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:

![Cell content projections](image)

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 $\alpha$-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**.

![Pore descriptor](image)

Contracted $\alpha$-cavity with pore descriptor: $\{1 \ [4^86^{12}8^2] \ [001] \ (8\text{-ring})\}$

![Cavity and fused cavities](image)

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; Figure 7).