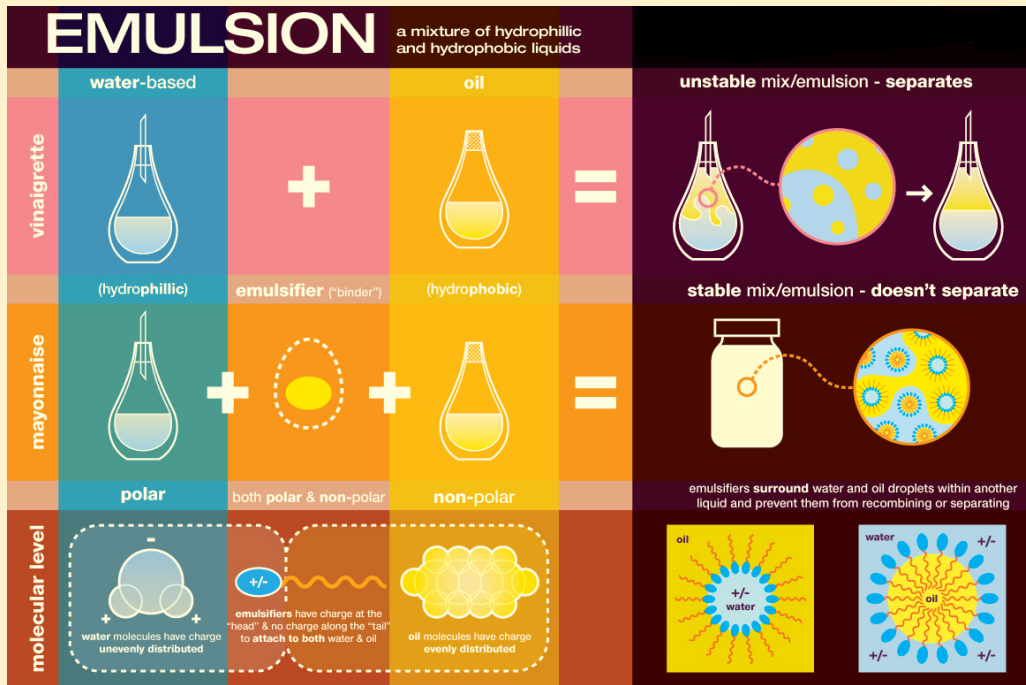
Fractional Distillation



Chromatography

$$R_f = \frac{\text{distance moved by the compound}}{\text{distance moved by the solvent}}$$

Solutions, Alloys, Emulsions



BRASS

Cu	MIN 65%	MAX 90%	Zn	MIN 10%	MAX 35%
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Pb Older compositions contained lead, but no longer used due to toxicity.

Decoration, plumbing, instruments

STERLING SILVER

Ag	92.5%	Cu	Pt	Ge	Zn
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Must contain 92.5% silver; remainder is other metals, usually copper.

Cutlery, jewelry, musical instruments

