

# *HyperGlaze* X

---

## Quick Start Guide

©2006 Richard Burkett

Print this file in landscape mode

# Guide to the HyperGlaze X glaze windows on screen

**Glaze Index:**  
automatically updated  
index of your glaze recipes  
- click to go to the one you want

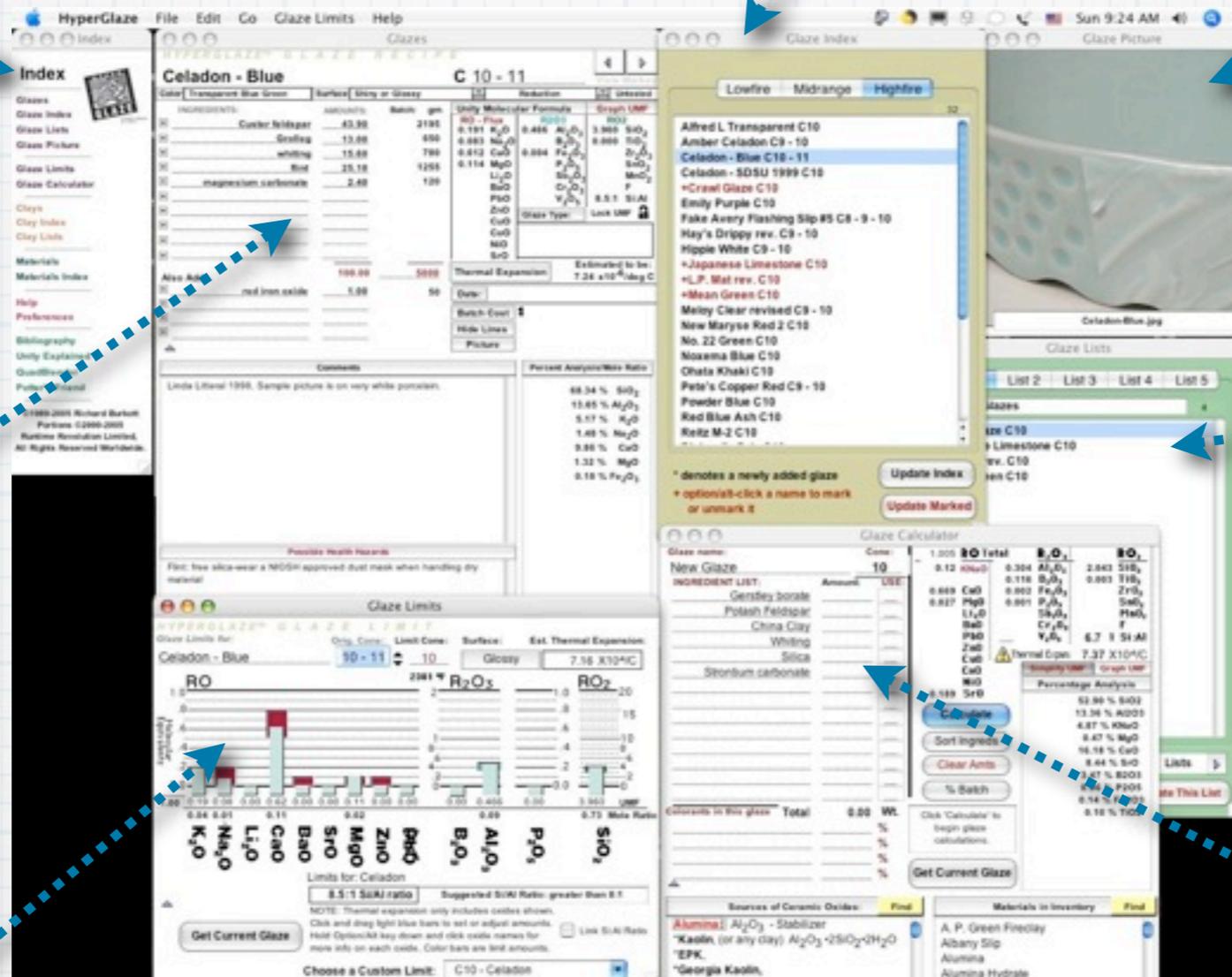
**Index:**  
Use this palette  
of choices to  
easily open or  
close any  
HyperGlaze  
window with  
a click

**Glaze Picture:**  
keep a picture  
of your glazes here

**Glaze Lists:**  
keep lists of your  
favorite glazes  
here to easily view  
or print them

**Glazes:**  
keep your recipes  
here along with  
notes about the  
glaze

**Glaze Limits:**  
use this window to modify your glaze  
or compare the unity molecular formula (UMF) of  
your glaze to typical UMFs of a specific type of glaze



**Glaze Calculator:**  
use this to convert  
molecular unity  
formulas (UMF) back  
to a glaze recipe

# The Index window - quick links to HyperGlaze features

**Glazes: store glaze recipes & notes here**

**Glaze Index: click a glaze name to see recipe**

**Glazes Lists: keep lists of favorite glazes**

**Glaze Picture: save a picture of each glaze**

**Glaze Limits: adjust & change unity formula**

**Glaze Calculator: convert unity formula to recipe**

**Clays: store clay recipes here**

**Clay Index: click a clay name to see recipe**

**Clay Lists: works just like glaze lists**

**Materials: store ingredient analyses here**

**Materials Index: click an ingredient name**

**Help & Preferences: click for help & settings**

**Utilities: four handy utilities for ceramists**

**Copyright info: click to see licensing restrictions**



**Note: almost all of these choices are also available in the Go menu**

# The Glaze Index window

Currently selected cone range

Number of glazes in this cone range

Click glaze firing range to see glazes for those cones

Click a glaze name to see the recipe for it in the Glazes window

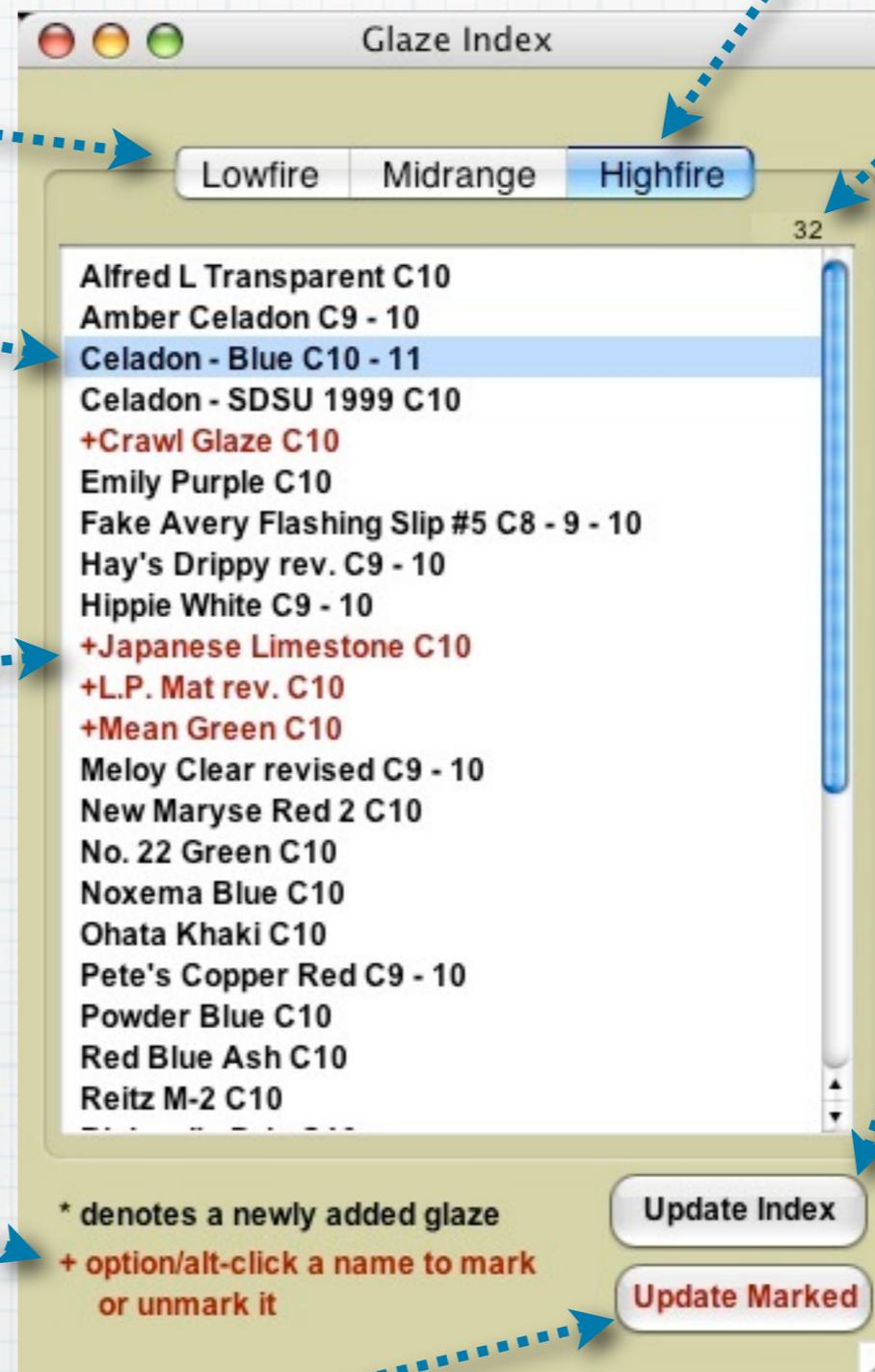
Red glaze names with a + before the name show marked glazes-option click to unmark. Marked recipes can be viewed (using View Marked button on Glaze cards), printed or exported as a group, or added to the Glaze Lists for easy use later.

Click Update Index to sort glazes alphabetically by cone range

Note: Newly added glazes appear initially at the top of the list with an asterisk before the glaze name.

Click Update Marked to see marked glazes in the Glaze Index after Complex Searches

Note: Clay Index window is nearly identical



# The Glazes window

Glaze Name

Color popup menu

Base glaze recipe

+ buttons:  
click to add ingredients  
without typing

Also Add:  
enter colorants or  
other additives

Comments:  
type in your notes about  
glaze application, mixing, etc.

Health Hazards:  
shown when glaze  
is calculated

To Make a New Glaze Recipe Card:  
Choose "New Card" from Edit menu

The screenshot shows the 'Glazes' window for a recipe named 'Japanese Limestone'. The interface includes several key sections:

- Glaze Name:** 'Japanese Limestone'
- Color:** 'clear, cloudy if thick' (with a popup menu)
- Surface:** 'shiny' (with a popup menu)
- Reduction:** 'C 10' (with a popup menu)
- Ingredients Table:**

INGREDIENTS:	AMOUNTS:	Batch:	Lb
Flint	35.60	6.41	6.41
Potash Feldspar	34.70	6.25	6.25
Whiting	15.80	2.84	2.84
EPK	11.90	2.14	2.14
Talc	2.00	0.36	0.36
<b>Totals:</b>	<b>100</b>	<b>18.00</b>	<b>18.00</b>
- Unity Molecular Formula:**

RO - Flux	R2O3	RO2
0.166 K <sub>2</sub> O	0.443 Al <sub>2</sub> O <sub>3</sub>	4.720 SiO <sub>2</sub>
0.073 Na <sub>2</sub> O	B <sub>2</sub> O <sub>3</sub>	0.002 TiO <sub>2</sub>
0.698 CaO	0.002 Fe <sub>2</sub> O <sub>3</sub>	Zr <sub>2</sub> O <sub>3</sub>
0.064 MgO	0.001 P <sub>2</sub> O <sub>5</sub>	SnO <sub>2</sub>
Li <sub>2</sub> O	Sb <sub>2</sub> O <sub>3</sub>	0.000 MnO <sub>2</sub>
BaO	Cr <sub>2</sub> O <sub>3</sub>	F
PbO	V <sub>2</sub> O <sub>5</sub>	10.7:1 Si:Al
- Graph UMF:** 'show UMF as a bar graph' button
- Glaze Type:** 'Ca MidRoad' (with a 'Lock UMF' button)
- Thermal Expansion:** 'Thermal expansion button', 'Estimated to be: 6.72 x10<sup>-6</sup>/deg C'
- Date:** '3/5/06' (with 'click to insert current date' button)
- Batch Cost:** '\$ 0.89' (with 'click for batch cost' button)
- Buttons:** 'Hide Lines', 'Picture' (with 'click to show/hide glaze picture - option click to change' button)
- Comments:** 'Use a medium to thick application for nice crackles in fired glaze.'
- Percent Analysis/Mole Ratio:**

72.47 %	SiO <sub>2</sub>
11.55 %	Al <sub>2</sub> O <sub>3</sub>
4.00 %	K <sub>2</sub> O
1.16 %	Na <sub>2</sub> O
10.01 %	CaO
0.66 %	MgO
0.08 %	Fe <sub>2</sub> O <sub>3</sub>
0.04 %	P <sub>2</sub> O <sub>5</sub>
0.04 %	TiO <sub>2</sub>
- Health Hazards:** 'Possible Health Hazards' section listing silica-related risks for Flint and Talc.

Note: Clays window is nearly identical

# The Compare Glazes window

Choose Compare Glazes from the Glazes menu while viewing glaze recipes in the Glazes stack. You'll see a window like this pop up that you can use to compare recipes while browsing.

Then click Get Current Glaze to show the currently selected glaze recipe here in the Compare Glaze window

**Compare Glazes**

**Alfred L Transparent**

Ingredients:

F-4 Feldspar	21.74
Custer Feldspar	27.56
Whiting	24.65
EPK Kaolin	4.31
Silica	21.74

Cone: 10

Also add:

Thermal Expansion:  $8.04 \times 10^{-6}$  deg. C

Unity Molecular Formula (UMF)

0.128 K <sub>2</sub> O	0.316 Al <sub>2</sub> O <sub>3</sub>	2.841 SiO <sub>2</sub>
0.103 Na <sub>2</sub> O	B <sub>2</sub> O <sub>3</sub>	0.001 TiO <sub>2</sub>
0.768 CaO	0.001 Fe <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>
0.001 MgO	0.000 P <sub>2</sub> O <sub>3</sub>	SnO <sub>2</sub>
Li <sub>2</sub> O	Sb <sub>2</sub> O <sub>3</sub>	MnO <sub>2</sub>
BaO	Cr <sub>2</sub> O <sub>3</sub>	F
PbO	V <sub>2</sub> O <sub>5</sub>	9.0:1 Si:Al Ratio
ZnO		
CuO		
CoO		
NiO		
SrO		

Percent Analysis:

Percentage Analysis by weight:

64.48 %	SiO <sub>2</sub>
12.17 %	Al <sub>2</sub> O <sub>3</sub>
4.56 %	K <sub>2</sub> O
2.41 %	Na <sub>2</sub> O
16.28 %	CaO
0.02 %	MgO
0.06 %	Fe <sub>2</sub> O <sub>3</sub>
0.03 %	TiO <sub>2</sub>

Get Current Glaze

Close

# The Complex Search window for Glazes

Choose where to search

Searches for glazes or clays of a specific cone number

popup menus of standard choices

earliest date  
most recent date

Find and Mark Cards is the most common choice for a first search.

Choose Find in the Found Set (Marked Cards) to refine a previous search by looking only in the currently marked cards during the search.

these items are not required for searches, but if you enter a search term in this side, recipes will not be marked if they include that term

click to start searching

Complex searches will **mark** cards which are found to meet the criteria you have specified.

Complex Search

Glazes Clays Materials

Search for recipes that contain these items:

Name\*:

Thermal Expansion <  x10<sup>-6</sup>/deg C

Cone\* 10

Color\*

Surface\*

Firing\*

Testing\*

Ingredient\*:

Comment\*:

Date: >  <   
(MM/DD/YY)

NOTE: you must include at least one item marked in red with an asterisk\*:

but not these items:

Cone

Color

Surface

Firing

Testing

Ingredient:

Comment:

Clear Search Fields

Find and Mark Cards

Find in the Found Set (Marked Cards)

Calculate Custom Limits from Found Set

Search

Close

Note: Simple searches often work best!

# The Glaze Limits window

click up or down arrow to change the cone of your glaze one cone higher or lower

Orig. Cone: the cone number of the glaze entered (as shown on the recipe card)

limit amounts oxide amounts in your glaze - click and drag to change

option [Alt] click any chemical symbol to see how that oxide affects glazes and colorants

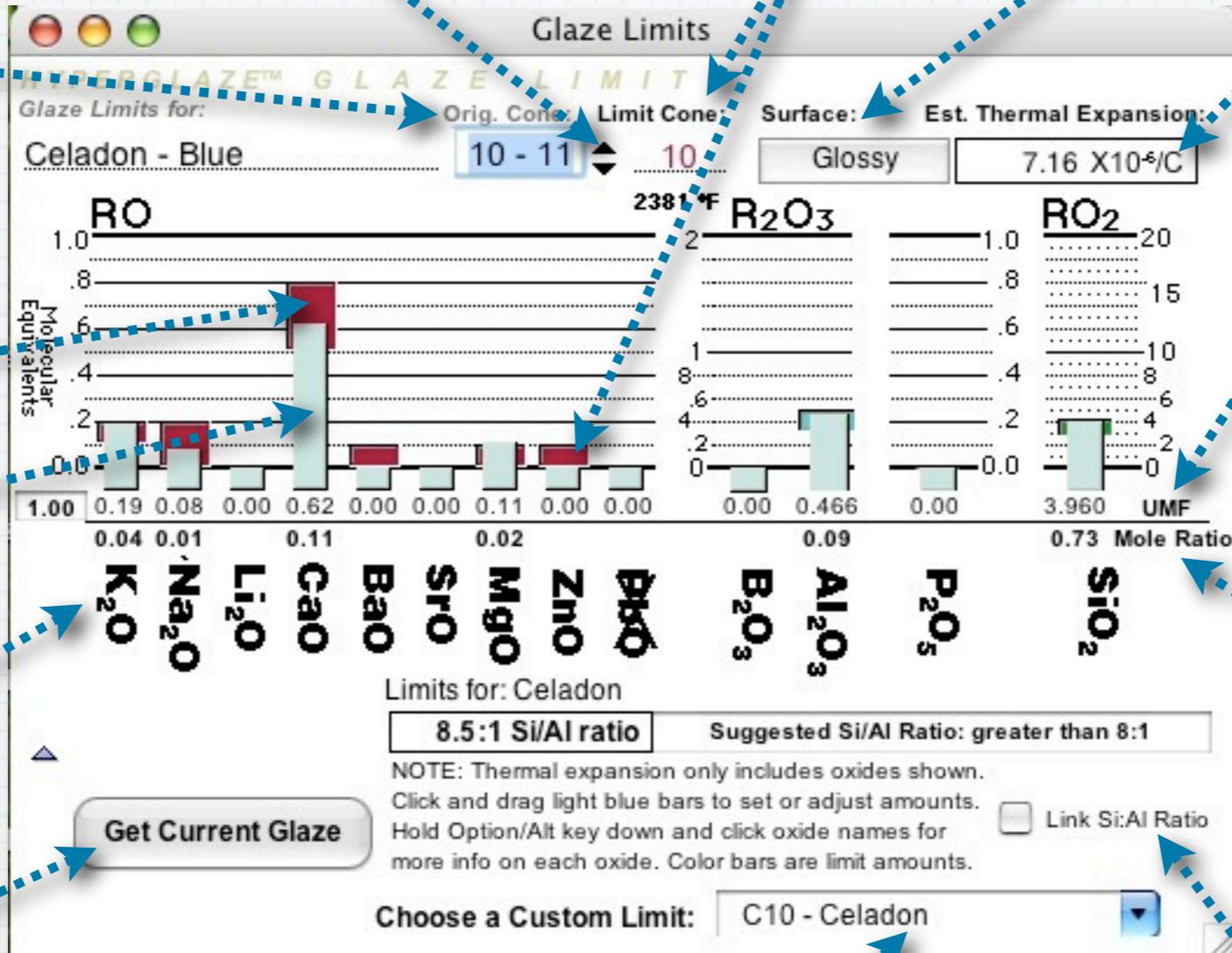
Limit Cone: sets the cone number for the colored bars behind the oxide amount bar graph with the approximate temperature below

Surface: click to change Changes the limit values to glaze type: matte or glossy

Est. Thermal Expan: likely thermal expansion of the base glaze

UMF: unity molecular formula for this glaze

Mole Ratio OR Wt. %: click to switch between these two views of the analysis for this glaze



Get Current Glaze: grabs the unity molecular formula for the glaze currently shown in the Glazes window and inserts it into Glaze Limits

popup menu of more specific limit formulas

check box to link silica and alumina amounts so that the Si:Al ratio stays constant when you adjust either the alumina or silica amount

# The Glaze Calculator window

The screenshot shows the 'Glaze Calculator' window. At the top, there's a 'Glaze name:' field with 'New Glaze' and a 'Cone:' field with '10'. Below is an 'INGREDIENT LIST' with items like Gerstley borate, Potash Feldspar, China Clay, Whiting, Silica, and Strontium carbonate, each with an 'Amount:' and 'USE:' column. To the right, there's a table of chemical oxides with their respective amounts. Below the table are buttons for 'Calculate', 'Sort Ingreds', 'Clear Amts', and '% Batch'. At the bottom, there are two scrollable lists: 'Sources of Ceramic Oxides' and 'Materials in Inventory'. A 'Percentage Analysis' window is also visible, showing the composition of the calculated glaze.

enter your choice of ingredients here

click to calculate a recipe from the UMF

click to sort ingredient list for best calculation

click to clear your previous calculation and recalculate

colorants in the original recipe

click a name to add it to the ingredient list

enter a number between 0 and 1 to limit amount of an ingredient (for example, 0.5 would add only half the possible amount)

click to combine K & Na amounts

click any chemical symbol to see what ingredients supply it in the Sources of Ceramic Oxides

click to have calculation ignore trace oxide amounts

click after calculating to convert the recipe to a percentage batch

click to grab current recipe in the Glazes window and enter the ingredients and UMF here

click a name to add it to the ingredient list

# The Materials Index window

Materials is full list which also includes clay analyses. Clays is a sublist of just clay analyses.

click to see an ingredient and its analysis in the Materials window

Red material names with a + before the name show marked materials - option (ALT) click to unmark.

**Marked analyses** can be viewed (using View Marked button on Material cards), printed or exported as a group.

The screenshot shows a window titled "Materials Index" with two tabs: "Materials" (selected) and "Clays". A counter in the top right corner shows "773". The main list contains the following items:

- #6 Tile Clay
- 200 mesh Potash spar
- A-3 Feldspar
- A. P. Green Fireclay
- A.P. Green Fireclay
- Ajax Kaolin
- Ajax SC Clay
- Akako
- Al<sub>2</sub>O<sub>3</sub>
- Albany (true)
- Albany
- +Albany Slip** (highlighted)
- Albany Slip Clay
- Alberta Slip
- Albion Form 100 Kaolin
- Albion Sperse 100 Kaolin
- Alkatrol Pyrophyllite 1989
- Alumina
- Alumina Hydrate
- Aluminum Oxide
- Amakusa

At the bottom, there are two buttons: "Update Index" and "Update Marked". A legend below the list explains the symbols:

- \* denotes a newly added material
- ^ shift-click a name to add it to a glaze or clay recipe
- + option/alt-click a name to mark or unmark it

number of materials currently in the database

click to alphabetize the Materials Index after adding new materials

click to update marked ingredients so you can see which ones are marked

# The Materials window

## To Make a New Material Card:

Choose "New Card" from the Edit menu

enter the ingredient name

enter oxide amounts as either percent by weight (then Convert to Unity) or enter directly as unity molecular format

enter comments, suppliers, and other information

enter health hazard warnings here and check the Possible Health Hazard box to have warnings included with glaze recipes

click to calculate percentage analysis

arrow buttons:  
go to next or previous material analysis

click to set material category/type

click chemical symbol to search for materials which contain that oxide

click to calculate molecular weight

melting point or PCE

click for cost calculator

check box for ingreds in inventory

arrow buttons go to all ingredients

arrows go to ingreds in current glaze

arrows go to ingreds in current clay

arrow buttons go to marked ingredients

arrow buttons go to ingredients which are in inventory

click to add this material to the current glaze or clay

# The Complex Search window for Materials

Choose where to search

You can set a minimum mole amount of the oxide(s) specified

Complex Search

Glazes Clays **Materials**

Enter search text and/or select the oxides you would like to find in a material:

Material name:

<input type="checkbox"/> K <sub>2</sub> O	<input type="checkbox"/> Al <sub>2</sub> O <sub>3</sub>	<input type="checkbox"/> SiO <sub>2</sub>	Material type: <input type="text"/>
<input type="checkbox"/> Na <sub>2</sub> O	<input type="checkbox"/> B <sub>2</sub> O <sub>3</sub>	<input type="checkbox"/> TiO <sub>2</sub>	Comments: <input type="text"/>
<input type="checkbox"/> Li <sub>2</sub> O	<input type="checkbox"/> Fe <sub>2</sub> O <sub>3</sub>	<input type="checkbox"/> ZrO <sub>2</sub>	
<input type="checkbox"/> CaO	<input type="checkbox"/> P <sub>2</sub> O <sub>5</sub>	<input type="checkbox"/> SnO <sub>2</sub>	
<input type="checkbox"/> MgO	<input type="checkbox"/> Sb <sub>2</sub> O <sub>3</sub>	<input type="checkbox"/> MnO <sub>2</sub>	
<input type="checkbox"/> BaO	<input type="checkbox"/> Cr <sub>2</sub> O <sub>3</sub>		
<input type="checkbox"/> SrO	<input type="checkbox"/> V <sub>2</sub> O <sub>5</sub>		
<input type="checkbox"/> ZnO			
<input type="checkbox"/> PbO			
<input type="checkbox"/> FeO			
<input type="checkbox"/> CuO			
<input type="checkbox"/> CoO			
<input type="checkbox"/> NiO			

0.100 minimum mole amount of oxide  
(Oxides with less than this amount will not be found.)

**Searching Hint:**  
If your search doesn't find any Materials cards which have all of the oxides specified, then try searching for just one or two oxides.

Clear Search Fields

Search

Find and Mark Cards  
 Find in the Found Set (Marked Cards)

Close

Enter a name or even a partial name, for example: **spar** to find and mark all feldspars

Choose an oxide or oxides you'd like to find in an ingredient

Find and Mark Cards is the most common choice for a first search.

Choose Find in the Found Set (Marked Cards) to refine a previous search by looking only in the currently marked cards during the search.

click to start searching

Complex searches will **mark** cards which are found to meet the criteria you have specified.

**Note: Simple searches often work best!**

# The QuadBlender

choose Export Blend Chart in File menu to save a text document of recipes for all blends

choose Blend Recipe Grid from the QuadBlender menu to see a printable page of blend recipes for volume blending by parts

click a number to see the blend for this tile

click to send the recipe you've chosen to the Glazes recipe database

Enter the four recipes of your choice in the recipe A, B, C & D windows, make additions or changes, then use QuadBlender choices shown

click to show recipe windows for the four corner recipes A, B, C & D

click to grab current recipe visible in Glazes and enter it as blend glaze

The screenshot displays the HyperGlaze QuadBlender software interface. The main window, titled 'QuadBlender', features a central grid for 'Glaze Quad Blend 22'. The grid lists ingredients and their amounts: Nepheline syenite (89.2), Strontium carbonate (23.2), Lithium carbonate (4.2), Flint (6.3), EPK (5.4), bone ash (6.4), and titanium dioxide (5.2). The total amount is 100. Below the grid is a 6x6 grid of tiles labeled A through D, with numbers 1 through 36. A 'Send Blend to Glazes' button is located below the grid. To the right, four recipe windows (A, B, C, D) are open, each showing a recipe for 'Stephans Strontium C6' with ingredients and amounts. The interface includes a menu bar (File, Edit, Go, QuadBlender, Help) and a sidebar with an 'Index' of various tools and categories.

Amount	Ingredient
89.2	Nepheline syenite
23.2	Strontium carbonate
4.2	Lithium carbonate
6.3	Flint
5.4	EPK
6.4	bone ash
5.2	titanium dioxide
100	Tile 22

Amount	Ingredient
57.30	Nepheline syenite
27.08	Strontium carbonate
2.08	Lithium carbonate
7.29	Flint
6.25	EPK

Amount	Ingredient
57.29	Nepheline syenite
27.08	Strontium carbonate
2.08	Lithium carbonate
7.29	Flint
6.25	EPK
10	lithium carbonate

Amount	Ingredient
57.29	Nepheline syenite
27.08	Strontium carbonate
2.08	Lithium carbonate
7.29	Flint
6.25	EPK
25	bone ash

Amount	Ingredient
57.29	Nepheline syenite
27.08	Strontium carbonate
2.08	Lithium carbonate
7.29	Flint
6.25	EPK
30	titanium dioxide