

Reaction of an Alpha-hemihydrate with water

Equipment

- Microscope: Olympus BX 61
- Camera: Olympus ColorView II
- Software: AnalySIS Pro five Build-Nr. 1235
- Slides, cover glasses, non-soluble grease, rubber sealing ring, syringe with distilled water

Measuring cell

- Samples were measured in a special cell
- Measuring cell was made of rubber sealing ring attached with grease to a slide. Then the cell was filled with hemihydrate and water and closed by a cover glass, which was also fixed with grease.
- Every 30 seconds a picture was taken at 150 times magnification



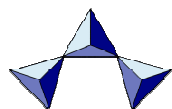
Slide



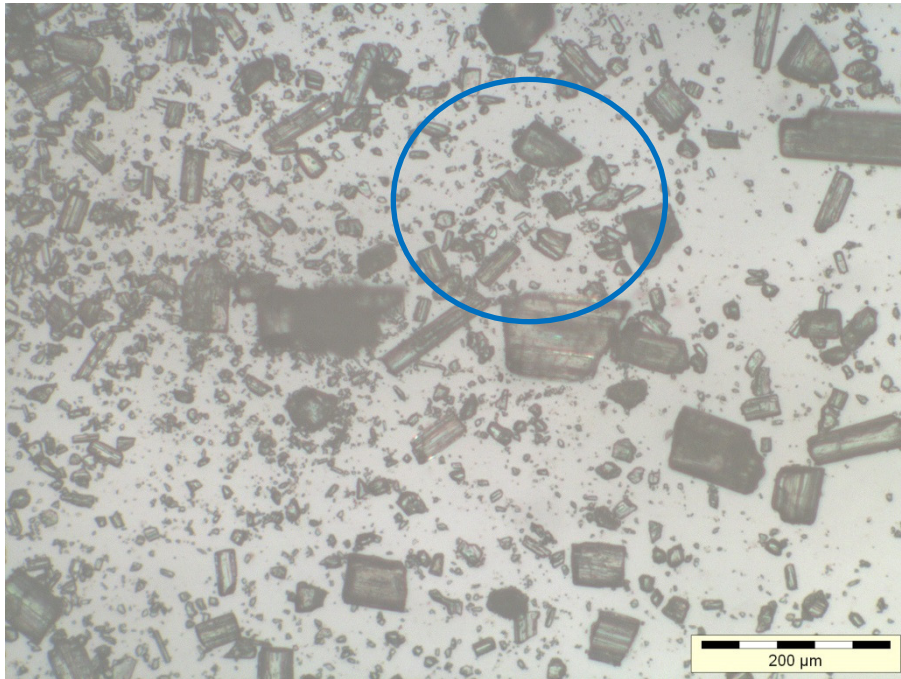
Cover
glas



Rubber
ring



First and last picture of the series



Mixture of larger and smaller hemihydrate crystals

The Video also shows the expansion during hydration.

The growing crystals push each other away, which causes the expansion (in Video, for example, blue circle)

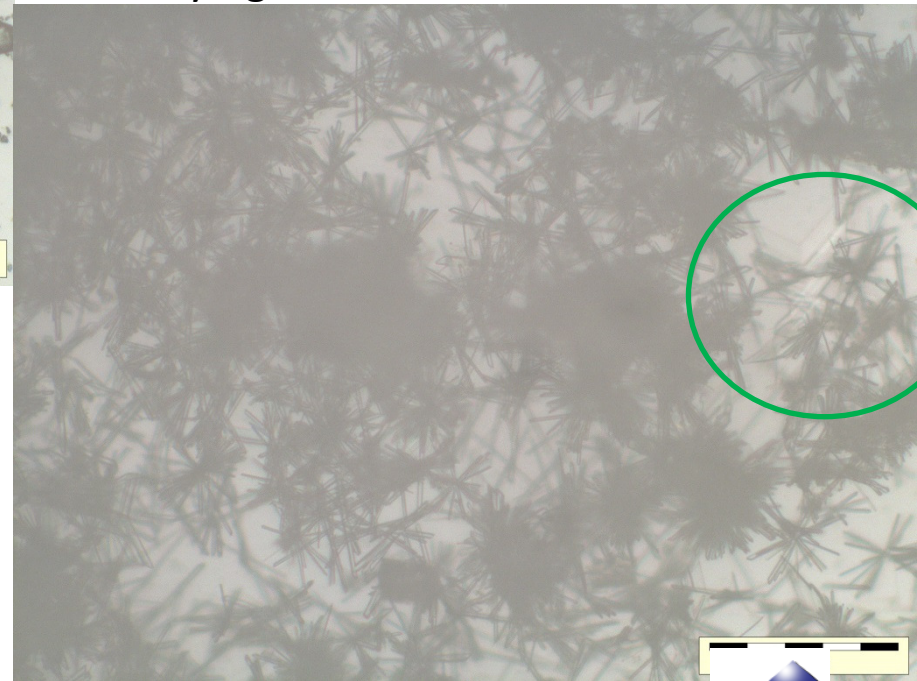
Creation of large highly branched dihydrate crystals alongside dovetailed twins (green circle)

Thus:

good strengths

high porosity

fast drying



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Apendix

- The Institute for Building and Materials Chemistry is working on the field of different inorganic binders, and the influence of different additives to these materials.
We have a wide range of experience in this field and a wide range of modern analytical methods.
- We would be happy to share this knowledge and experience with you in cooperation projects, for example research and development projects

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Thank you for your attention

