

Building scheme for GON



1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
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1. Periodic Building Unit:

GON can be built using the zigzag chain (bold in Figure 1 (left)) running parallel to c . The repeat distance along the zigzag chain is about 5.2 Å. The repeat unit consists of 2 T atoms. The one-dimensional Periodic Building Unit (PerBU) is obtained when eight zigzag chains are connected into a cylindrical pore with a 12-ring window. The cylinder wall consists of fused 6-rings. [Compare this PerBU with the PerBU in **CFI**, **OSI** and **VET**]. An alternative PerBU consists of 5-3 units (bold in Figure 1 (right)). [See **Alternative description**]

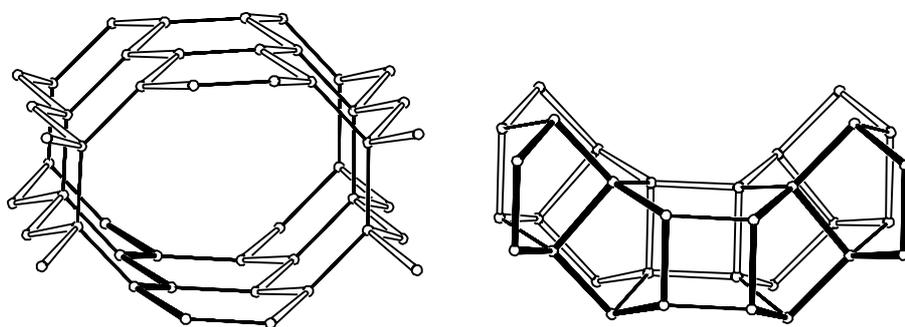


Figure 1. PerBU constructed from eight zigzag chains (left) and PerBU constructed from 5-3 units (right) viewed along c .



2. Connection mode:

Neighboring PerBUs, related along a by pure translations and along b by a shift of $\frac{1}{2}(a + b)$, are connected along a through 6- and 8-rings and along b through (fused) 4-, 5- and 6-rings as illustrated in Fig. 2. Double-layers of (fused) 6-ring chairs and 6-ring boats parallel to (010) are formed.

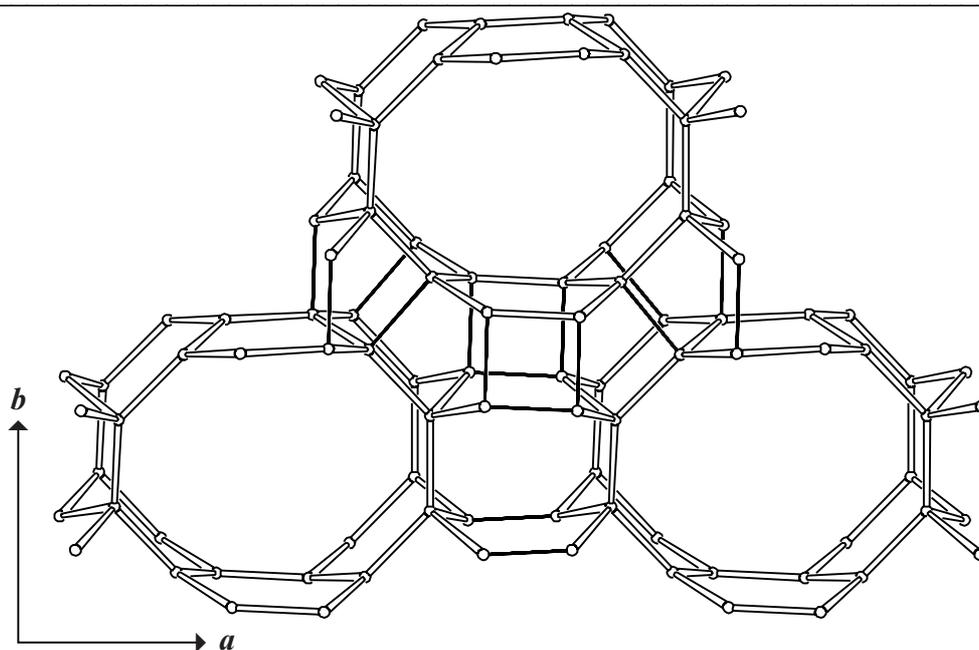


Figure 2. Connection mode in **GON** viewed along c . Only two repeat units of the PerBUs are drawn for clarity.



3. Projections of the unit cell content:

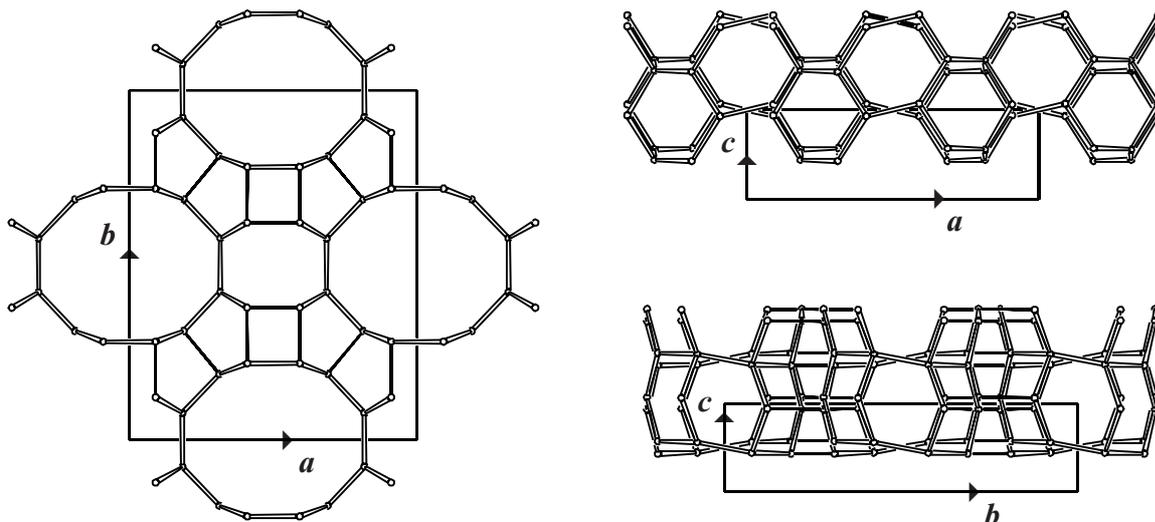


Figure 3. Unit cell content projected along c (left), along b (top right) and along a (bottom right).



4. Channels and/or cages:

Channels with 8- and 12-ring windows are parallel to c . The 12-ring channel is topologically equal to the channel in **MTW**. Both channel walls consist of fused 6-rings as depicted in Figure 4. The **pore descriptors** are added. The fusion of the channels is illustrated in Figure 5.

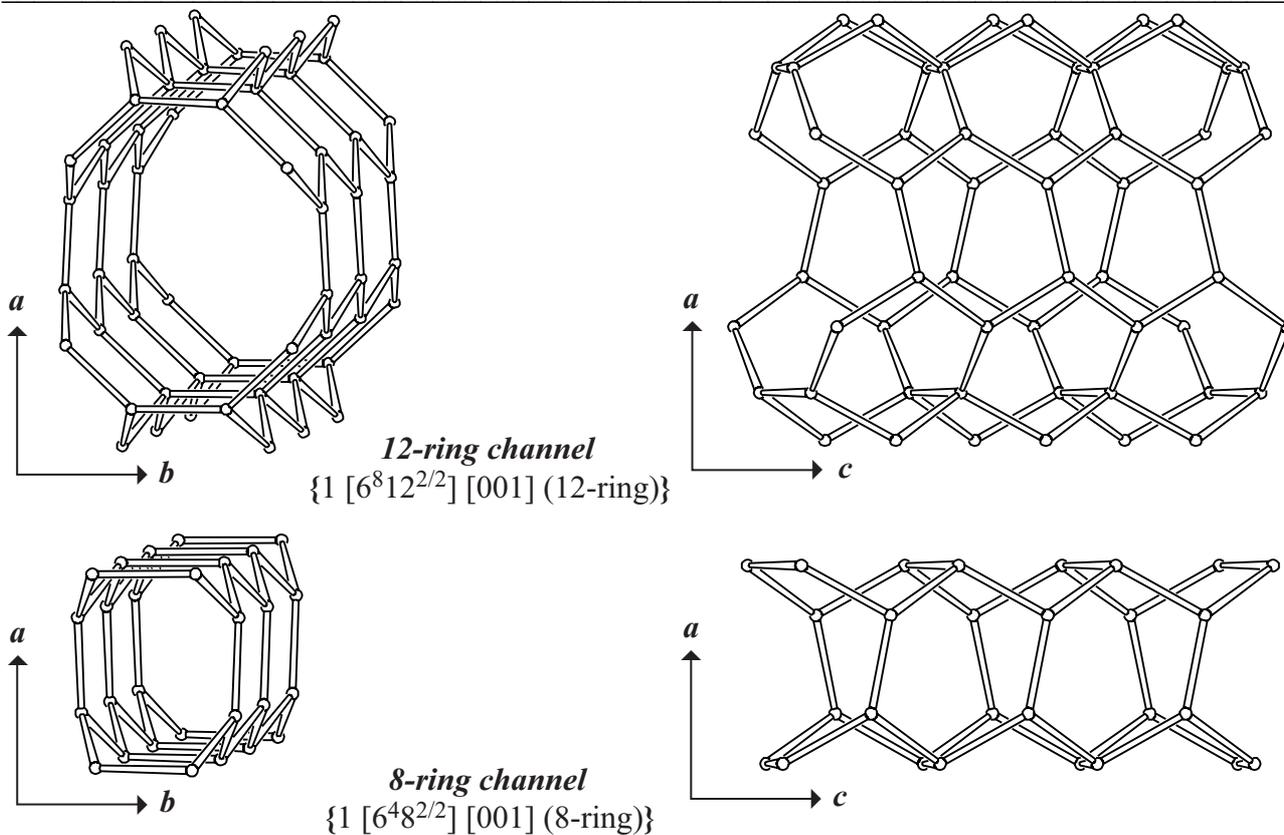


Figure 4. 12-Ring channel (top) and 8-ring channel (bottom) viewed along c (left) and along b (right) [Figure 5 is on next page].

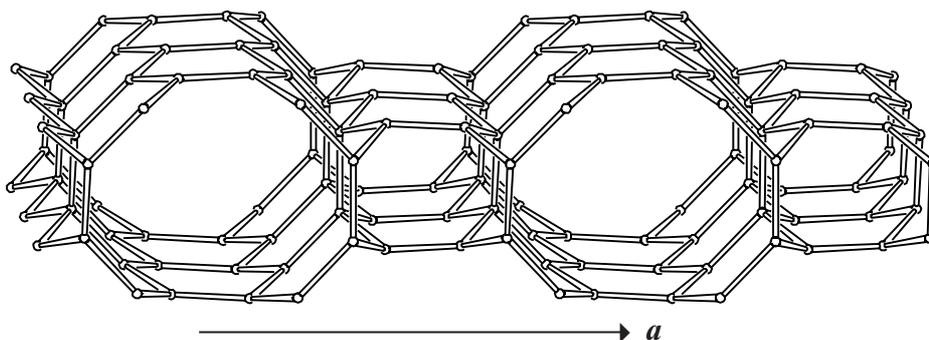


Figure 5. Fused channels viewed along c . The fused channel system can be described as a double layer of (fused) 6-ring chairs and 6-ring boats. ▲

5. Supplementary information:

In several framework types at least one of the unit cell dimensions is about $n \cdot 5.2 \text{ \AA}$ (where $n = 1, 2, 3, \text{ etc.}$). In many cases this indicates the presence of zigzag chains.

In the [INTRO](#) pages links are given to detailed descriptions of these framework types (choose: **Zigzag chains**). There is also a link to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 1**).

Alternative description using (modified) 5-rings

Several framework types, like **GON**, can be constructed using (modified) 5-rings.

In the [INTRO](#) pages links are given to detailed descriptions of these framework types (choose: **5-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 6**). ▲