# Webinar Workshop:
## Predictive Formulation Science HSP and its applications

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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. This predictive formulation science HSP find its use in a wide variety of applications; coatings, personal care, household, polymers, agrochemicals, EOR, pharmaceuticals, etc.

## What you will learn in this workshop:

- An introduction to the predictive science HSP and the ingredient parameters that 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 sciences HSP, see also;
  https://www.stevenabbott.co.uk/practical-solubility/
  And articles showcasing many different applications on our website: https://vlci.biz/case-studies/

The cost for this webinar workshop is; 300 euro/person. The workshop for HSP takes 3,5-4 hours.

# Program, led by VLCI experts online

**14:00** – Arrival, Tech set up/check and introduction of participants

**14:15** – Introduction presentation, Sander van Loon, VLCI

**14:45** – HSP – What they are and how to use them, Sander van Loon, VLCI (based on presentation from Prof. Steven Abbott, TCNF LTD)

**15:05** – How to practically determine HSP, Beverley Fricker, VLCI

**15:25** – Coffee break

**15:35** – How to assess samples, Beverley Fricker, VLCI

**16:05** – Use of HSPiP software, Beverley Fricker, VLCI

**16:30** – Beyond solubility / Predictive formulation strategies, Beverley Fricker, VLCI

**16:50** – Science Based Formulation and web-apps, Sander van Loon, VLCI

**17:05** – Live challenge/questions; your [non-confidential] problems – receive HSP strategy to problem solving, Sander van Loon & Beverley Fricker, VLCI

**17:35** – Closure, Sander van Loon, VLCI