The borides of the platinum metals are closely related, and many phases crystallise in the same structure type. However, they differ structurally from the borides of the earlier transition group metals, particularly in the following two respects: first, some platinum metal borides (e.g. Pd_3B, Pd_5B_2, Ru_7B_3, Rh_7B_3) are structurally closely related to carbides while this does not apply to borides of metals in groups IVa, Va and VIa. Secondly, by comparison with the radius sum, the shortest distances between unlike atoms in platinum metal borides are, in general, considerably shorter than is the case for borides of the earlier transition group metals. Analogous observations can be made for silicides and phosphides.

The origin of the rather marked structural differences between borides, silicides and phosphides of the platinum metals, on the one hand, and the corresponding phases of the earlier transition group metals on the other, cannot be satisfactorily explained at present. Clearly, they are not solely dependent on differences in the radius ratio, but are intimately connected with the nature of chemical bonding in these compounds.

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