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1. Periodic Building Unit:

UFI can be built using units of 32 T atoms. This T32-unit is composed of two, mirror related, "half-cages". A half-cage consists of four (fused) 6-rings (or a 12-ring and a 4-ring) and exhibits 4-fold symmetry (Figure 1(a)). The T32-units (one in bold in Figure 1(b)), related by pure translations along a , and b , are connected into the Periodic Building Unit (PerBU) through 4-rings. The PerBU is equal to a layer of α -cages connected along a , and b through common 8-rings. The PerBU can as well be built using 4-2 units and 4-rings in a ratio 2:1 (see Figure 1(b) and [Alternative description](#)).

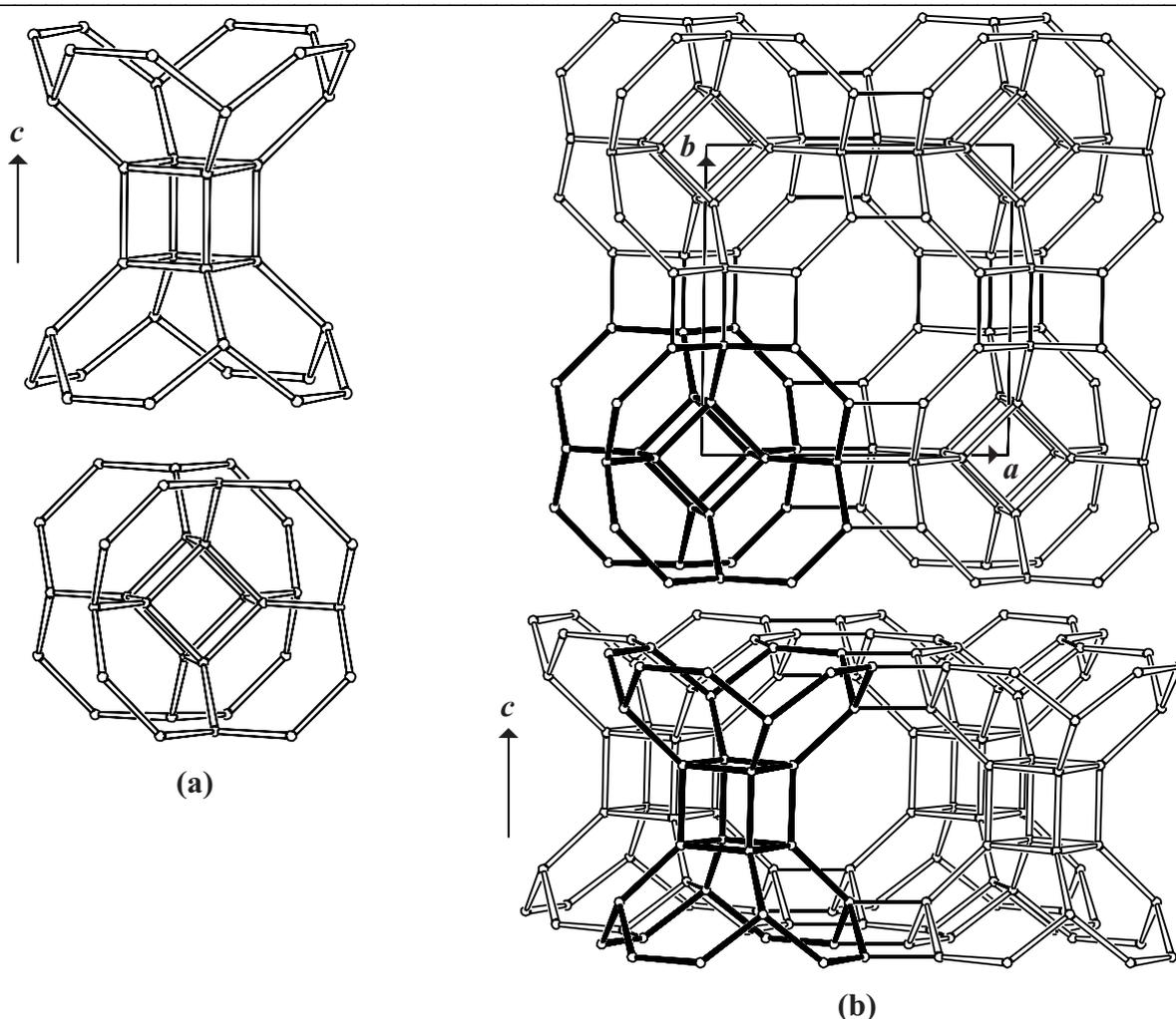


Figure 1. (a): T32-unit viewed perpendicular to the 4-fold c -axis (top), and along the 4-fold axis (bottom); (b): PerBU viewed along c (top), and along b (or a ; bottom).



2. Connection mode:

Neighboring PerBUs, related by a shift of $\frac{1}{2}(a+b)$, are connected along c as shown in Figure 2 on next page: 8-rings of the α -cages, parallel to the plane of the PerBU, are connected to the 12-rings of half-cages in neighboring PerBUs.

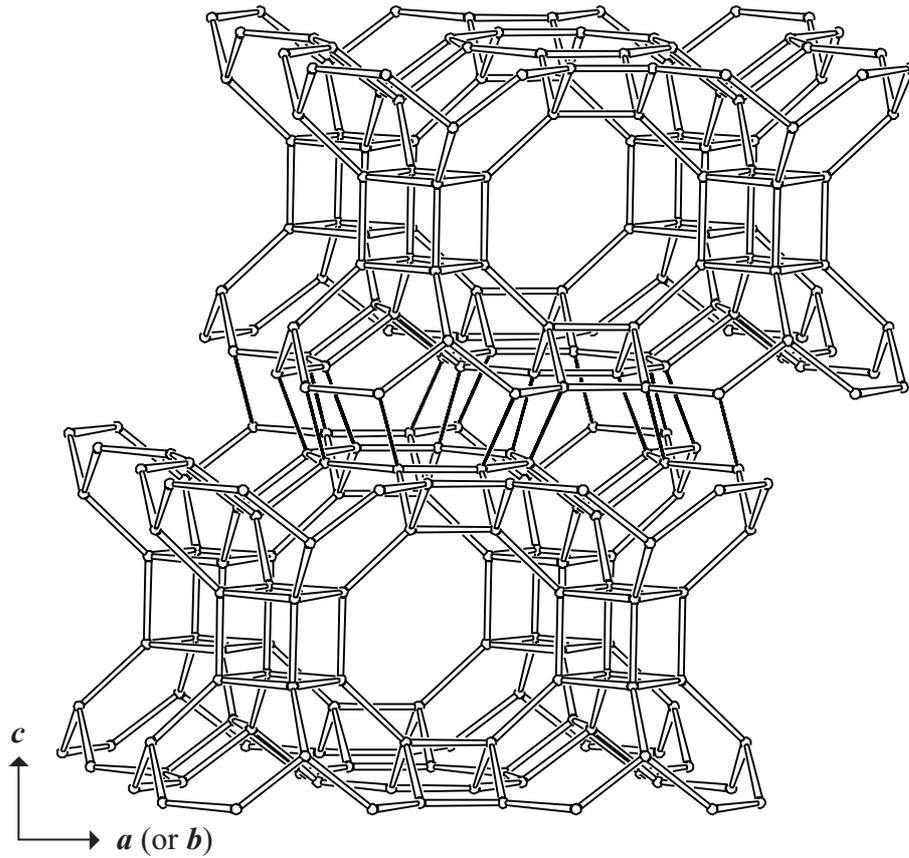


Figure 2. Connection mode in UFI viewed along b (or a). ▲

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

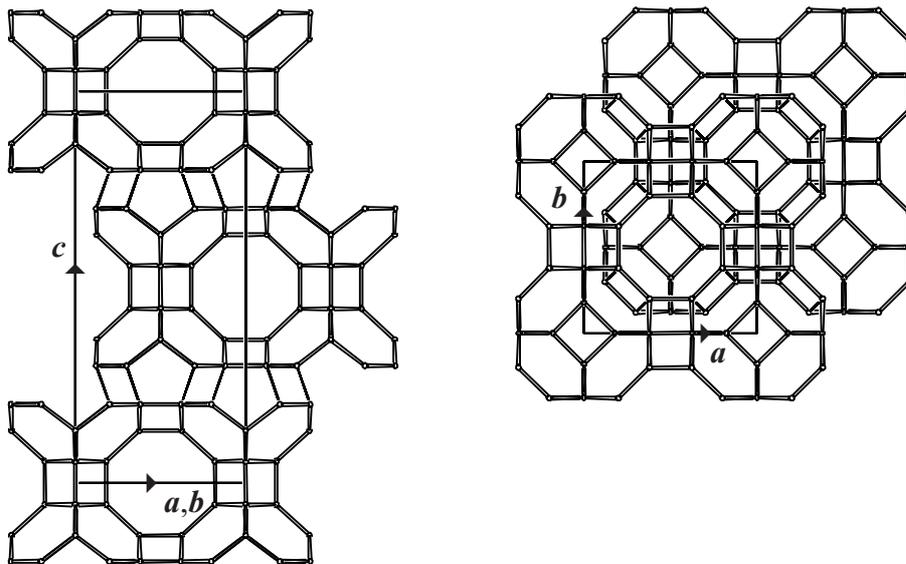


Figure 3. Projection of the unit cell content viewed along b (or a) (left), and along c (right). ▲

4. Channels and/or cages:

8-Ring channels parallel to *a*, and *b* intersect. The channel intersection, equal to the α -cavity, is depicted in Figure 4(a). Two "side-pockets" close the 8-ring windows of the α -cavity that are perpendicular to *c*. The **pore descriptor** is added in Figure 4. The fusion of intersections is illustrated in Figure 4(b).

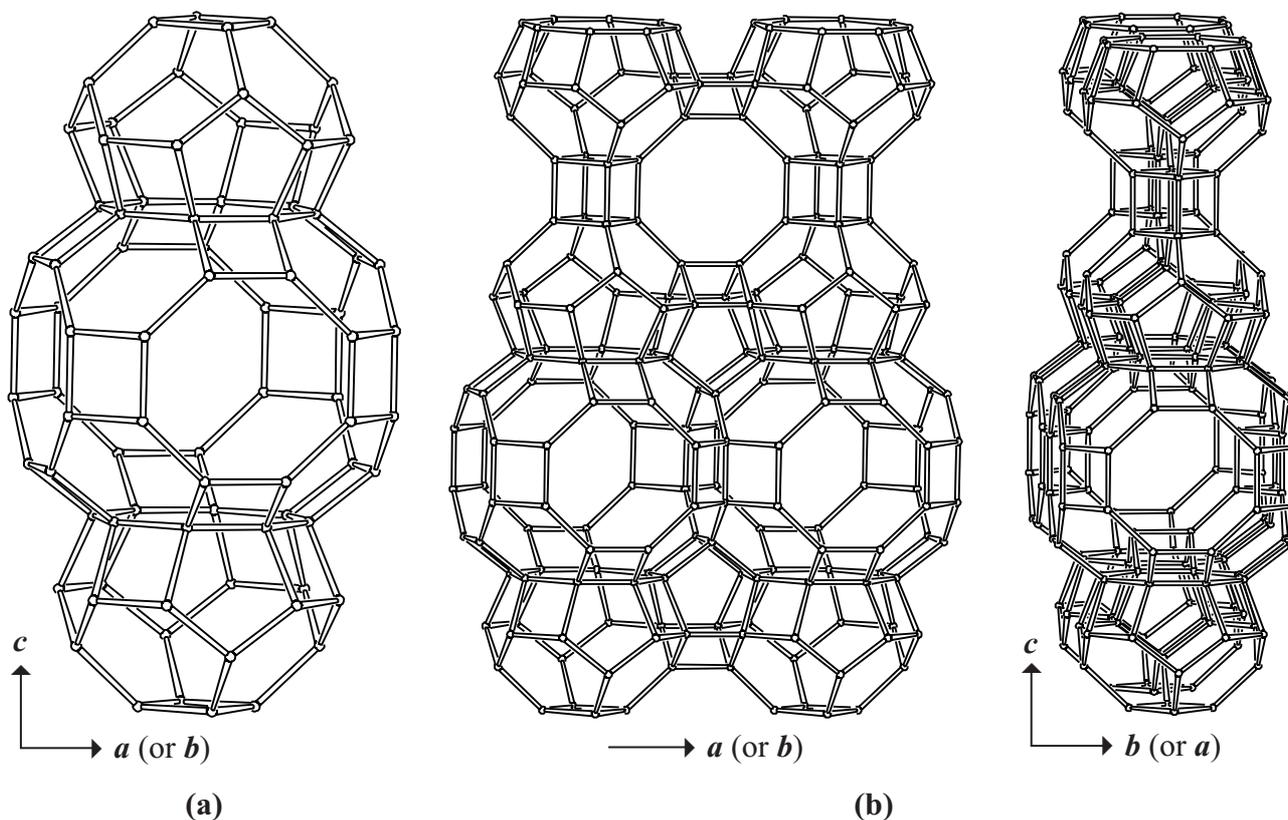
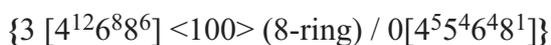


Figure 4. (a): Channel intersection and "side-pockets" in UFI viewed along *b* (or *a*); (b): Fusion of cavities and cages along *a* (or *b*) viewed along *b* (or *a*) (left), and along the 8-ring channel axis parallel to *a* (or *b*) (right). ▲

5. Supplementary information:

Other miscellaneous framework types

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Miscellaneous**). There is also a link to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 12**).

Alternative description of UFI using (modified) single 3- and/or 4-rings

Several framework types, like UFI, can be constructed using (modified) single 3- and/or 4-rings. In several cases additional T atoms are needed to build the framework.

In the **INTRO**-pages links are given to a detailed description of a sub-set of framework types that contain (modified) single 3- and/or 4-rings (choose: **Single 3- and/or 4-rings**). There is also a link to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 4**). ▲