

# Building scheme for AET



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:

AET can be built using the crankshaft chain (bold in Figure 1 (left)) running parallel to  $c$ . The repeat distance along a crankshaft chain varies between 8.4-9.9 Å. The repeat unit consists of 4 T atoms. A one-dimensional Periodic Building Unit (PerBU) is obtained when seven crankshaft chains are linked into a channel with a 14-ring aperture with two additional chains as “handles”. The channel wall consists of fused 6-rings. An alternative PerBU can be built from 6-rings (bold in Figure 1 (right)).

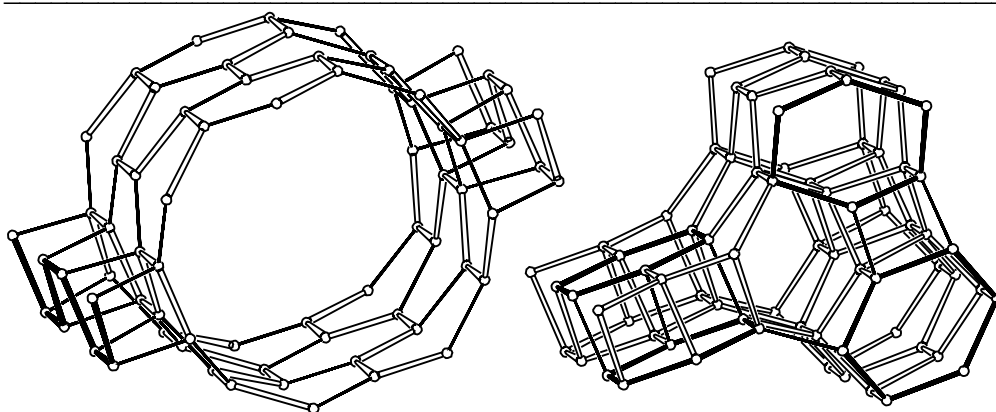


Figure 1. PerBU in AET, viewed along  $c$ , constructed from nine crankshaft chains (left) and 6-rings (right).



## 2. Connection mode:

Neighboring PerBUs, related by pure translations along  $b$ , and along  $(a \pm b)$ , are connected through triple crankshaft chains and through 6-rings, respectively, as shown in Figure 2.

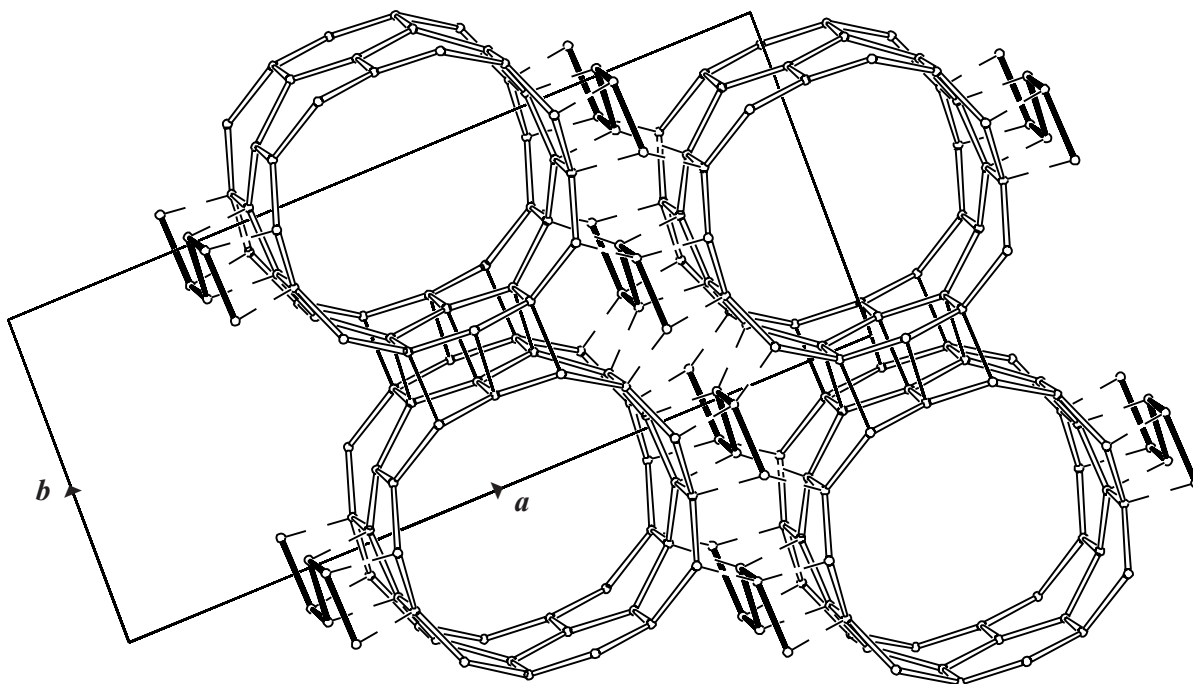


Figure 2. Connection mode viewed along  $c$ . For clarity, only  $1\frac{1}{2}$  repeat unit of the PerBUs along  $c$  are drawn.



### 3. Projections of the unit cell content:

---

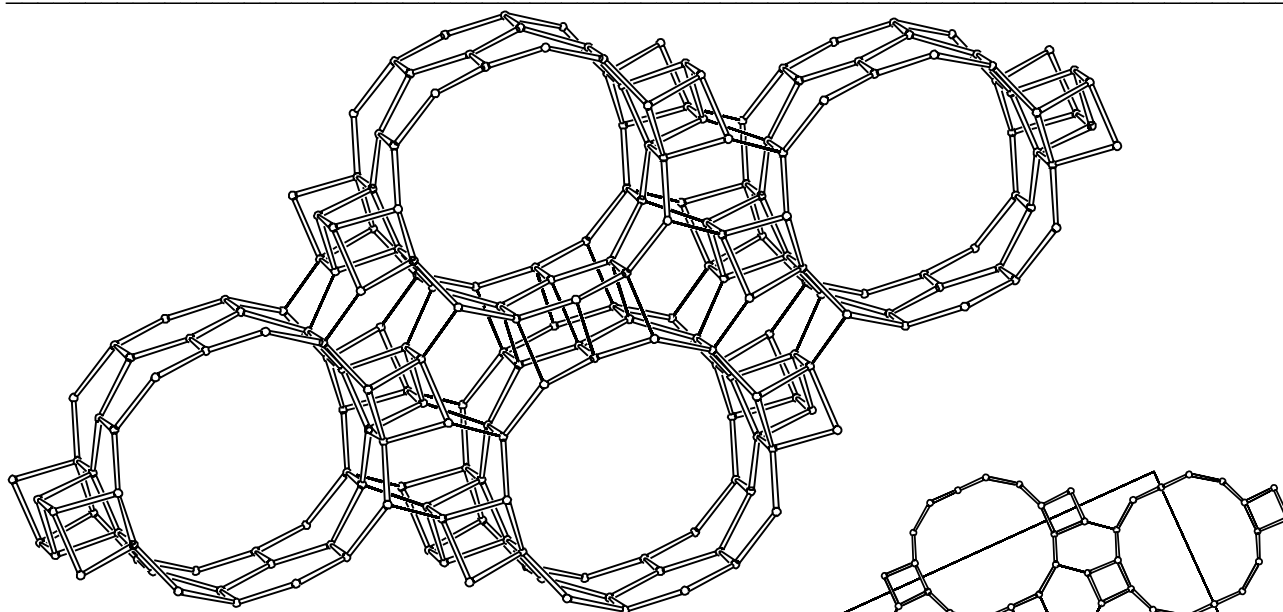


Figure 3. Perspective view (left) and projection (right) along  $c$  of the unit cell content. **AET** can also be built using 4-2 and 4-[1,1] units (or 4-2 and 6 units) in the ratio 1:2, as can be seen from the Figure.

---

### 4. Channels and/or cages:

The non-interconnecting one-dimensional channels in **AET**, parallel to  $c$ , are topologically equivalent to the channels in **DON**. One channel is depicted in Figure 4 together with the **pore descriptor**.

---

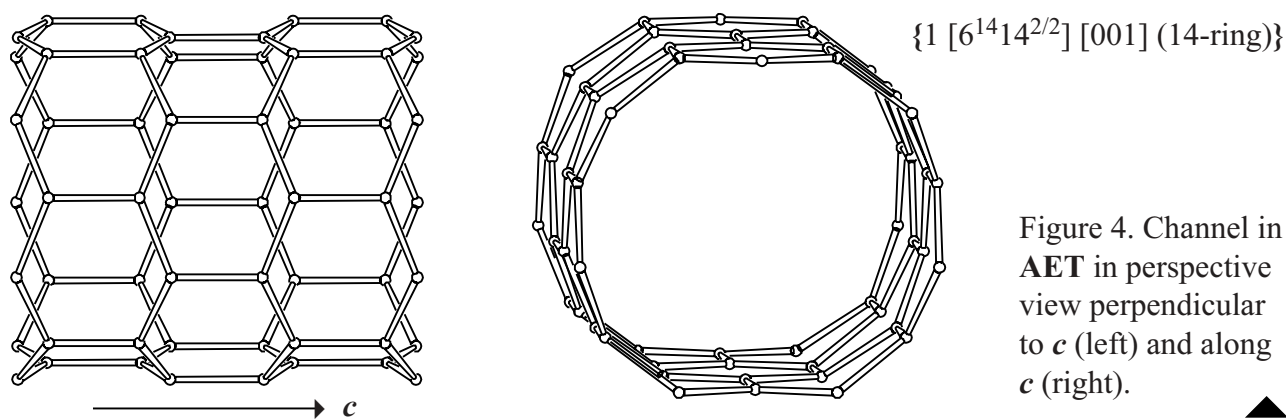


Figure 4. Channel in **AET** in perspective view perpendicular to  $c$  (left) and along  $c$  (right).

---

### 5. Supplementary information:

#### **Other framework types containing crankshaft chains**

In several framework types at least one of the unit cell dimensions is between 8.4 and 9.9 Å. In many cases this indicates the presence of crankshaft chains.

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**).

---