Building scheme for ACO

1. Periodic Building Unit:

Cubic **ACO** can be built using the double 4-ring (D4R) as the zero-dimensional Periodic Building Unit (PerBU) drawn bold in Figure 1.

▲

2. Connection mode:

Neighboring D4Rs are related by a shift of ½($\pm a \pm b \pm c$). All eight T-sites in a D4R are singly connected to other D4Rs. 8-Ring windows are formed.
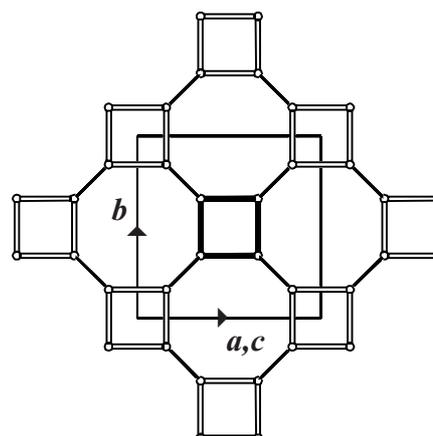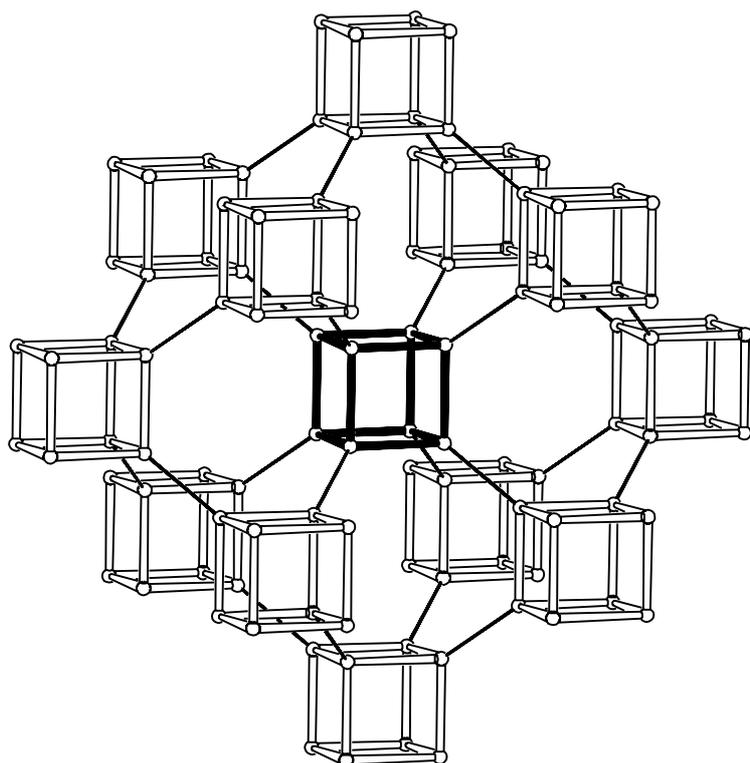

Figure 1. Connection mode and unit cell content in **ACO** seen along a cube axis. **ACO** can as well be constructed from single 4- or 8-rings, as can be seen from Figure 1 and Figure 2 on next page.

▲

3. Projections of the unit cell content: See Figure 1.　▲

4. Channels and/or cages:

Interconnecting 8-ring channels are parallel to <100>. **Pore descriptor**, channel intersection and the linkage of channel intersections through (double) 4-rings are shown in Figure 2. The channel in **ACO** is topologically equivalent to the channel in **MER**. The channels can also be constructed crankshaft chains (one in bold; see also **Alternative description**). [Figure 2 is on next page]

{2 [$4^2 8^4$] <100> (8-ring)}
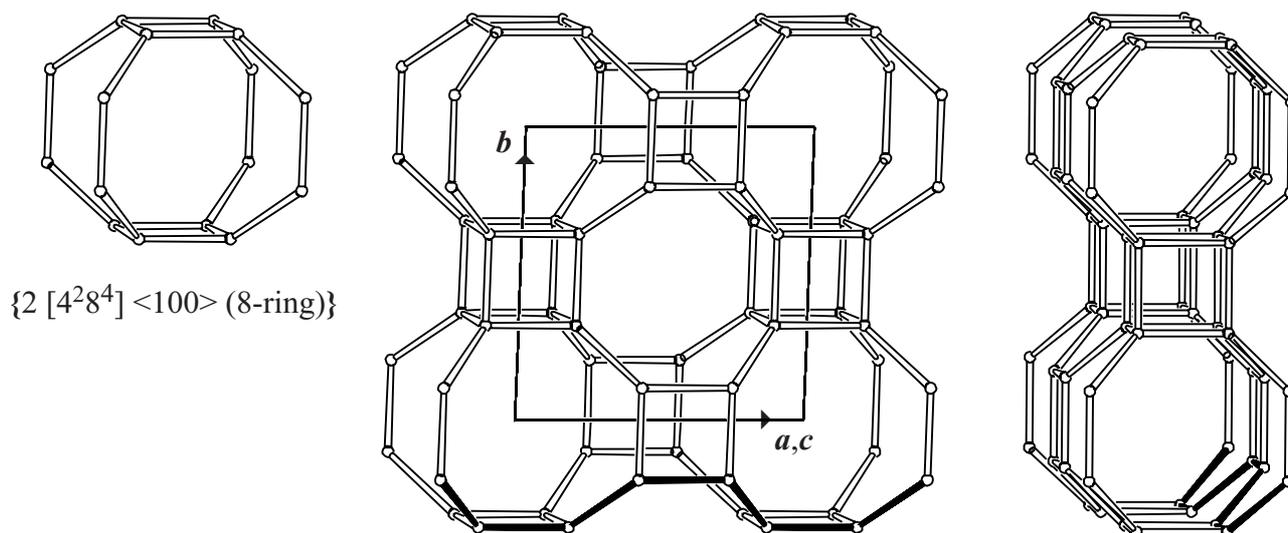
Figure 2. Channel intersection viewed perpendicular to a cube axis (left) and linked channel intersections, composed of 4-fold 1,2,5,6-connected double 8-rings, viewed perpendicular to a cube axis (middle) and along a cube axis (right). ▲

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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**).

Alternative description of **ACO** *using crankshaft chains*

Several framework types, like **ACO** (Figure 2), can be constructed using crankshaft chains. In these framework types at least one of the unit cell dimensions is between 8.4 and 9.9 Å.
In the **INTRO**-pages links are given to detailed descriptions of these framework types (choose: **Crankshaft 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 3**). ▲