

Building scheme for SAS



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:

SAS can be built using as one-dimensional Periodic Building Unit (PerBU) the chain depicted in Figure 1. The chain is composed of units of 16 T atoms (in bold) related by pure translations along c . The T16-unit consists of two two-fold (1,2)-connected double 4-rings or, alternatively, of a double 6-ring with two "handles" (or two 6-2 units; see [Alternative description](#)).

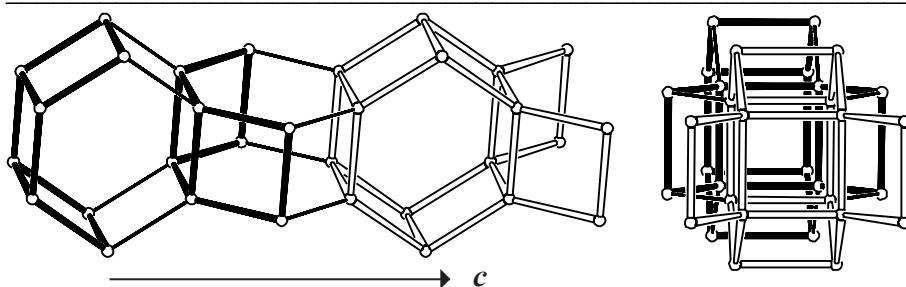


Figure 1. PerBU composed of T16-units viewed perpendicular to the chain axis c (left) and along c (right). ▲

2. Connection mode:

Neighboring PerBUs are connected along a 4-fold axis parallel to c through 6-rings as shown in Figure 2.

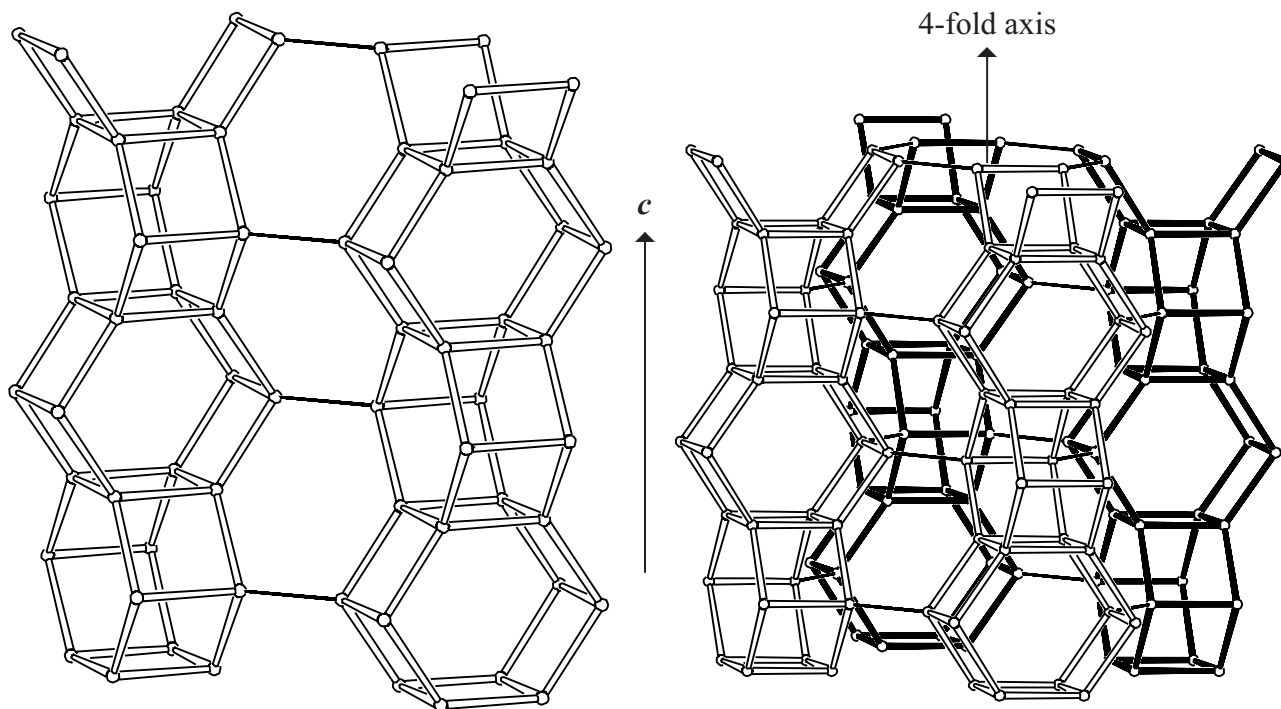


Figure 2. Connection mode of two PerBUs (left) and of four PerBUs (right) viewed perpendicular to the 4-fold axis. In the drawing at the right two PerBUs are in bold for clarity. Contracted α -cavities with 8-ring windows are formed. ▲

3. Projections of the unit cell content:

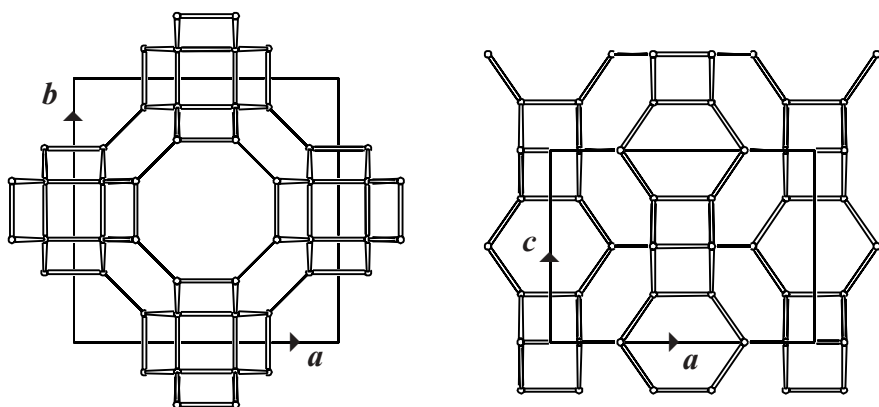
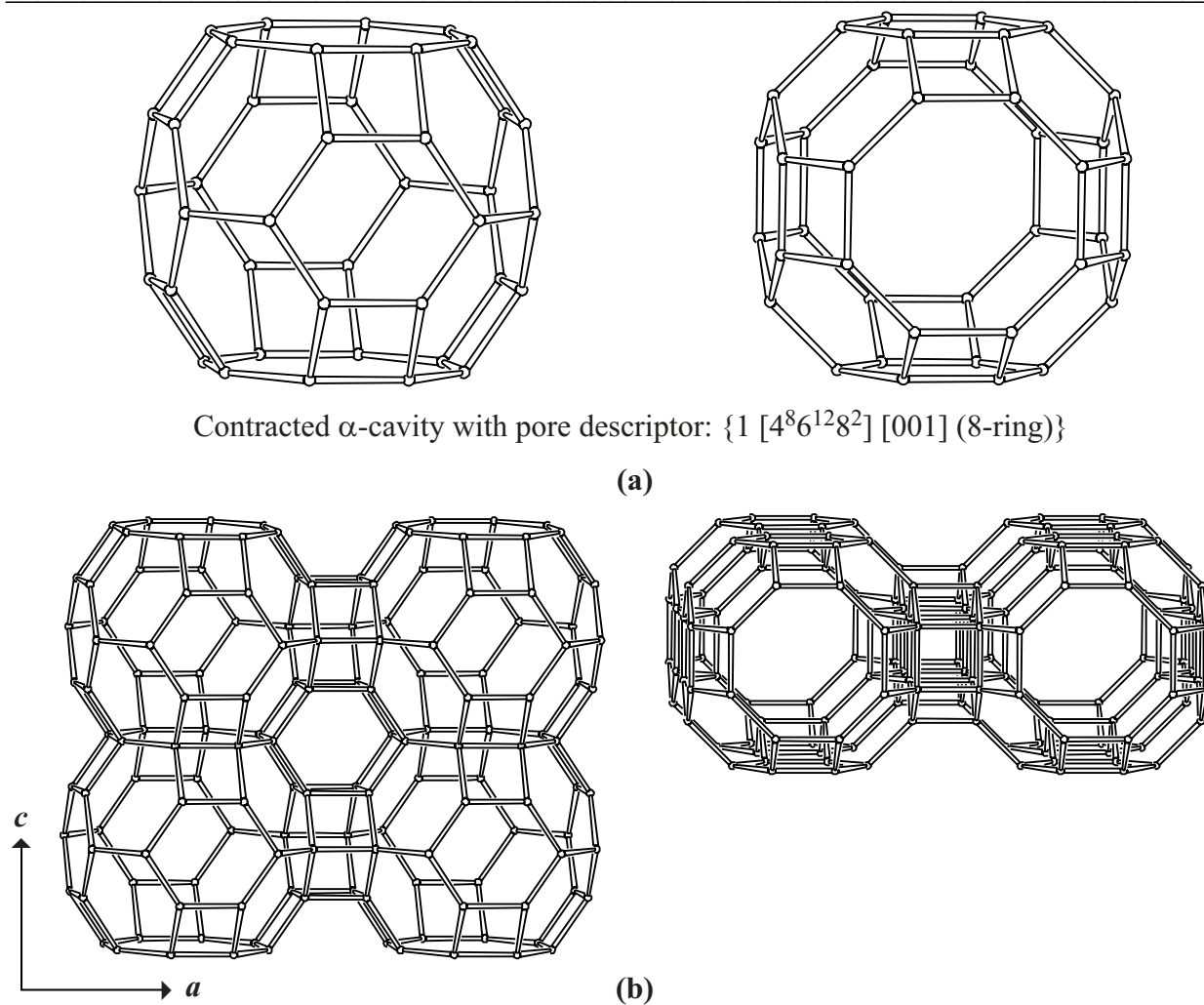


Figure 3. Cell content seen along c (left) and along b (or a ; right). ▲

4. Channels and/or cages:

The one-dimensional 8-ring channel system is composed of contracted α -cavities that are connected through common 8-rings along c . The cavities are connected along a , and b through double 6-rings. The cavity is shown in Figure 4 together with the **pore descriptor**.



Contracted α -cavity with pore descriptor: $\{1 [4^8 6^{12} 8^2] [001] (8\text{-ring})\}$

(a)

(b)

Figure 4. (a): Cavity, with pore descriptor, viewed along b (or a ; left) and along c (right); (b): Fused cavities viewed along b (or a ; left) and along c (right). ▲

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 SAS using (modified) double 6-rings (D6Rs)

Several framework types, like SAS, can be built using (modified) D6Rs (see Figure 1).

In the [INTRO](#) pages links are given to a detailed description of a sub-set of framework types that contain (modified) D6Rs (choose **Double 6-rings**). There is also a link provided to a summary of the PerBUs used in the building schemes of these framework types (choose: **Appendix; Figure7**).

