

## PRECIPITATION / FLOCCULATION

### Description/Application

By specific addition of flocculant and flocculation aid it is possible to convert dissolved matter into a hardly soluble form which can be precipitated. Additionally coprecipitation and adsorption processes can appear resulting in a continuative elimination of other contaminants.

Normally a sedimentation or filtration is necessary after the flocculation treatment step. In some cases a flotation can also be used.

### Sludge dehydration

The accumulated hydrous sludge during the flocculation has to be treated before disposal. Delta Umwelt-Technik GmbH mostly uses therefor techniques for dewatering in terms of chamber filter or belt filter presses. In some cases also static sludge thickener are applied. This thickening is attended by a minimisation of the sludge volume and therefore a reduction in disposal costs.

### Experience and application

Delta Umwelt-Technik GmbH applies the flocculation for the following applications:

- preconditioning of landfill lechate,
- decalcification/slow decarbonisation of process waters, e.g. in the pharmaceutical industry,
- de-ironing of groundwater ahead further treatment,

- precipitation of heavy metals (hydroxide precipitation),
- flocculation filtration to enhance the filtration mode.

