

# Dispersion systems

**Dispersion system** is a system that contains at least two phases or two components (chemical individual), whereby one discontinuous phase or component (dispersion part - dispersum) is more or less dispersed in the second continuous phase or component (dispersion medium - dispersant).

If the system contains two phases, there is a certain boundary between the particles forming the dispersion fraction and the second phase that surrounds them. Such a system is called **heterogeneous**. If, on the other hand, it contains two components and only one phase, the component forming the dispersion part is dispersed in the component forming the dispersion environment in such small particles (atoms, molecules) that one cannot speak of an interface, and such a system is called **homogeneous**.

Dispersion systems can be classified according to different criteria such as state or particle size. For spherical particles, the reciprocal of the particle diameter is called the degree of dispersion (the dimension is  $\text{m}^{-1}$ ). A higher degree of dispersity therefore means a finer dispersal of the dispersion fraction. In a monodisperse system all particles have the same size, in a polydisperse system there are particles of different sizes.

Depending on the size of the particles, we roughly distinguish:

- analytical dispersion (up to 1 nm);
- colloidal dispersion (1 nm to 1  $\mu\text{m}$ );
- coarse dispersion (1  $\mu\text{m}$  to 1 mm).

If the particles are larger than 1 mm, it is no longer a dispersion, but a continuous mass.

In medicine, knowledge of dispersion systems is especially important when administering medicinal substances in the form of medicinal preparations, which can form:

- ionic dispersions;
- molecular dispersions;
- colloidal dispersion.

## Links

## References

- KYMPLOVÁ, Jaroslava. *Katalog metod v biofyzice* [online]. [cit. 2012-09-20]. <<https://portal.lf1.cuni.cz/clanek-793-katalog-metod-v-biofyzice>>.