1. Periodic Building Unit:

MON can be built using 4-rings. The Periodic Building Unit (PerBU) equals the 4-ring layer depicted in Figure 1. The 4 rings (one in bold) are related by pure translations along \(a\), and \(b\).

![Figure 1. PerBU viewed down \(c\) (left), down \(a\) (top right), and along \(b\) (bottom right). The PerBUs, depicted at the right, are identical and related by a rotation of 90º about \(c\) or by a mirror operation perpendicular to \(c\).](image)

2. Connection mode:

Neighboring PerBUs, related by a rotation of 90º about \(c\), accompanied by a lateral shift of \(\frac{1}{2}a\) or \(\frac{1}{2}b\), are connected along \(c\) through 5-rings as shown in Figure 2. The connectivity codes are denoted as \((\frac{1}{2}, 0)\) or \((0, \frac{1}{2})\) depending on whether the lateral shift is along \(a\) or \(b\). [Compare this connection mode with those in LOV, VSV and RSN].

![Figure 2. Connection mode viewed along \(a\) (left), and parallel projections of the unit cell content viewed along \(b\) (top left) and along \(a\) (top right). The lateral shifts between neighboring (mirror related) PerBUs along \(c\) are given in fractions of \((a, b)\).](image)
3. Projections of the unit cell content: See Figure 2.

4. Channels and/or cages:

In tetragonal MON, (equal) interconnected 8-ring channels are parallel to <100>. One channel is depicted in Figure 3. The pore descriptor is added. The channel is topologically equivalent to the connecting cavity 2 in LOV. The fusion of channels is illustrated in Figure 4.

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Figure 3. 8-Ring channel in MON viewed perpendicular to the channel axis (left) and along the channel axis (right).

{1[5^48^2^2/2] <100> (8-ring)}

Figure 4. Connection of channels along c viewed along a (left) and along b (right). [Only one repeat unit along the channels are drawn]

5. Supplementary information:

**Other framework types containing (modified) single 3- and/or 4-rings**

Single 3- and/or 4-rings can be connected in several other ways. In several cases 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) single 3- and/or 4-rings (choose: Single 3- and/or 4-rings). 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 4).