# 8 - Purity and Formulations

02 March 2020 09:02

In Chemistry a pure substance only contains one compound or one element

We can use the melting and boiling points to tell if a substance is pure or not

- A pure substance will have a very specific mpt or bpt
- Compare the value with a data book/website
- The closer the number to the data book value the purer the substance
- Impurities lower the mpt and increase its range
- Impurities raise the bpt and increase the range

## Formulations

Mixtures with a precise amount of the various components. You have a measured amount of each component and each component contributes to how the mixture works. So its a recipe, accurately followed.

Paint is a good example

| STEP | COMPONENT | DESCRIPTION | WEIGHT (%) |
|---|---|---|---|
| 1 | 62.5% Soybean Oil Alkyd | 60% solid | 53.61 |
| 2 | White Spirit | solvent | 6.35 |
| 3 | Anti-terra U | dispersant | 0.31 |
| 4 | 2% Ca Naphthenate | catalyst | 0.65 |
| 5 | Bentone HF120 | thickener | 0.53 |
| 6 | $TiO_2$ (CR828) | pigment | 23.74 |
| 7 | 4% Co Naphthenate | catalyst | 0.19 |
| 8 | 10% Zr Naphthenate | catalyst | 0.78 |
| 9 | MEKO | | 0.29 |
| 10 | White Spirit | solvent | 3.45 |
| 11 | Hydrophilic Surfactant | | 0.56 |
| 12 | Hydrophobic Surfactant | | 0.14 |
| 13 | AMP95 | | 0.1 |
| 14 | Deionized Water | | 10 |
| Total | | | 100.7 |

Paints!

Formulations are really important in pharmaceutical industry. Altering the mix can get the pill to work on a different part of the body at the right concentration. It also needs to be as safe as possible and not go off quickly.