1.3. GENERAL INTRODUCTION TO SPACE GROUPS

A space group in the hexagonal crystal family belongs to either the trigonal or the hexagonal crystal system and to either the rhombohedral or the hexagonal lattice system. A group in the hexagonal crystal system cannot belong to the rhombohedral lattice system, but all other combinations of crystal system and lattice system are possible. The distribution of the space groups in the hexagonal crystal family over these different combinations is displayed in Table 1.3.4.3.

Remark: Up to dimension 3 it seems exceptional that a crystal family contains more than one crystal system, since the only instance of this phenomenon is the hexagonal crystal family consisting of the trigonal and the hexagonal crystal systems. However, in higher dimensions it actually becomes rare that a crystal family consists only of a single crystal system.

For the space groups within one crystal family the same coordinate system is usually used, which is called the *conventional coordinate system* (for this crystal family). However, depending on the application it may be useful to work with a different coordinate system. To avoid confusion, it is recommended to state explicitly when a coordinate system differing from the conventional coordinate system is used.

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