

SABRE MC simulation updates

Giulia D'Imperio

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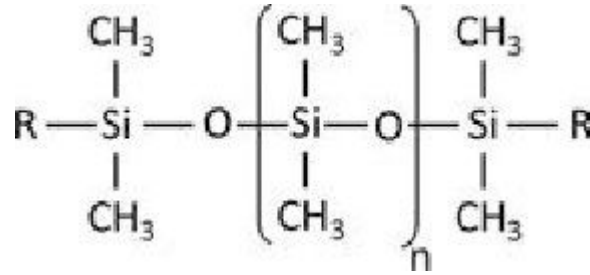
Communications, shared material, meetings

- Slack channel for chat/quick communication
https://join.slack.com/t/sabre-north/shared_invite/zt-2y8yhdqxx-x5LV2MoDHAhHIXzmvJrxkQ
- Mailing lists:
 - for all members: sabre-north@lngs.infn.it
 - simulations working group: sabre-north-mc@lngs.infn.it
- Teams for sharing materials:
https://teams.microsoft.com/l/team/19%3aQ4t-496fRD7axygZ9At1Gj6GAkod9EUYm2p8orXLo_c1%40thread.tacv2/conversations?groupId=c7aa97d4-1a33-483c-a7cb-16160b3819ac&tenantId=2e10e44d-c7b9-43e3-b020-1292482e504a
- This meeting will become recurring bi-weekly on **Tuesdays at 10 am** (this week occasionally on Wednesday) → next on Tuesday 04/02

Tasks

1. Implement RMD “NaI-35-like” enclosure → Giulia
2. Replacement of internal copper box with a 1 cm PE box → Claudia
3. Check physics lists for neutrons simulations → Chems
4. Check if we have radioactivity measurements for all the parts → all
5. Run simulation jobs → all

Materials



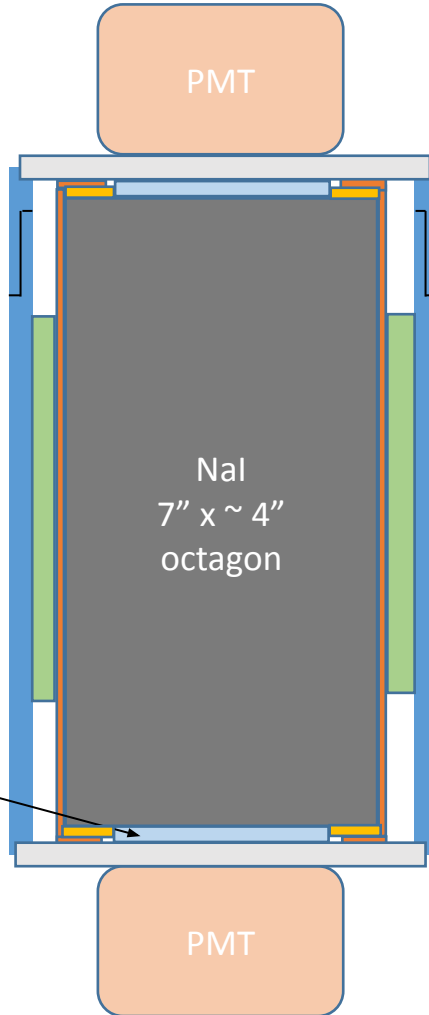
- Optical pad → Silicone rubber:
 - chemical structure from:







https://www.researchgate.net/publication/322902333_Mechanical_Thermal_and_Morphological_Behavior_of_Silicone_Rubber_during_Accelerated_Aging

- density 1.03 g/cm³ from

<https://eljentechnology.com/products/accessories/ej-560>

- Gore DRP annulus → ?

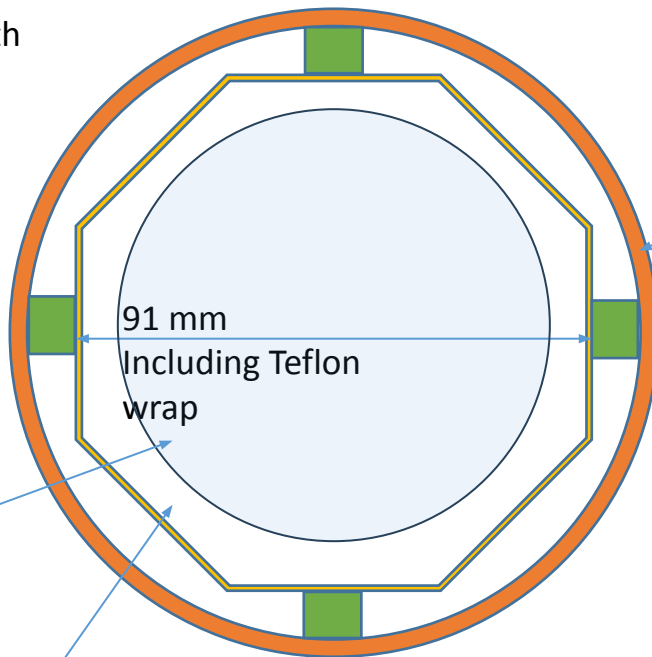


-  Reflective Teflon wrap (~ 1 mm)
-  Silicone Gel pad optical coupling (2 mm) Eljen EJ-560
-  Window (Corning 7980 fused silica)
-  Shim (x4) (PTFE) Thickness??
-  Gore DRP ring (1.5 mm) material??
-  Copper enclosure (Thyssenkrupp, OFE copper C10100 H58)

Gel pad sized to match the active area of the PMT

NOT DRAWN TO SCALE!

Actual octagon
dimensions:
89 mm side to side
181 mm end to end length



Copper tube
ID = 108 mm
OD = 114 mm

Shim (PTFE) 8 x 10 x 100 mm

3" dia gel
pad

Gore DRP annulus
3" dia hole inside
Octagon periphery