

Building scheme for UOS



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2. Connection mode
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1. Periodic Building Unit

Orthorhombic UOS can be built using units of 12 T atoms consisting of 4-fold (1,2,4,5)-connected double 6-rings (one T12-unit in bold in Figure 1). T12-units, related along a and b by 2-fold screw axes parallel to a and b , respectively, are connected through D4Rs and 8-rings into the two-dimensional PerBU shown in Figure 1.

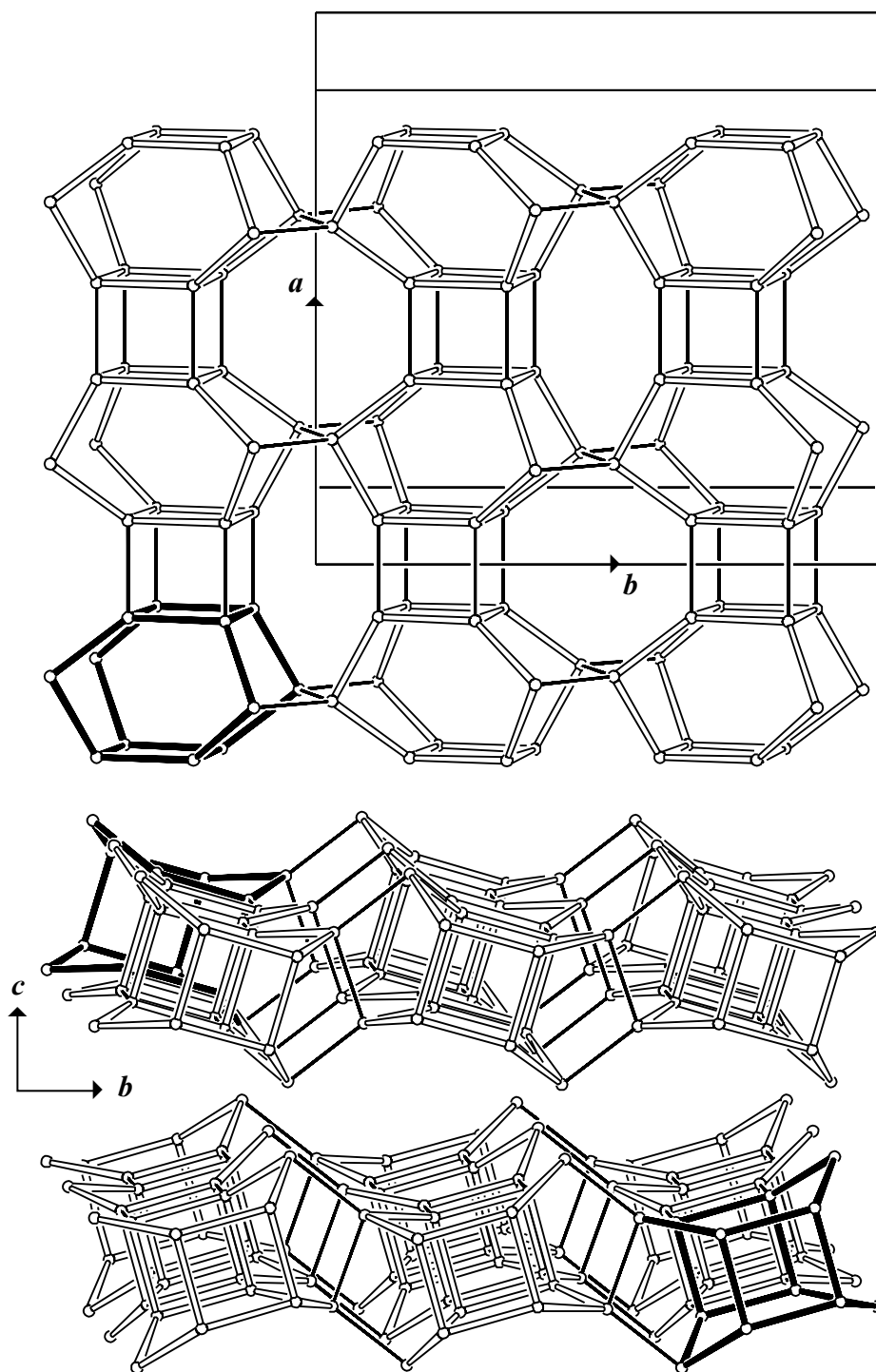


Fig. 1. PerBU constructed from T12-units viewed along c (top) and along a (bottom). The PerBUs at the bottom are related by a rotation of 180° about c .



2. Connection mode

Neighboring PerBUs, related by a rotation of 180° about c , are connected along c through 5-rings as shown in Figure 2.

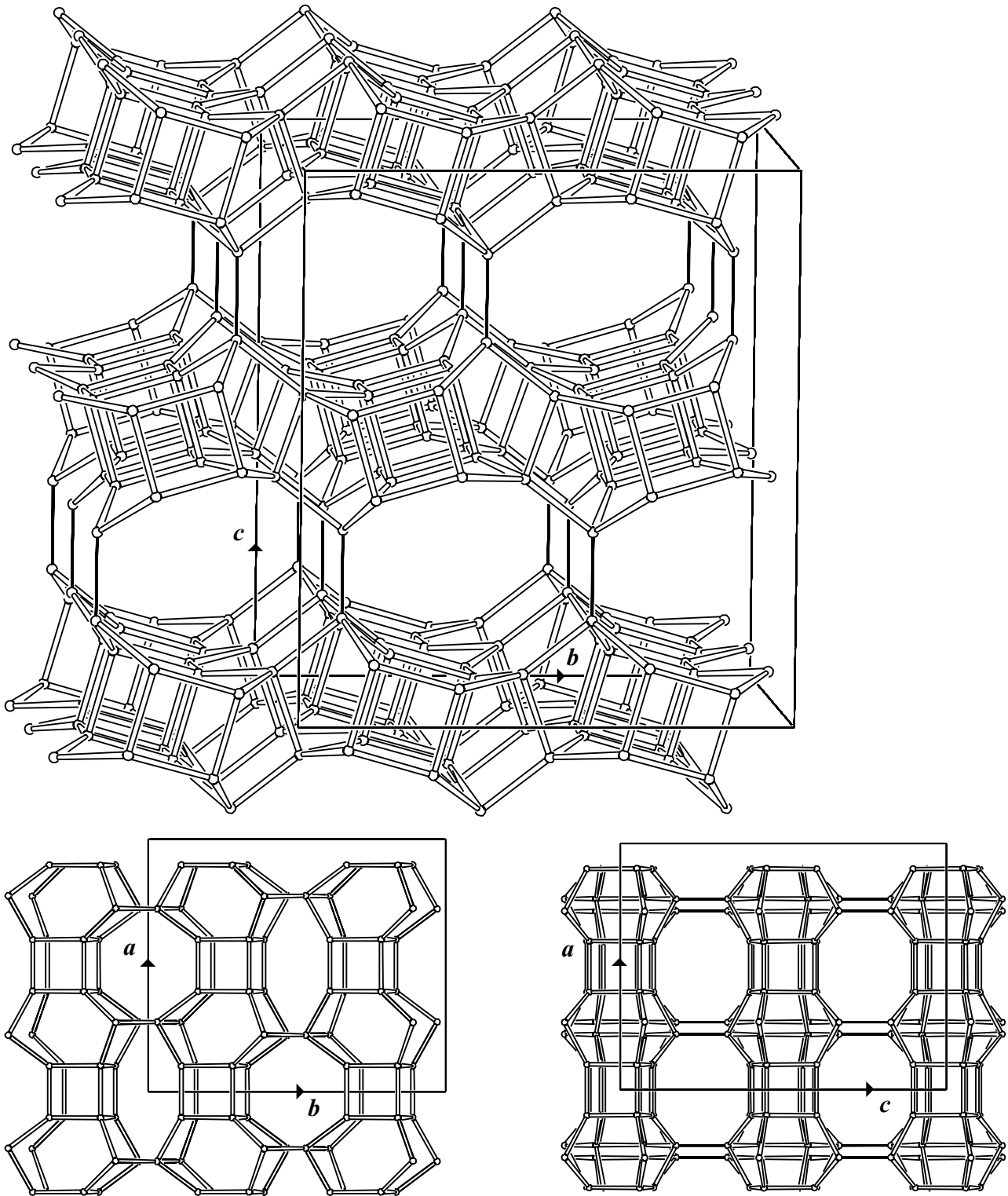


Fig. 2. Connection mode and cell content viewed along a (top) and projected along c (bottom left) and along b (bottom right) .



3. Channels and/or cages

Two types of 8-ring channels are parallel to c and another type of 8-ring channels is parallel to b . 10-Ring channels are parallel to a . The channels are shown in Figure 3. The **pore descriptor** is added.

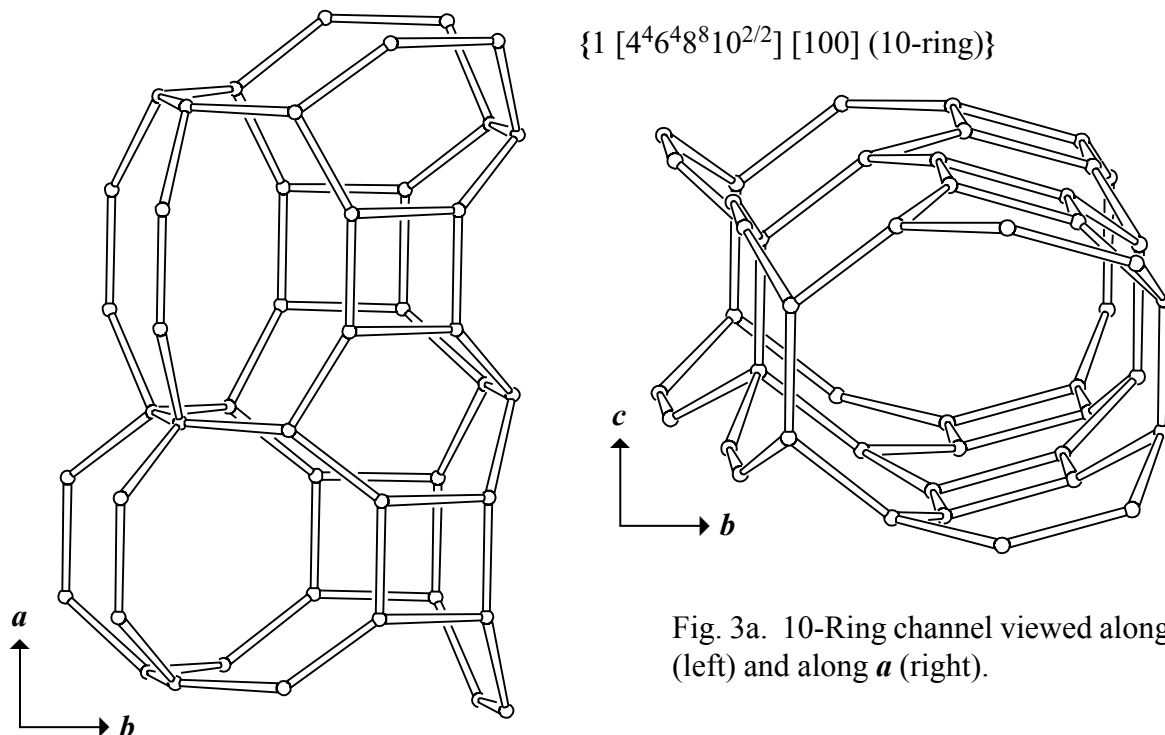


Fig. 3a. 10-Ring channel viewed along c (left) and along a (right).

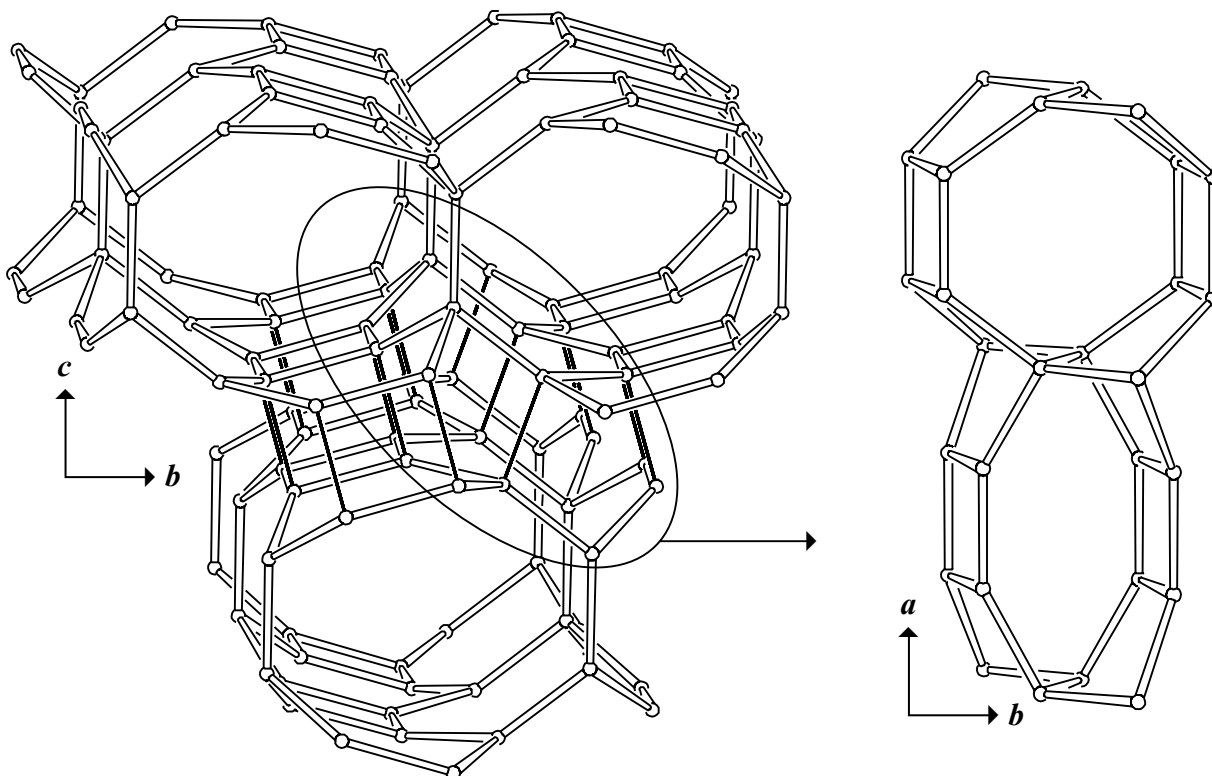
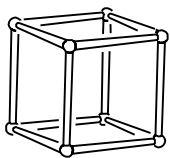


Fig. 3b. 10-Ring channels, related by a 2-fold screw axis along b , are connected along b through common 8-rings into 8-ring channels parallel to b (see also Figure 2, bottom right). 10-Ring channels, related by a 2-fold screw axis along c , are connected along c through D4Rs and 5-rings. The inset illustrates (part of) the two types of 8-ring channels parallel to c .

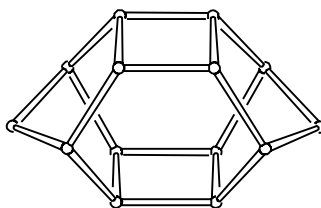
4. Composite Building Units

d4r: [4⁶]



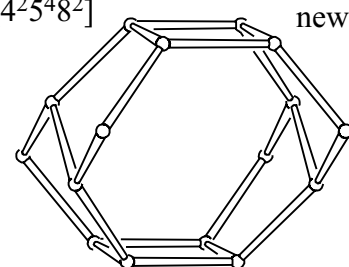
ACO, AFY, AST, ASV, BEC,
-CLO, DFO, ISV, ITH, ITR,
ITW, IWR, IWS, IWV,
IWW, LTA, SOF, STW, UFI,
UOS, UOZ, UTL

[4²5⁴6²]-b



*BEA, BEC, GON, ISV, IWS,
MSE, MTW, SFH, SFN, SSF,
UOS

[4²5⁴8²]



UOS

Fig. 4. Composite Building Units. ▲

5. Supplementary information

Other framework types containing (modified) double 4-rings (D4Rs)

Double 4-rings (D4Rs) can be connected in several other ways. In some cases the 4-rings of the D4Rs are not 4-fold connected and/or 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) D4Rs (choose: **Double 4-rings**). There is also a link provided to a summary of the PerBUs used in the building schemes of these framework types (choose: **Appendix; Figure 5**).

Other framework types containing (modified) double 6-rings (D6Rs)

Several other framework types can be built using (modified) D6Rs.

In the [INTRO](#) pages links are given to descriptions of other framework types containing (modified) D6Rs (choose: **Double 6-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 7**). ▲