

line repetition groups

The possible symmetries of arrays extending in one direction with a fixed repeating distance. Linear polymer chains in the crystalline state must belong to one of the line repetition groups. Permitted symmetry elements are: the identity operation (symbol 1); the translation along the chain axis (symbol t); the mirror plane orthogonal to the chain axis (symbol m) and that containing the chain axis (symbol d); the glide plane containing the chain axis (symbol c); the inversion centre, placed on the chain axis (symbol i); the two-fold axis orthogonal to the chain axis (symbol 2); the helical, or screw, symmetry where the axis of the helix coincides with the chain axis. In the latter case, the symbol is $s(A * M / N)$, where s stands for the screw axis, A is the class of the helix, $*$ and $/$ are separators, and M is the integral number of residues contained in N turns, corresponding to the identity period (M and N must be prime to each other). The class index A may be dropped if deemed unnecessary, so that the helix may also be simply denoted as $s(M / N)$.

Source:

Purple Book, p. 79