15 low-fire glaze recipes from the pros

Second Edition

recipe cards for low-fire pottery glazes
Looking for a few great low-fire glaze recipes? Here they are—15 great recipes from 11 professional ceramic artists and available on convenient recipe cards you can print out and take into your studio. No matter what your interest—color, texture, surface effect, majolica or slips—you’re sure to discover something you can use on your work from these successful glazes the pros are using.

If you’ve been looking for a new low-fire glaze recipe to use as a base glaze for functional work, or maybe you’re in need of some highly unusual surface treatments, then you’ll find the assortment here covers glossy to matt and crusty to smooth. And by the time you add in all the possible variations through your experiments, your low-fire glaze palette should be teeming with possibilities.

And remember, results vary with clay bodies, materials, and firing schedules, so be sure to test all your glazes in small batches using your own materials and equipment. Now get out there and mix up some new low-fire pottery glazes!

## 15 Low-Fire Glaze Recipes from the Pros

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<td>Gail Kendall</td>
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<td>Lana Wilson</td>
<td>Lana’s Purple Aqua Glaze</td>
<td>06</td>
</tr>
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**Linda Arbuckle’s Majolica Glaze**

Cone 04

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Ferro Frit 3124</td>
<td>66%</td>
</tr>
<tr>
<td>Kona F-4 Feldspar</td>
<td>17%</td>
</tr>
<tr>
<td>Nepheline Syenite</td>
<td>6%</td>
</tr>
<tr>
<td>EPK Kaolin</td>
<td>11%</td>
</tr>
<tr>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Add:

- Tin Oxide: 5%
- Zircopax: 10%
- Bentonite: 2%

This recipe is for the stiff base glaze. For color, apply stains over.

(Note: First appeared in 1995.)

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**Matt Glaze**

Cone 06

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Gerstley Borate</td>
<td>38%</td>
</tr>
<tr>
<td>Lithium Carbonate</td>
<td>10%</td>
</tr>
<tr>
<td>Nepheline Syenite</td>
<td>5%</td>
</tr>
<tr>
<td>Grolleg Kaolin</td>
<td>5%</td>
</tr>
<tr>
<td>Silica</td>
<td>42%</td>
</tr>
<tr>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Add 15% glaze stain for bright pinks and reds; for other bright colors, add 10% glaze stain. Greens require stains with low amounts of chrome, or bubbling may occur. To get opaque pastels, add 0.5%–2% glaze stain and 8–9.5% Zircopax to total 10%.

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**Majolica Overglaze**

Cone 06–04

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferro Frit 3124</td>
<td>50%</td>
</tr>
<tr>
<td>Wollastonite</td>
<td>10%</td>
</tr>
<tr>
<td>Glaze Stain</td>
<td>40%</td>
</tr>
<tr>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Can be used over a similarly colored Matt Glaze (left) to intensify the color while retaining the matt surface.

From Sandra Luehrsen,

Love Child (Mark Burleson)
Cone 04-02
Lithium Carbonate .......... 25.9%
Barium Carbonate .......... 16.1
Potash Feldspar* .......... 40.2
Whiting ................. 4.5
EPK Kaolin ............. 8.9
Silica ...................... 4.5
100.0%
For Blue, add:
Cobalt Carbonate .......... 1.0%
Copper Carbonate .......... 1.0%
Rutile .................... 2.0%

*The original text listed “Potash F4,” I’ve tried both potash and soda feldspars with similar results. Figure 1 is shown with potash feldspar.

Deanna’s Revised Love Child
Cone 04-02
Lithium Carbonate .......... 23%
Barium Carbonate .......... 18
Potash Feldspar ............ 38
Whiting ................ 6
EPK Kaolin ............. 9
Silica ...................... 6
100%
Add: Bentonite ............. 1%
For Blue, add:
Copper Carbonate .......... 2%
Rutile .................... 1–2%
For Lime Green, add:
Chartreuse Stain .......... 6%
Rutile .................... 1–2%

Love Child Strontium Revision
Cone 04-02
Lithium Carbonate .......... 27.0%
Strontium Carbonate .......... 12.5
Potash ................. 41.9
Whiting ................ 4.6
EPK Kaolin ............. 9.3
Silica ...................... 4.7
100.0%
For Turquoise, add:
Copper Carbonate .......... 1–2%
Rutile .................... 1–2%

Love Child Spodumene/
Strontium Revision
Cone 04-02
Spodumene .............. 26.2%
Strontium Carbonate .......... 12.6
Potash ................. 42.3
Whiting ................. 4.7
EPK Kaolin ............. 9.4
Silica ...................... 4.8
100.0%
For Dry Turquoise, add:
Copper Carbonate .......... 2.0%

This glaze is very dry similar to a slip or an engobe.
Kari's Best Transparent
Cone 04–02
Gerstley Borate.................. 11 %
Talc.......................... 30
Pemco Frit 626.................. 19
Ferro Frit 3124................. 11
Spodumene........................ 14
EPK Kaolin..................... 15
100 %
Add: Wollastonite ............. 5 %
Veegum T.................. 1 %
CMC Gum.................. 0.4 %
Celadon
Copper Carbonate ........... 0.3 %

Blue
Cobalt Carbonate .......... 1.5 %
Copper Carbonate ........ 2.0 %

Grape
Manganese Dioxide ......... 7.0 %
Copper Carbonate .......... 0.5 %

Emerald Green
Copper Carbonate .......... 6.0 %

From Kari Radasch,
Glazes and Glazing: Finishing Techniques.

Hirsh Satin Matt Base
Cone 04–02
Gerstley Borate.................. 32 %
Lithium Carbonate ............ 9
Whiting........................ 17
Nepheline Syenite............. 4
EPK Kaolin.......................... 4
Silica.......................... 35
100 %
Add: Bentonite .............. 2 %

Green:
Chrome Oxide ............... 1 %

Yellow:
Yellow Stain ............... 8 %

Light Blue:
Copper Carbonate........ 1.5 %

From Joe Pintz, Ceramics Monthly,
September 2009.
HK Dry Lithium Base 1
Cone 010–04

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Lithium Carbonate</td>
<td>28 %</td>
</tr>
<tr>
<td>Bentonite</td>
<td>3</td>
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<tr>
<td>Georgia Kaolin</td>
<td>15</td>
</tr>
<tr>
<td>Silica</td>
<td>54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Salmon Pink:
Manganese Dioxide .............. 5 %

Burnt Salmon Red:
Black Copper Oxide .............. 3.5 %
Manganese Dioxide .............. 3 %

Granite Gray:
Nickel Oxide .................... 5 %

Oyster Shell White:
Black Iron Oxide ................ 3 %
Vanadium Stain .................. 1 %

Limestone Green:
Black Copper Oxide .............. 3 %
Rutile ......................... 4.5 %

Woody Brown:
Black Copper Oxide .............. 4 %
Black Iron Oxide ................ 5 %
Chrome Oxide .................... 0.5 %
Manganese Dioxide .............. 3 %
Red Iron Oxide ................... 4 %

Bronze:
Manganese Dioxide .............. 2 %
Copper Oxide .................... 3 %
Chrome Oxide .................... 4 %

These dry lithium glazes are applied to earthenware and fired up to cone 04. To retain application texture and dry surface quality, fire only to cone 010. Multiple firings may be necessary for color intensity and depth. Shivering may occur if the glaze firing is prolonged. When firing a glaze kiln with bisque ware, the recommended firing schedule is to turn up the kiln (electric) one third every two hours, so that the kiln is on high in four hours.

MNO Lichen
Cone 06

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borax</td>
<td>25 %</td>
</tr>
<tr>
<td>Lithium Carbonate</td>
<td>9</td>
</tr>
<tr>
<td>Magnesium Carbonate</td>
<td>39</td>
</tr>
<tr>
<td>Ferro Frit 3134</td>
<td>3</td>
</tr>
<tr>
<td>Nepheline Syenite</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Add: Copper Carbonate ....... 5 %
Bentonite ................. 3 %

From Darren Emenau,
Surface Decoration: Finishing Techniques.

This recipe was inspired by low-fire recipes by Lana Wilson. It can be brushed on in various thicknesses. Some of the glaze may flake off during firings. After firing, scrape or sand blast the surface to remove any loose glaze. You can rub beeswax into some areas and then torch it to remove most of the wax. Forms often look best if fired multiple times. A nepheline syenite wash will prevent flaking during firings. If your clay contains a high percentage of iron oxide and salt crystals, these act as strong fluxes and will prevent some flaking as well.
**Black Vitreous Slip**
**Cone 04**

- Ferro Frit 3124: 40%
- Nepheline Syenite: 20%
- OM4 Ball Clay: 30%
- Silica: 10%
- Add: Copper Oxide: 3%
- Cobalt Oxide: 1%
- Chrome Oxide: 5%
- Red Iron Oxide: 4%

This slip recipe is for use with wet to leather-hard clay. A vitreous slip or engobe will flux more than a basic slip recipe, and is between an engobe or slip and a glaze in composition.

**Deb’s Clear Base**
**Cone 04**

- Ferro Frit 3195: 45%
- Ferro Frit 3134: 30%
- EPK Kaolin: 25%

**Butter Yellow:**
- Add: Mason Stain 6464
- Zirconium Yellow: 2%

**Moss (food safe):**
- Add: Copper Carbonate: 2.5%
- Burnt Umber: 4%

This glaze is transparent and shiny. Apply thin in order to ensure the fired glaze will be a transparent clear. It is very responsive to colorants. Use a thicker application with colorants to achieve a rich translucent glaze.


**Icy Blue Glaze**
**Cone 04**

- Gerstley Borate: 25%
- Lithium Carbonate: 4%
- Ferro Frit 3124: 29%
- Nepheline Syenite: 19%
- EPK Kaolin: 5%
- Calcined EPK Kaolin: 5%
- Silica: 13%

- Add: Copper Carbonate: 0.4%

This glaze works best when it is not too thick. If the glaze application is thicker than normal (more than the thickness of a dime) it runs excessively. Recipe adapted by Kari Radasch from a Woody Hughes recipe.
**White Slip**  
Cone 06–10

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Feldspar</td>
<td>25%</td>
</tr>
<tr>
<td>Ball Clay</td>
<td>25%</td>
</tr>
<tr>
<td>Kaolin</td>
<td>25%</td>
</tr>
<tr>
<td>Silica</td>
<td>25%</td>
</tr>
</tbody>
</table>

100%

This slip is easy to mix, can be applied on greenware and bisque, and works from cone 06 to cone 10. The black stain I apply to bisque cleanly wipes off this slip.

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**Gerstley Borate Base Glaze**  
Cone 03

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerstley Borate</td>
<td>55%</td>
</tr>
<tr>
<td>EPK Kaolin</td>
<td>30%</td>
</tr>
<tr>
<td>Silica</td>
<td>15%</td>
</tr>
</tbody>
</table>

100%

**Blue:**  
Cobalt Oxide ............ 2%

**Rich Green:**  
Copper Carbonate .......... 6–8%

**Rich Yellow:**  
Rutile ...................... 6–8%

This glaze is a slight variant of a Wayne Higby 1-2-3 raku glaze. I mix up 5-gallon buckets of clear, Rich Green and Rich Yellow. I have on hand ½ gallon of Blue. The rest of the colors I use come from mixing these glazes together: Yellow Green: three parts Rich Yellow to one part Rich Green.

From Gail Kendall,  
*Electric Firing: Creative Techniques*.

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**Lana’s Purple Aqua Glaze**  
Cone 06

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium Carbonate</td>
<td>48%</td>
</tr>
<tr>
<td>Nepheline Syenite</td>
<td>48%</td>
</tr>
</tbody>
</table>
| Pemco Frit 626 or Ferro Frit 3289 | 4%

100%

**Bentonite** .................. 2%

**Copper Carbonate** .......... 4–8%

This recipe should not be used on a food container, even on the outside. Spray thin for purple and thick for aqua. For more aqua, use smaller amounts of copper carbonate.

From Lana Wilson,  
*Ceramics Monthly, June 1995*. 
In this all-new Ceramic Arts Daily Presents video, John Britt lets you tap into his encyclopedic knowledge of ceramic glazes to build your own understanding of this complex topic. Starting with glaze testing—because testing is key to understanding raw materials and ceramic processes—John explains various testing methods that will help you get great results quickly. On disc two, John geeks out on materials, diving into the three basic components of a glaze—fluxes, glass formers, and refractories—and how various ceramic materials fit into those categories and work together to produce myriad outcomes. With this video, you’ll be able to deepen your understanding of glaze chemistry and improve your glazes at your own pace.

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