

## Answer on Question#67438 – Chemistry | Inorganic Chemistry

1,4-C<sub>6</sub>H<sub>4</sub>Cl<sub>2</sub>, D<sub>2h</sub>, h = 2

E = 3, C<sub>2</sub> = -1, i = -3, σ = 1

	E	C <sub>2</sub> (z)	C <sub>2</sub> (y)	C <sub>2</sub> (x)	i	σ(xy)	σ(xz)	σ(yz)
Non-shifted atoms	12	0	0	4	0	12	4	0
Contribution per atom	3	-1	-1	-1	-3	1	1	1
Non-shifted atoms· Contribution per atom	36	0	0	-4	0	12	4	0

$$A_g = 1/8(36 - 4 + 12 + 4) = 6$$

$$B_{1g} = 1/8(36 + 4 + 12 - 4) = 6$$

$$B_{2g} = 1/8(36 + 4 - 12 + 4) = 4$$

$$B_{3g} = 1/8(36 - 4 - 12 - 4) = 2$$

$$A_u = 1/8(36 - 4 - 12 - 4) = 2$$

$$B_{1u} = 1/8(36 + 4 - 12 + 4) = 4$$

$$B_{2u} = 1/8(36 + 4 + 12 - 4) = 6$$

$$B_{3u} = 1/8(36 - 4 + 12 + 4) = 6$$

$$\Gamma = 6A_g + 6B_{1g} + 4B_{2g} + 2B_{3g} + 2A_u + 4B_{1u} + 6B_{2u} + 6B_{3u}$$