

Building scheme for MTW



- 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:

MTW can be built using the zigzag (zz) chain (bold in Fig. 1(a); left) running parallel to b . The repeat distance along the zigzag chain is about 5.2 Å. The repeat unit consists of 2 T atoms. Seven zz chains are connected into an infinite building unit (Figure 1(a)). This infinite building unit can also be built using 5-[1,1] units (bold in Figure 1(b); see [Alternative description](#)). A two-dimensional Periodic Building Unit (PerBU) is obtained when infinite building units, related by a translation of $\frac{1}{2}(a + b)$, are connected along a through 4-rings into a double layer shown in Figure 1(c). [Compare this PerBU with the PerBUs in [MTT](#), [TON](#), [SFE](#), [SFH](#), [SFN](#) and [SSY](#)]

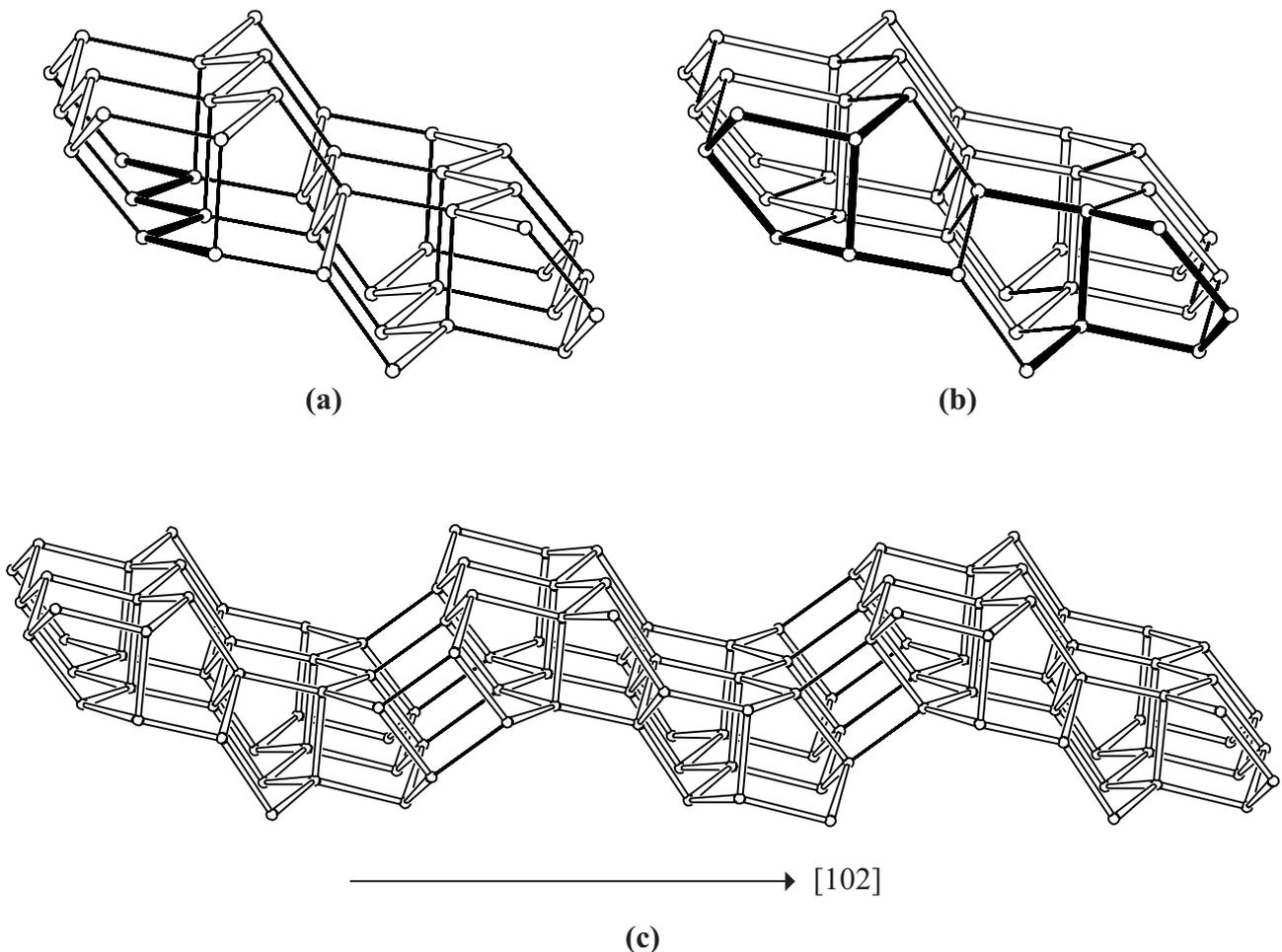


Figure 1. (a): Infinite building unit in **MTW** constructed from seven zz chains (left) and from T14-units (right) seen along the chain axis b ; (b): PerBU constructed from infinite building units. 

2. Connection mode: See next page.

2. Connection mode:

Neighboring PerBUs, related by pure translations along c , are connected along c through 6-rings.

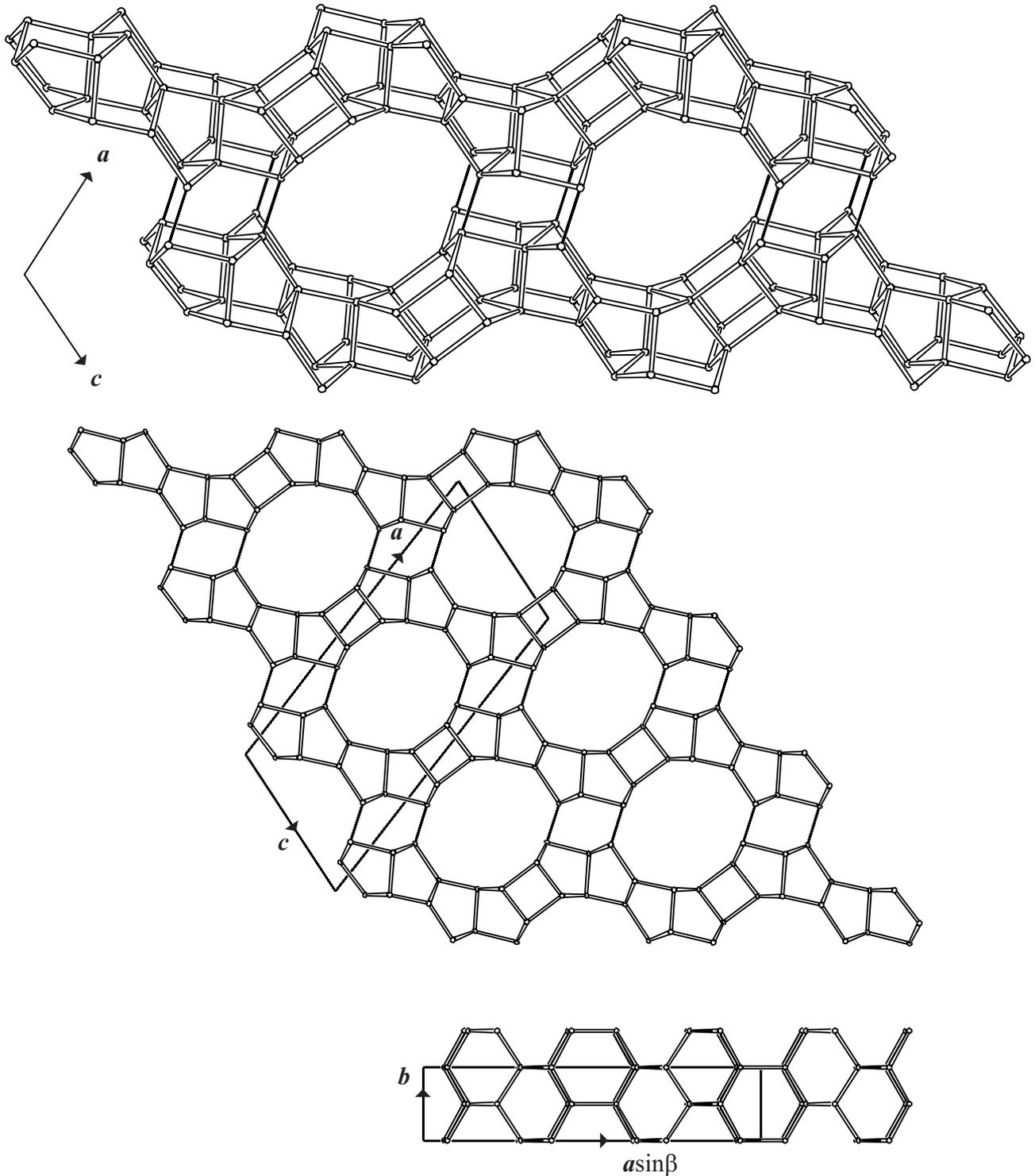


Figure 2. Connection mode in **MTW** (top) viewed along b , and parallel projection of the unit cell content along b and along c (middle and bottom). Only two repeat units of the PerBUs are drawn for clarity. ▲

3. Projections of the unit cell content: See Figure 2. ▲

4. Channels and/or cages:

The channel in **MTW**, depicted in Figure 3, has a 12-ring pore, is parallel to **b** and is topologically equivalent to the channel in **GON**. The **pore descriptor** is added in Figure 3.

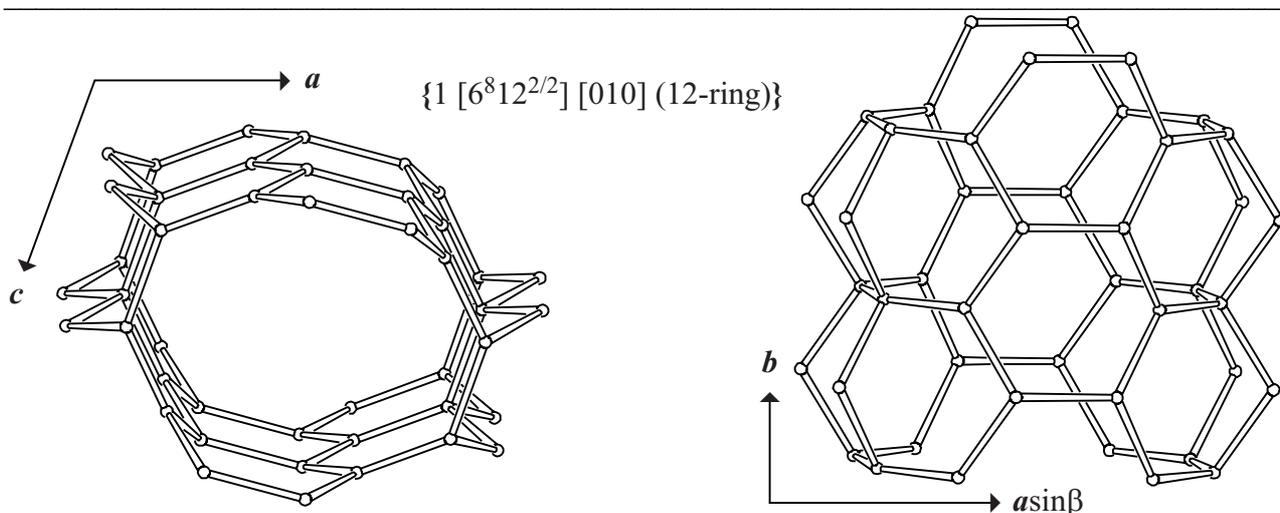


Figure 3. Channel in perspective view along **b** (left) and along **c** (right). ▲

5. Supplementary information:

Other framework types containing zigzag chains

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 **MTW**, 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**). ▲