

# GE UltraGlaze\* SSG4600

## Part B (catalyst) material preparation

### SSG4603B & SSG4607B Catalyst Separation

Pails of SSG4603B (black) and SSG4607B (medium grey) catalyst will experience separation of components (visible as a clear liquid atop the bulk material) as the product ages. Liquid is generally not found if product is approximately <1 month from date of manufacture (and has been suitably stored). If older than ~1 month, separation is likely and re-constitution of components is required.

**Commercial pail shaking equipment** is the best recommended practice to re-mix components and provides the following advantages:

1. **Uniformity of mix** – consistency of snap time/cure, color, and cured physical properties
2. **Less waste generated** (than if mixed with drill/paddle or hand stirred) – paddle must be cleaned of excess catalyst after every use generating discarded cleaning rags/gloves and possibly/probably solvent
3. **Eliminates introduction of air into the bulk material** - post shaking, the top surface of product is fairly smooth/level which will minimize potential air when loading pail onto pump system (less air to bleed off if trapped under the follower plate due to an irregular top surface of product post-drill mixing, less bleed needed, less wasteful of product)
4. **EHS** – eliminates manpower and need to use drill with paddle and power cable/power source
5. **EHS** – minimizes exposure to vapors and possible product contact during mixing
6. **EHS** - no need to handle and clean drill paddle or mixing device (can be messy)



There are three basic types of shakers:

1. Vibrational (Orbital) – this type is **recommended**
2. Gyration (Rotational) – this type is **not recommended** and should not be used to re-incorporate separated components
3. Vortex – this type is **not recommended** and should not be used to re-incorporate separated components

### Vibrational Pail Shaker – **BEST RECOMMENDATION**

A vibrational shaker agitates the material in the pail via reciprocating elliptical motion. Some manufacturers use the term “Orbital” to characterize this type of shaker.

### Validated vibrational shakers:

- Red Devil 5990
- Red Devil 5995
- Harbil 5G
- Highland Megamix 20-40
- Hero S2700





## Gyrational & Vortex type Pail Shakers – **NOT RECOMMENDED**

Gyrational shakers use gyroscopic mixing action that mixes containers end-over-end (upside down) while simultaneously spinning the pail. Gyrational shakers are also sometimes characterized as “Rotational” shakers.



Vortex shakers utilize a cyclonic type of motion (similar to centrifuge) during the mixing cycle. These two shaker types do effectively reconstitute the liquid separation, however there are undesirable side effects as described below.

1. Post-shaking, the top surface of the catalyst is not level, this is not helpful when de-airing upon loading the pail onto the pump system.
2. Significant catalyst residue is transferred and remains on the underside of the lid creating significant waste and mess.



3. Both Vortex and Gyrating shakers create a large void down the center of the product which can become difficult, if not impossible, to avoid introducing air into the catalyst (which can result in “air bubbles” in the dispensed sealant if introduced into the pumping system).



## SSG4603B & SSG4607B – Material Preparation Using Shaker

1. Check the label to confirm that the pail to be used is not expired (end use date).
2. Remove the lid from the pail & inspect for clear liquid
  - a. If clear liquid is not evident, the material is ready for use without further mixing
  - b. If clear liquid is evident but in depths  $\leq 6\text{mm}$  ( $1/4''$ ), the material is ready for use without further mixing
  - c. If clear liquid is evident but in depths  $\geq 6\text{mm}$  ( $1/4''$ ), then the material must be mixed
    - ☼ Do not remove the clear liquid
    - ☼ Remove plastic liner and wring excess liquid\* from the plastic liner back into the pail
    - ☼ Discard plastic liner (except\*\*)
3. Place the lid back onto the pail and firmly tighten
4. Place the pail into the shaker machine and run for  $\sim 8\text{-}10$  minutes to achieve homogeneous mix
5. Remove the lid after mixing and re-inspect. If clear liquid remains [see b.) above], repeat steps 3 and 4.



\* Use suitable PPE; reference respective SDSs

\*\*If mixing extra pails prior to use, after mixing reuse the blue plastic liner pressing it tightly atop the material to minimize contact with air / moisture in the headspace above the catalyst. Place the lid back onto the pail and firmly tighten.



Liquid



Wring excess liquid from blue liner



## SSG4603B & SSG4607B – Material Preparation by Stirring



Hand mixing using a suitable object (a smooth wooden dowel of 3/4 to 1 in. diameter works well) can be used if a validated vibrational shaker is not available. Any such object should be easily-cleanable so no catalyst residue remains on it after cleaning. The catalyst should be mixed until at least the upper 1/3 of the material is reconstituted. Care should be taken so as not to introduce air into the material.

## SSG4603B & SSG4607B – Material Preparation w/ Drill & Paddle – **NOT RECOMMENDED**

The use of a drill & paddle is not recommended due to the increased likelihood that air becomes entrapped during this mixing process. Entrapped air can later manifest itself as bubbles within the cured sealant.

