Building scheme for MAZ

1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
4. Channels and/or cages – 5. Supplementary information

1. Periodic Building Unit:

MAZ can be built using the saw chain (bold in Fig.1 (a)) running parallel to ***c***. The repeat distance along the saw chain is about 7.5 Å. The repeat unit in the chain consists of 3 T atoms. Six saw chains are connected into a one-dimensional Periodic Building Unit (PerBU) consisting of a column of ***gme*** cavities that are connected through common single 6-rings (Fig.1(a)). A different PerBU can be built using six 5-1 units as shown in Fig.1 (b) [See also: **Aternatve description**].

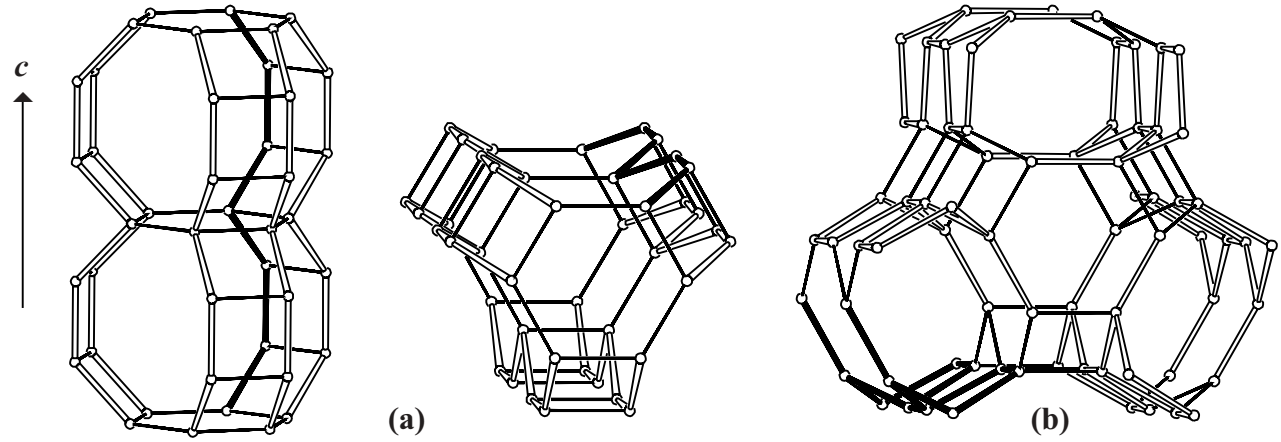


Figure 1. (a): PerBU: six saw chains (or three 4-2 units) form (fused) ***gme*** cavities; view perpendicular to ***c*** (left) and along ***c*** (right); (b): Alternative PerBU built from six 5-1 units (one set of 5-1 unis along ***c*** in bold). This PerBU is equal to three linked 8-ring channels). [Compare Figure 3]

2. Connection mode:

Neighboring PerBUs, related by a rotation of 60º about ***c*** and a shift of ½***c***, are connected into the ***ab*** plane through 5- and 8-rings (Figure 2). 8-Ring channels parallel to ***c***, that interconnect 8-rings in the ***gme*** columns, are formed.

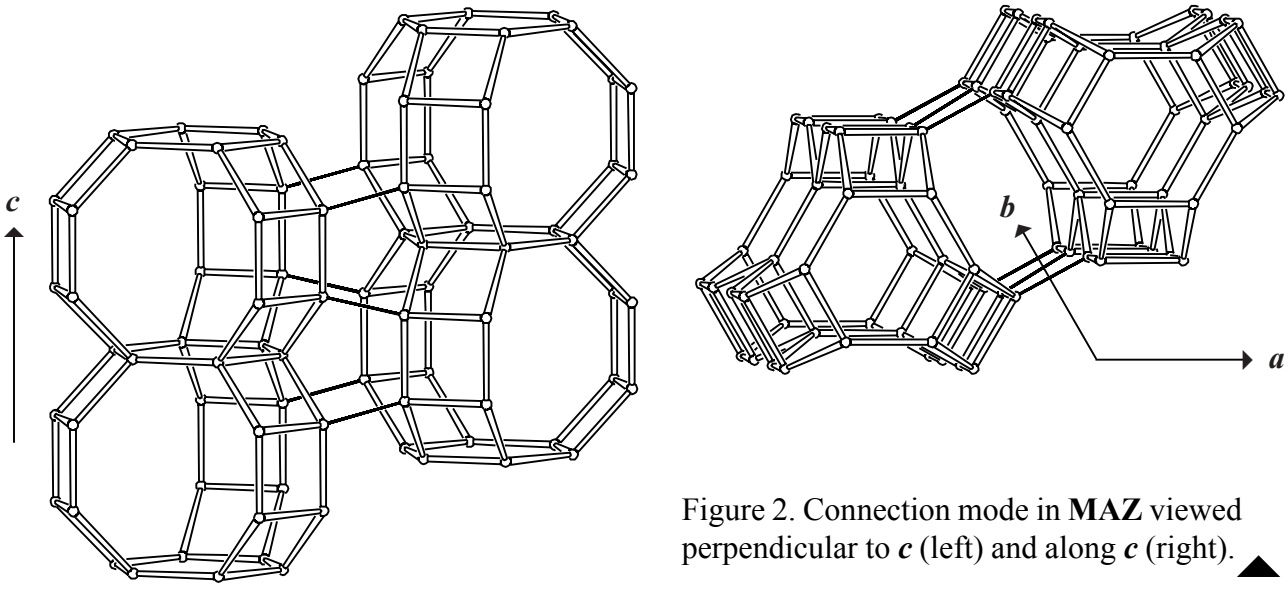


Figure 2. Connection mode in **MAZ** viewed perpendicular to ***c*** (left) and along ***c*** (right).

3. Projections of the unit cell content: See Figure 3.

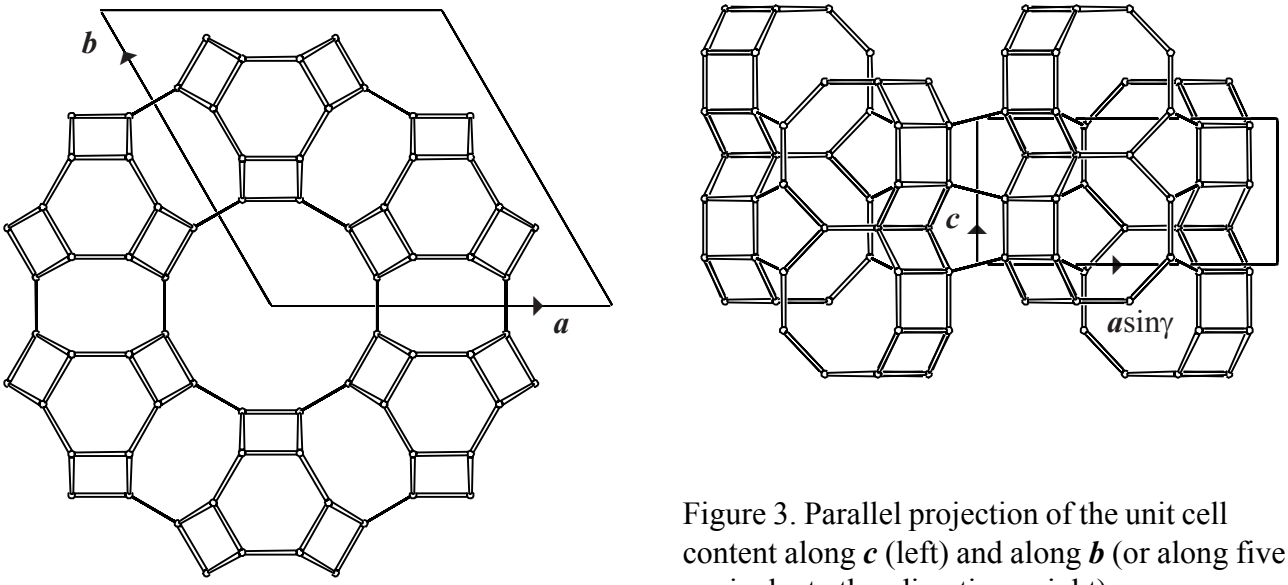
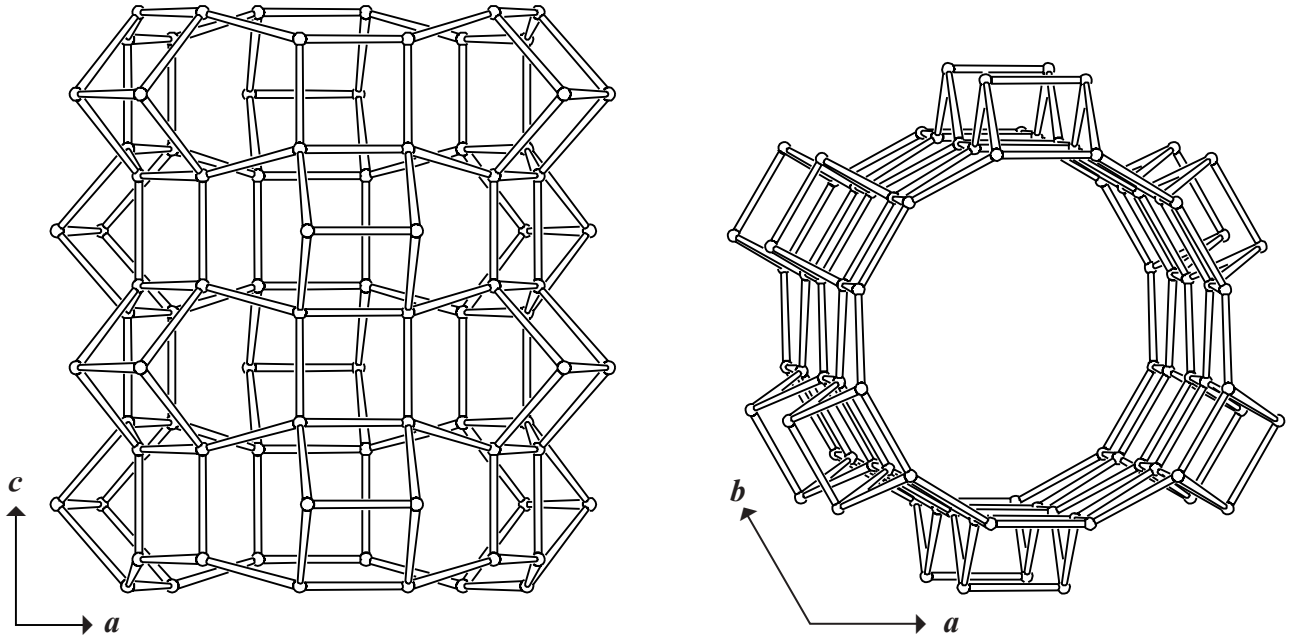


Figure 3. Parallel projection of the unit cell content along ***c*** (left) and along ***b*** (or along five equivalent other directions; right)

4. Channels and/or cages:

One-dimensional non-interconnecting 12-ring channels are parallel to ***c*** as shown in Figure 4. In addition, columns of ***gme*** cavities are interconnected through 8-ring channels parallel to ***c*** (Figures 2 and 4) leading to a rather complicated three-dimensional channel system with 8-ring windows. The **pore descriptors** are added. The linkage between channels is illustrated in Figure 5.



12-ring channel
{1 [$4^{18}5^{12}12^{2/2}$] [001] (12-ring)}

Figure 4. 12-Ring channel viewed along <120> (left) and along ***c*** (right). [Figure 4 is continued on next page]

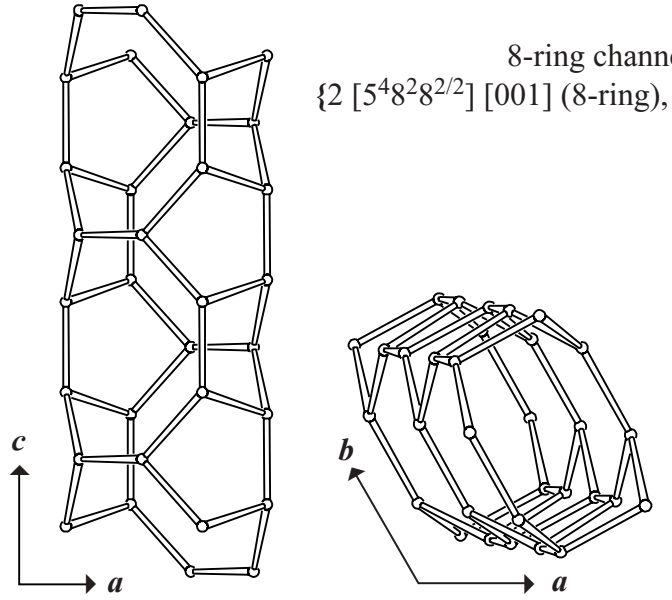


Figure 4 [Cont'd]. 8-Ring channel viewed along <120> (left) and along ***c*** (right).

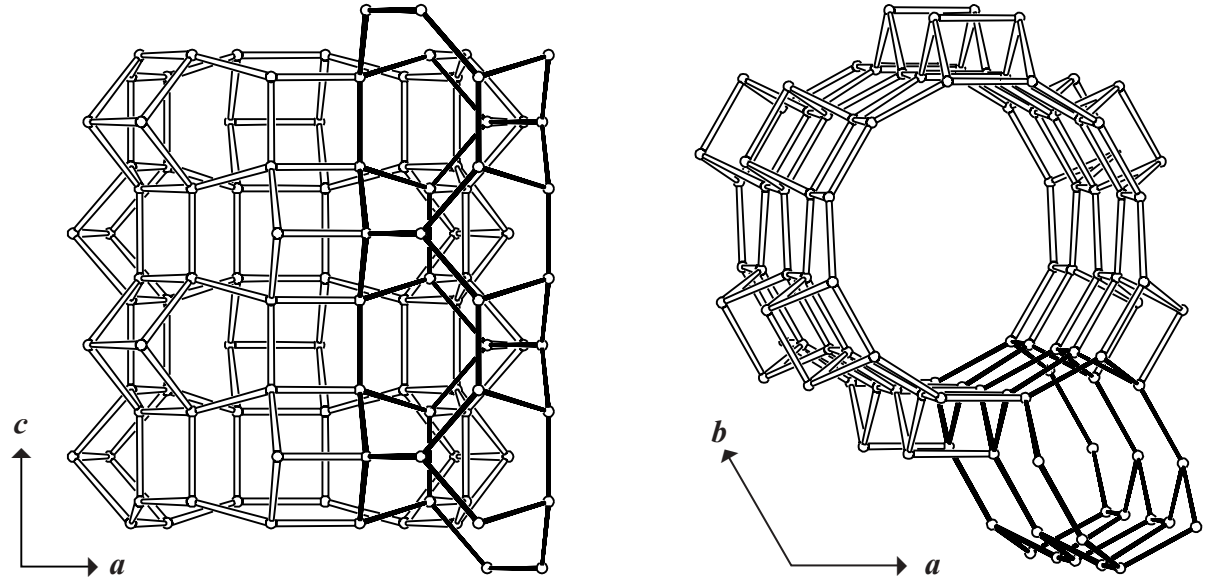


Figure 5. Fusion of channels viewed along <210> (left) and along [001] (right). The fusion between 8- and 12-ring channels through common 5-rings (in bold) is illustrated. Only one 12-ring channel is drawn for clarity. The fusion of 8-ring channel and ***gme*** cavities is illustrated in Figure 2.

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5. Supplementary information:

Other framework types containing saw chains

In several framework types at least one of the unit cell dimensions is about n*7.5 Å (where n = 1, 2, 3... etc.). In many cases this indicates the presence of saw chains.

In the **INTRO**-pages links are given to descriptions of other framework types containing (twisted) saw chains (choose: **Saw chains**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix**; **Figure 2**).

Alternative description using (modified) 5-rings

Several framework types, like **MAZ**, can be constructed using (modified) 5-rings.

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **5-Rings**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix**; **Figure 6**).