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VLCI Workshop:
Predictive Formulation Science HSP & Its Applications
*Hosted by VLCI Experts - Amsterdam Science Park*

The predictive formulation science, Hansen Solubility Parameters (HSP) is a very powerful tool for finding matching ingredients, resulting in improved stability and efficacy of end-products. The model is applicable to solutions, dispersions and in some cases emulsions, which basically includes all types of formulated products. Although it has been applied for many years, there is still a limited use of it in formulation developments and ingredients thereof. The equation of the science requires the input of (practical) parameters from the ingredients which, once generated, can predict (in)compatible ingredients to develop and optimize specific formulations. The ingredient's data generated from the model is predictive and sustainable: you can use them over and over, allowing to move away from trial-and-error and to use digitalization effectively for product developments. This is a very efficient way to enhance the properties of a formulation and to reduce complexity, time and cost of its development. When combined with High Throughput (HT) screening for automated, parallel and small-scale preparation of samples and end-products, further efficiency can be achieved. HSP find its use in a wide variety of applications; coatings, personal care, household, polymers, agrochemicals, EOR, pharmaceuticals, etc.

Hansen Solubility Parameters (HSP)

Characterizes an ingredient/product by its interaction parameters; δD - dispersion forces, δP - Polarity, and δH - Hydrogen bonding. Based upon these, the product compatibility and incompatibility can be predicted with other ingredients to build up an entire formulation or improve an existing formulation.
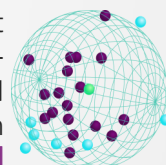
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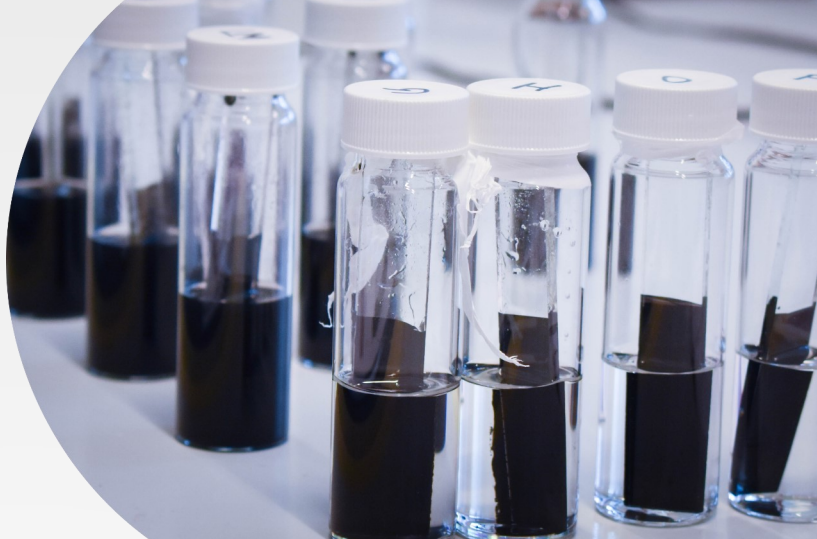
What you will learn in this workshop

- An introduction to the predictive science HSP and the ingredient parameters it requires, via **presentations** and **case studies** of their use in efficient product development.

- How to **determine the required ingredient parameters** via practical **sample preparation**, **rating of samples** and the **use of software/ apps**.

- **Implementation of the parameters** to find matching ingredients, to make incompatible ingredients become compatible and to develop formulations based upon predictions.

- For which applications HSP can be used and **how the strategies aid effective implementation**.

- **Interact with experts** and obtain as much knowledge as possible to **get started with the implementation of the predictive formulation science HSP in your own labs**.

Level required to attend this workshop

- A **basic understanding of ingredients and formulation**; you know the function of several different ingredients, and how to use them to develop formulations.

- A **brief look at the predictive formulation science HSP**:
  https://www.stevenabbott.co.uk/practical-solubility/

- And also **articles showcasing many different applications** on our website:
  https://vlci.biz/our-work/

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- **Duration**: 2 days (advanced level)
- **Cost**: €750/participant
- **Maximum number of participants**: 16