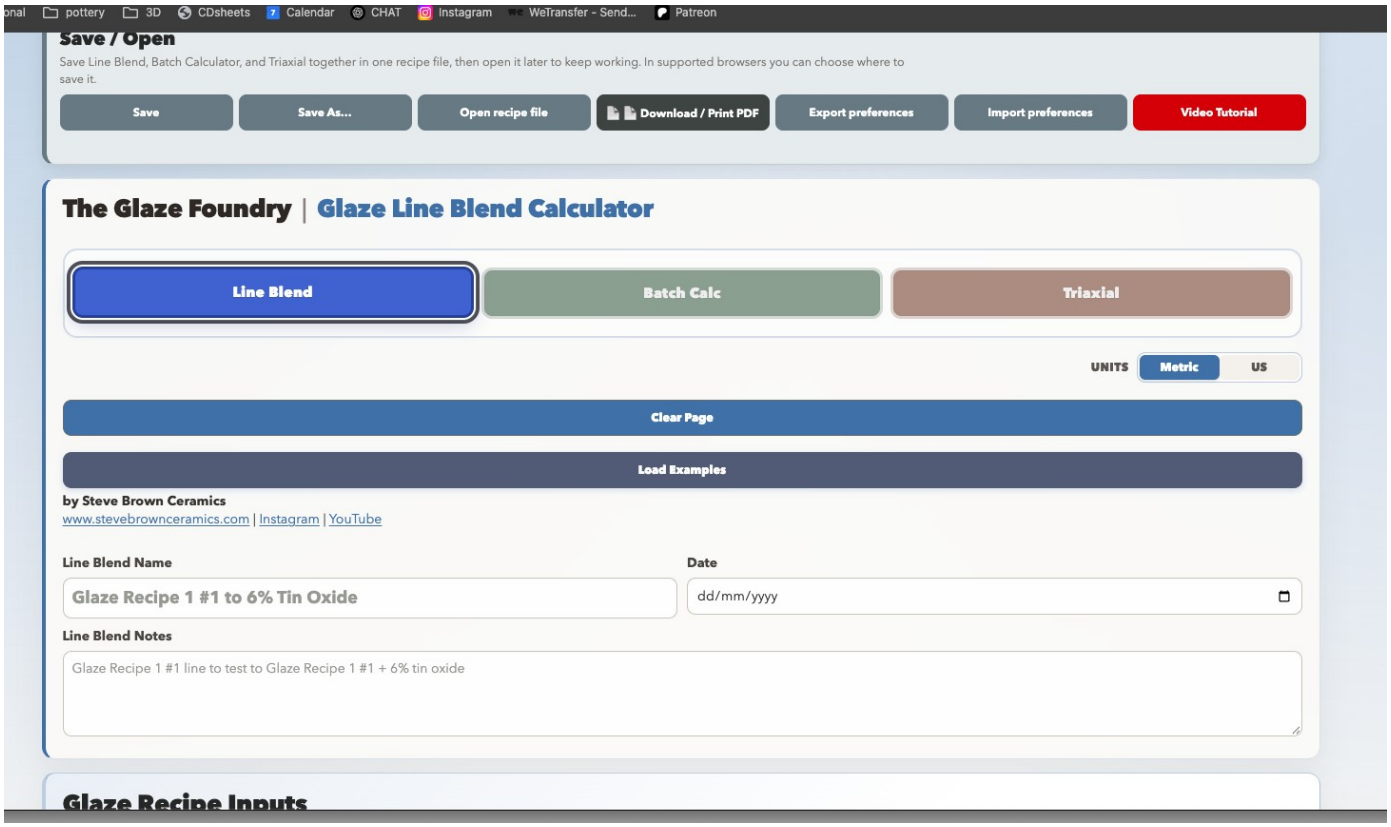
GLAZE FOUNDRY

User Guide

Batch Calculator • Line Blend • Triaxial Blend



Glaze Foundry beta software by Steve Brown Ceramics

About this guide

This guide starts with the basics, then works through the Batch Calculator, Line Blend and Triaxial Blend in that order. The software is still being developed, so small details may change as new versions are released.

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A useful way to learn

Use the Load Examples button. The worked examples fill the calculator with realistic values so you can see how the controls and results relate to one another before entering your own glaze.

1. Getting started and the basics

The controls shared by all three calculators.

Choose the calculator

Calculator	Best used for
Batch Calc	Scale a glaze recipe to a finished slurry volume or a required dry batch weight.
Line Blend	Create a sequence of tests between two glaze recipes or between a base recipe and a variation.
Triaxial	Blend three corner recipes across a triangular test layout.

The top controls

Control	What it does
Metric / US	Switches the display between metric and US units.
Clear Page	Clears the current calculator mode. Use this when you want to start again.
Load Examples	Loads a worked example for the calculator you are viewing.
Glaze name / Line Blend name / Triaxial name	A title for the test or recipe. This also appears in saved and printed records.
Date	Adds the date to your record.
Notes	Use this for clay body, firing, application, purpose of the test, or anything you want to remember.

Entering a glaze recipe

1. Enter a recipe name.
2. Enter the base materials and their percentages. The base recipe should normally total 100%.
3. Use Normalise to 100% if you want the software to scale the current base materials to a 100% total.
4. Set the recipe water percentage and any extra water adjustment.
5. Add standard additions such as bentonite separately from the base recipe.
6. Add secondary additions such as colourants or opacifiers separately so they remain easy to identify.

Base recipe versus additions

Keep the base glaze materials at 100%. Additions sit outside that 100% base and are calculated on top of it. This makes it easier to compare recipes and colourant tests.

Water, specific gravity and flow time

Water % is the starting water amount relative to the dry recipe. Extra water records later adjustments. Where specific-gravity or flow-cup fields are shown, enter the measured values from the glaze you are actually using.

2. Batch Calculator

Use Batch Calc when you know the recipe and want to know how much material and water to prepare.

A simple Batch Calculator workflow

7. Choose Batch Calc at the top of the software.
8. Give the batch a name and add any notes.
9. Enter the base glaze recipe. Add or remove material rows as needed.
10. Enter standard and secondary additions.
11. Set the water percentage and any extra water.
12. Choose the batch size and enter the target amount.
13. If using final-volume calculations, enter the measured target specific gravity when requested.
14. Read the Glaze Totals & Raw Materials section for the amounts to weigh and prepare.
15. Save the recipe file or download a PDF if you want a permanent studio record.

Volume mode and dry-weight mode

Mode	Use it when
Volume mode	Use when your target is a finished glaze volume. The calculator uses the target volume and specific gravity to estimate the required dry recipe and water.
Dry weight mode	Use when you already know the total dry base batch weight you want to make. Additions are calculated from that dry base weight.

Batch & Test Settings

Control	What it does
Batch size	Enter the amount of glaze you want to make. Linked ml/L fields keep the volume consistent.
Target specific gravity	Enter the measured SG of the slurry for more useful volume-based calculations.
Water %	The normal starting water percentage for the recipe.
Extra water	Records water added after the initial mix.
Glaze Totals & Raw Materials	Shows the overall glaze amount and the raw material quantities needed for the batch.

Studio tip

Treat specific gravity as a measured studio value, not a fixed property of the recipe. Measure the glaze you are actually using and update the value if you adjust water.

Recipe Sheet

The Recipe Sheet summarises the current recipe and calculated amounts. It is useful as a quick check before weighing materials and is also used when creating PDFs.

3. Line Blend

Use Line Blend to move in controlled steps from one recipe to another.

What the Line Blend does

A line blend makes a sequence of test cups between Recipe 1 and Recipe 2. Depending on the test, Recipe 2 can be a completely different glaze or a linked variation of Recipe 1.

Set up the two recipes

16. Enter Recipe 1, including water and additions.
17. Enter Recipe 2. If Recipe 2 is linked to Recipe 1, the base recipe stays matched while you create the variation you want to test.
18. Use separate standard and secondary additions for each recipe where needed.
19. Enter measured specific gravity or flow values for the premixed slurries if you are recording them.

Set the test

Control	What it does
Number of tests	How many cups will be generated across the line.
Test cup amount	The finished glaze amount wanted in each test cup.
Extra glaze for loss	Adds a spare percentage for syringe loss, sieving, dipping and mixing leftovers.
Glaze Totals & Raw Materials	Shows how much of each parent glaze and each raw material you need to prepare.

Reading the Line Blend table

Control	What it does
Test Cup	The cup number in the sequence.
Actual % Additions	The addition level present in that particular blend.
Recipe 1 / Recipe 2 ml	How much premixed slurry from each parent recipe goes into the cup.
Blend Ratio	The relationship between the two parent glazes.
Water % / SG	Recorded or calculated slurry information where available.
Make Batch from this Cup	Copies the selected blend into the Batch Calculator so you can scale a promising test into a larger batch.

From test to usable batch

When one cup gives the result you want, use Make Batch from this Cup. This is the quickest way to carry the tested ratio into the Batch Calculator without retyping the blend.

Marking cups as mixed

You can tap or click a row to mark a blend as mixed. This is useful during a studio session when you are working through several cups and want to keep track of progress.

4. Triaxial Blend

Use Triaxial when you want to explore the space between three different corner recipes.

The three corner recipes

Triaxial uses Recipe 1, Recipe 2 and Recipe 3 as the three corners of a triangle. Each test inside the triangle is a different proportion of those three corner glazes.

20. Enter Recipe 1 and its additions.
21. Enter Recipe 2 and Recipe 3. They can be linked to Recipe 1 while you build variations, or unlinked for independent recipes.
22. Set water, extra water, and any measured specific-gravity / flow information for each corner slurry.
23. Normalise each base recipe to 100% if required.

Choose the size of the triaxial

Triangle size	Number of tests
3 rows	6 tests
4 rows	10 tests
5 rows	15 tests
6 rows	21 tests

Batch & Test Settings

Control	What it does
Finished glaze per test cup	The slurry volume you want in each individual test.
Spare / wastage allowance	Adds extra glaze for syringe loss, dipping, sieving and leftovers.
Number display	Choose studio-friendly rounding or precise decimals.
Glaze Totals & Raw Materials	Shows how much of each corner glaze and the underlying raw materials need to be prepared.

Using the Triaxial Test Layout

The triangle shows where each test sits between the three corner recipes. The accompanying tables give two practical views:

- Materials in each test cup: useful when you want to weigh each test from recipe materials.
- Blend amounts for each test cup: useful when you have already premixed the three corner slurries and are blending them by volume.

Make Batch from a Triaxial test

If a triaxial test is worth pursuing, use Make Batch from this Test. The software transfers that test composition into Batch Calc so it can be scaled up.

5. Saving recipes, favourites and preferences

Save / Open

Control	What it does
Save	Saves Line Blend, Batch Calc and Triaxial together in one recipe file.
Save As...	Lets supported browsers choose a new file name or location.
Open recipe file	Reopens a previously saved .glaze / recipe file and restores the work.
Export preferences	Exports software preferences and supporting saved data so they can be backed up.
Import preferences	Restores previously exported preferences.

Favourite Recipes

Each recipe area includes Favourite Recipes. This is designed for recipes you use often or want to return to quickly without opening a full project file.

24. Type a Favourite name.
25. Choose an existing folder or create a new folder.
26. Select Save Favourite to This Folder.
27. To reuse it later, choose the folder and saved favourite, then select Load Favourite.

ALL RECIPES shows every favourite. Custom folders are simply a way to organise them. You can rename or delete folders and delete individual favourites.

Recipe files versus favourites

Use	Purpose
Recipe file	Best for preserving a complete working project, including calculator state and test records.
Favourite recipe	Best for quickly recalling a single recipe inside the software.

6. Advanced chemistry, UMF and fired results

Advanced Chemistry & UMF

The Advanced area can display recipe chemistry and UMF information when the materials in the recipe are recognised by the software. It is intended as an analysis aid for comparing glaze chemistry, not as a substitute for firing tests.

- Use it to compare silica, alumina and flux relationships between recipes.
- Use the graph alongside the actual fired results rather than judging a glaze from chemistry alone.
- Unrecognised or custom materials may reduce the chemistry coverage until suitable chemistry data is available.

Fired Results

After firing, use Fired Results to keep the test evidence with the calculation. You can add photos and firing notes, and the information is saved with the recipe file.

Control	What it does
Photo	Attach an image of the fired test where supported.
Clay body	Record the clay used for the test.
Bisque / glaze cone	Record the firing temperatures.
Atmosphere	For example oxidation or reduction.
Application	Record dip, brush, spray, thickness or other application details.
Firing / result notes	Keep observations with the calculated recipe instead of relying on memory.

Keep the calculation and the fired result together

A calculation only becomes useful glaze-development information when it can be connected to the clay, application and firing that produced the surface.

7. PDFs, workflow tips and troubleshooting

Download / Print PDF

Glaze Foundry provides two PDF-style output choices:

PDF option	Best for
Simple Mixing Sheet	A compact recipe and mixing sheet for working in the studio.
Full Record	A fuller record including recipe details, test settings, chemistry / UMF information where available, notes and fired-result records.

A reliable studio workflow

28. Give the test a clear name before you begin.
29. Enter and check the recipe base before additions.
30. Use measured water, specific gravity and flow information when you have it.
31. Load an example if you are unsure what a control does.
32. Save a recipe file before a long testing session.
33. Print or download a mixing sheet before weighing materials.
34. After firing, add photos and notes while the test information is still fresh.
35. Save the updated recipe file again so the fired result stays with the calculation.

Troubleshooting

Control	What it does
The recipe total is wrong	Check the base materials. Use Normalise to 100% if appropriate, then keep additions separate.
The amounts look unexpectedly large	Check batch size, number of tests, test-cup size and spare/loss percentage.
A Line Blend or Triaxial test looks wrong	Check that the parent recipes and water/SG values are the ones you intended before mixing.
Chemistry is incomplete	A material may not have chemistry data available or may use a name the software does not recognise.
I want to continue later	Use Save or Save As and reopen the recipe file next time.
I want to learn by example	Select Load Examples in the calculator mode you want to explore.

Important

Glaze Foundry is a calculation and record-keeping tool. Always check your own material data, weigh carefully, use appropriate studio safety procedures, and confirm results through actual firing tests.

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