

FAQ on PMMA for grinding wheel production

1. Which material is used?

Acrylic or PMMA is used for this application. The size is depending on the customer requirements. However, mostly something between 0.3mm and 1.5mm is used.

2. How is this material used in the manufacturing process for grinding wheels?

It will be mixed to the compound of a grinding wheel and used as pore-forming agent. Therefore, grinding wheel producers use different sizes of acrylic, depending on the required porosity of the grinding wheel. After mixing everything, the compound will be burned in an oven at temperatures between 800° C and 1500° C, during this burning process our acrylic will completely burn out, which finally leads to the porosity or structure.

This YouTube video of a German grinding wheel producer explains the different production steps quite good: <https://www.youtube.com/watch?v=RMkPGuVDpig>

3. What are the main advantages of using Emsodur PMMA media?

The advantages of our material are:

- Our material is free from contamination, which allows to burn out everything
- Material is sieved to a particular size, within a specification. This allows to have very exact pores in a grinding wheel.
- Our material is not harmful to health. In the past naphthalene was used as pore generator, however naphthalene is carcinogenic and because of that should be avoided in production.

4. Which competing products are on the market?

Naphthalene is the competing product. The problem with Naphthalene I already mentioned above. In Europe Naphthalene will be forbidden to use in production.

5. Which companies in Europe are using PMMA?

Several big companies, such as Sebalb & Co. GmbH, Comet Schleifscheiben GmbH, Krebs & Riedel Schleifscheibenfabrik GmbH, Lapport Schleiftechnik or Theleico Schleiftechnik GmbH

6. What is the shape of porous forming agent?

The shape is granular

7. How does PMMA behave during the burning / heating process?

Softening temperature	102-115°C
Flammability temperature	425-435°C (according to DIN 51794)
Flammable temperature	300°C
Decomposition point	from 190°C
Decomposition time	Depending on the temperature and burning curve during the burning process