



# Erbo Spraytec AG: Tailor-made powder products Process examples

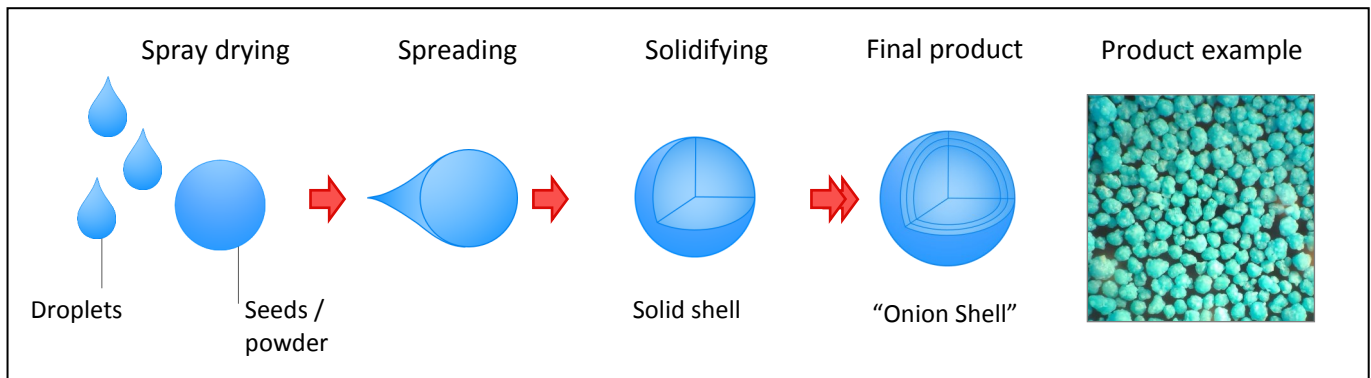
## Examples for processes with **hydrosoluble substances**

### Onion Shell Granulation

Description: A substance is continuously sprayed into a hot air stream. The initially formed small powder seeds are spread by another layer or substance and grow layer by layer to bigger granules with an onion shell structure.

Purpose: Lowering the quotient of surface / volume, e.g. in order to reduce hygroscopicity and/or get a free flowing product

Examples: Non-hygroscopic and stable organic trace element

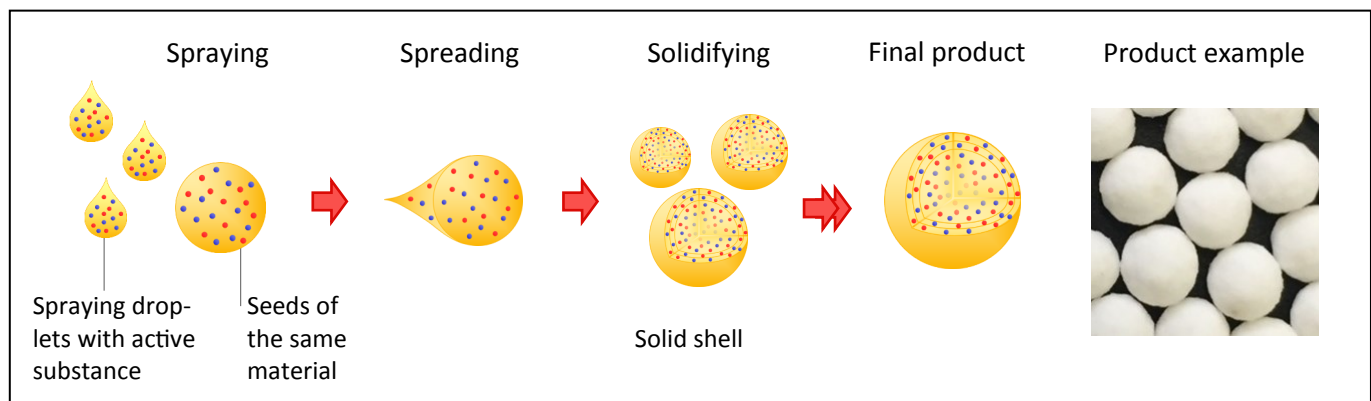


### Matrix encapsulation O/W

Description: An essential oil (or mixture of essential oils) is dispersed and encapsulated in a matrix of hydrophilic substances

Purpose: Protection of the oils from "environmental" influences (e.g. oxidation), taste masking (e.g. for animal feed), amelioration of the handling properties (e.g. better miscibility, less irritation) eventually also for further processing, etc.

Examples: Encapsulation of essential oils and plant extracts

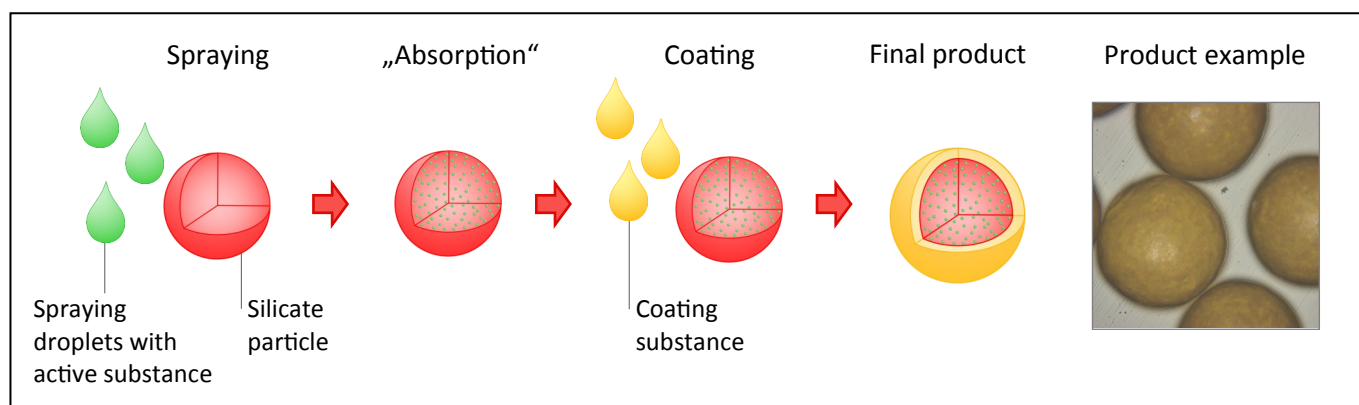


## Coating

**Description:** The active substance is brought into a powder form by absorbing it on silicate particles (that absorb the liquid substance). In a second step, a hydrosoluble substance (e.g. HPMC) is sprayed on the silicate core, in order to coat it.

**Purpose:** Taste masking, target release of the active substance, amelioration of handling properties, protection for further processing, etc.

**Examples:** Encapsulation of plant extracts



## Multi-Layer Coating

**Description:** Different coating substances are sprayed consecutively on the core material, in order to coat the core material with multiple layers, each of them having defined properties.

**Purpose:** Sequential release of the active ingredients in the different layers

**Examples:** Double sensation taste enhancer (combination of an attractive smell and taste in the same product)

Controlled / target release of different substances in the digestive system

