

Lubricants, grease, bitumen, solvents

Blend on the index not on a spreadsheet

Viscosity solved on the Refutas index, a least-cost blend, and the tank heel counted before the batch instead of discovered after it – tied to accounting and stores.

Refutas index

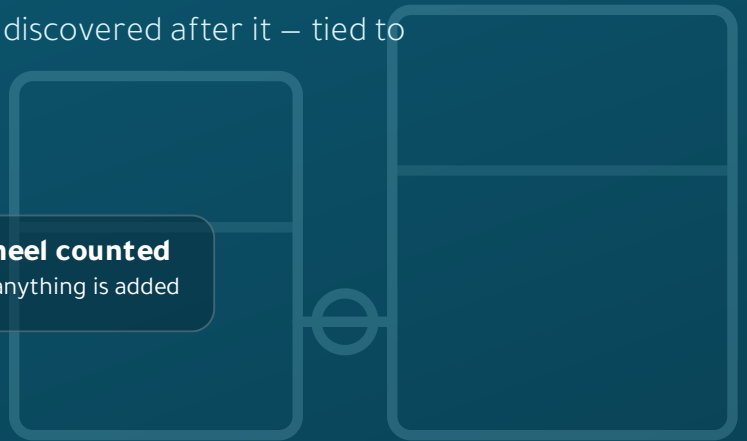
Viscosity blended by mass, correctly

Rework costed

The failed attempt carried forward

Tank heel counted

Before anything is added



From base oil to drum – right the first time

Base oils and additives go into grades with a viscosity window. VLUERP predicts the blend, checks the tank it will go into, and costs every batch – including the ones blended twice.



Viscosity done properly

Every blend goes through the Refutas index, which adds up by mass – viscosity itself does not, and a straight average is far out.



The cheapest recipe in spec

Once viscosity is in index space the window is linear, so the shared simplex finds the least-cost recipe inside every limit.



Tanks that are never empty

Each tank keeps its heel – kilograms, viscosity and grade – and a planned batch is flagged if the heel would push it out of spec.



Rework at its real cost

A reblend carries the failed attempt's whole cost forward, so the plant sees what getting it wrong first time is costing.

142%

error from averaging

19.14%

bright stock for 46 cSt

90%

of PPD effect at its dose

263 kg

flush vs a 20 t reblend

Viscosity does not average – so the engine doesn't

The Refutas index, $VBN = 14.534 \ln(\ln(v + 0.8)) + 10.975$, is additive by mass. Recipes, predictions and least-cost blends are all solved in it.



Blending on the index

- Every component's viscosity is converted to its blending index, mixed by mass and converted back.
- The grade page draws the curve between the two largest components, beside the straight line averaging gives.
- A least-cost blend inside every window runs on VLUERP's shared blending solver.
- A consistent bias between prediction and measurement is flagged as a meter or scale, not chemistry.



Specs checked the right way

- A minimum flash point becomes a maximum on the flash index – the way round that is easy to get wrong.
- A pour point depressant is applied as a depression on a saturating curve, not blended as a component.
- 90% of its effect arrives at the recommended treat; doubling the dose buys about 9% more.
- Viscosity index per ASTM D2270; below 70 cSt at 100 °C it reads from the certificate instead of guessing.



Viscosity does not average

Blend two oils 50/50 and the result is **101.38 cSt**, not the **246** a straight average gives – **142% out**. It is why blending is done on the Refutas index and not on a spreadsheet.

A recipe from two stocks

To make 46 cSt from SN150 and bright stock takes 19.14% bright stock; averaging says 3.61%.

Faults and warnings

Faults block a batch; warnings – such as an overdosed depressant – do not.

Margin per kilogram

Every grade shows its recipe's cost and margin per kilogram.

A tank is never empty – so count the heel

The heel left in a tank is recorded with its viscosity and grade, updated after every release, and blended into the prediction before the batch starts.



Tank heels

- Heel kilograms, viscosity at 40 °C and last grade are real fields, settled after every release.
- "Which tank should this batch go in" checks every tank against the grade's window.
- A heel that was never measured is flagged – a whole vessel can stand idle for want of one test.



Rework and flush

- A reblend records which batch it is rework of and carries that batch's whole cost forward.
- A flush with the new grade is worked out and rounded up, so it never lands just outside the limit.
- A flush larger than the batch is refused – drain the tank instead.

What the seeded plant shows – in testing

Case	What happens	Figure
ISO 320 heel in T-02	1,480 kg pushes a 20 t ISO 46 batch out of 41.4-50.6	51.392 cSt
Flush instead of rework	New grade run through the tank before the batch	263 kg
Rework traced to a heel	Cost of reblending, all put down to a tank heel	78,789.27
Meter bias	Every batch above prediction, with 0.33% spread	+1.91%
Slop tanks	26,770 kg – swing between credit and disposal	99,644.50
Averaging, not the index	A 46 cSt recipe worked out by averaging actually gives	32.85 cSt

Grades are held by ISO viscosity grade with their window at 40 °C; the plant screen puts a price on rework, slops and what the additive is really costing.

Every screen in the module – and what is on it

Read off the running application – the panels, columns and figures actually there. Each grade page also draws its blend curve.

4

screens

36

functions

01 Blending plant

Batches, 12 months

First time right

Blended twice

Of that, the tank heel

Prediction vs measurement

In the slop tanks

Rework

Foreign product in tanks

What additive really costs

02 Grades

Grades and their windows

Code

Name

Route

Window at 40 °C, cSt

Recipe makes

Cost/kg

Margin/kg

Add grade

03 Batches

Plan a batch

Started

Grade

Tank

Size

Measured

State

Rework of

True cost

04 Tanks

Which tank for this batch

Capacity

Heel

% of capacity

Heel viscosity

Last grade

Dedicated to

Cleaned · drained

Check every tank

Not a separate program – a complete business system

The trade module sits on top of a complete ERP: everything it does lands directly in the accounts, the stores and the reports – no double entry.



Accounting

Editable chart of accounts, automatic entries from every transaction, VAT and financial statements.



Financial dimensions

Cost centres, departments, business lines and sites – with statements per factory.



Inventory

Warehouses and bins, batches and serials, moving average, FIFO or standard cost.



Purchasing & sales

RFQs, purchase orders and receipts, quotations, invoices and ageing.



Maintenance & assets

Equipment register, preventive maintenance, work orders and depreciation.



Access & language

Roles and rights per module, audit trail, full Arabic and English interface.

Standards and methods used

ASTM D2270

Viscosity index calculation

ISO VG

Viscosity grades, window at 40 °C

Refutas VBN

Viscosity blending index

Legal limits such as a minimum flash point and a maximum pour point are written once in the engine, the right way round, so every grade uses the same test.

Bring your recipes **and tanks**

Book a session and we'll set up the demo with your own base oils, grades and tanks – then plan a batch and see what the heel does to it.

Request a demo

Website

www.vluerp.com

Demo request

www.vluerp.com/#demo

Email

hello@vluerp.com

- 1 Plant screen:** first-time-right rate, rework, slops and what the additive is really costing.
- 2 Grade curve:** the index line against the straight average for one of your grades.
- 3 Plan a batch:** pick a tank, see the heel's effect before anything is added, and the flush that fixes it.
- 4 Rework:** a failed batch rebled, with its whole cost carried forward.

Switched on from Add-ons with a free seven-day trial, and it runs on the same general ledger.