uncountable

DOE & PREDICTIVE TOOLS

Predictive models built on your chemistry

Record the physical properties of every ingredient alongside your formulations and test results, so models learn from chemistry rather than from ingredient names alone.

Uncountable's AI end-to-end platform is deployed by 175+ global teams

DUPONT · SunChemical a member of the DIC group · Sika · CLARIANT · Mondelēz International · Beiersdorf

The model only sees a recipe

Train on ingredient percentages alone and a model learns which named materials were used, not why they worked. Introduce a new supplier grade and it has nothing to go on, so the learning curve starts again.

45%
Less DOE workload across R&D projects

SCG CHEMICALS

"What has made the partnership remarkably successful is that our formulators are treating this digital tool like a seamless extension of their own expertise, allowing them to build on their own knowledge rather than competing with a generic digital model."

Thomas Schornstein, Beiersdorf

Chemistry and formulation on one record

Ingredients are real records
Each ingredient exists on its own, shared across every formulation it appears in.

Attributes travel with them
MW, density, Tg, particle size. Any property relevant to your chemistry, recorded once.

Input calculations
Weight ingredient properties by their amounts to give each experiment a physical profile.

Features, not just percentages
Amounts and attribute-derived features go into the model together as predictors.

Generalizes to new materials
A grade the model has never seen is scored on its attributes, with no retraining.

Constraints it respects
Set limits on physical properties and optimization stays inside them.

From ingredient attributes to a prediction

ILLUSTRATIVE EXAMPLE

INGREDIENT RECORDS

Acrylic X	**MW 92,400 g/mol**	**Tg 91 °C**
Filler B	**D50 3.8 µm**	
Resin C	**MW 6,200 g/mol**	**Tg 54 °C**

FORMULATION

Acrylic X 60 %	**Filler B 25 %**	**Resin C 15 %**

INPUT CALCULATIONS

Wtd avg MW	**48,200 g/mol**
Wtd avg Tg	**79 °C**
Avg D50	**3.2 µm**

PREDICTIONS

Viscosity	**3,200 cP**
Film hardness	**65 Shore D**
Gloss	**79 GU**

Acrylic X is a grade the model has never seen. It is scored from its attribute-derived features, with no retraining.

- Every ingredient carries its measured physical properties
- Input calculations roll those properties up per formulation
- Amounts and derived features train one model together
- A new grade is scored on its attributes, with no retraining
- Constraints keep suggested experiments physically realistic

What sets Uncountable apart for predictive modeling

Structure first, AI second
Pattern recognition only works on history captured in a comparable format.

One system, not a pipeline
Attributes and experiment results sit together, so features are built, not exported.

Grounded in your own work
Models learn from your history and your chemistry, not from a generic model.

Domain knowledge in the loop
Physical constraints you set decide which experiments get suggested.

1. **Record the attributes**
   Add the properties you already measure to each ingredient.
2. **Define input calculations**
   Weight those properties by amount across the formulation.
3. **Train on your history**
   Train on past experiments, including the failures.

Any numerical ingredient attribute you store can become a predictor in your model.

See it on your own formulations

No slideware, just your workflow. Request a demo at uncountable.com.

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