

# Forms of Hybridization

Initial atomic orbitals	Changes in orbital configuration	Hybrid orbitals of central atom	Example
$s, p$			$\text{BeH}_2$
$s, p, p$			$\text{BCl}_3$
$s, p, p, p$			$\text{CH}_4$

**Notes:**

1. The number of hybrid orbitals can be readily obtained from the designation; e.g.,  $sp^3$  means  $s^1p^3$ , which means  $1 + 3 = 4$  orbitals.
2. The empty boxes for the  $p$  orbitals mean an unfilled or empty orbital for all of the examples given. For other examples you will see later, these empty  $p$  orbitals may be occupied.