

# Glusatz

Glusatz is the name of a slow burning mixture used in German "Knallkorpers" (matchbook firecrackers).

*Glusatz burns reliably and can be used for long time delay fuses. See the video at the end of this page. The following glusatz formula purports to burn at 30 seconds per inch. However, made the way shown it burns somewhere around 14 seconds per inch.*

*You can experiment with different proportions of ingredients to adjust the burn speed. The mixture seems to burn reliably even if modifying the quantities by several percentage points.*

## Ingredients:

Barium nitrate 75.5  
Charcoal (airfloat - Skylighter or Service  
Chemical charcoal works fine) 10  
Sulfur 10  
Meal 3  
Cab-O-Sil 1  
CMC 0.5  
Dist. water +6 (dissolve CMC first then  
add remaining ingredients)

Source: Glusatz was described in a book called "Big Bang Theory and Practice" which I have not seen. The reference to the book was gleaned from several older posts on rec.pyrotechnics. Glusatz was also described on the APC forum. Specific names of posters are left off but I will cite them if they wish (contact us by using the email address on the index page).

***Barium nitrate is poisonous. Wear gloves, mask and wash clothes after exposure. It is normally a good idea to mix this outside to avoid shop contamination.***



First, assemble the ingredients. I like to chuck the ingredients in a small mill and let it run for about 15 minutes - just to consolidate the different powders. That also cuts down on the barium nitrate dust since the mixing is done in the enclosed container. However, milling causes the speed to increase so only mill for a short while. The basic formula burns at about 14 seconds per inch if milled for 15 minutes in a rock tumbler. You can take out the meal-D and decrease the barium nitrate to make it burn slower. No meal-D and 70% barium nitrate, made with this method, burns at about 22 seconds per inch.

Like all pyro processes, settle on one way of doing this and don't change. That way you can repeat the process at a later date. Do not mill inside the house - choose a remote area. This mix contains both fuels and oxidizers.

I usually make about 200 grams at a time. 200 grams will make dozens of fuses.

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After milling ingredients, screen and put in a baggy



We'll do an example using a 1/4" cracker case and a teaspoon of mix (which would make several fuses)

You can make your own cases with some paper and a 1/4" rod. Just wrap three or four wraps and glue. This is one example where you don't have to have a perfect case to make things work.



Wet with acetone. You can use distilled water but acetone dries much quicker so I use it often.



Punch a case into the mix until it fills



Use a 1/4" rod, hand pack until the case fills to about 5/16" of the top.



Slip in a loop of black match or other fuse and continue to tamp composition around the fuse until it is within 1/8" or so of the top