

* character table

D_4	1(1)	$2_{001}(1)$	$2_{100}(2)$	$2_{110}(2)$	$4_{001}^+(2)$
A_1	1	1	1	1	1
A_2	1	1	-1	-1	1
B_1	1	1	1	-1	-1
B_2	1	1	-1	1	-1
E	2	-2	0	0	0

* polar \leftrightarrow axial conversion

$$A_1 (A_1) \quad B_1 (B_1) \quad E (E) \quad A_2 (A_2) \quad B_2 (B_2)$$

* symmetric product

	A_1	A_2	B_1	B_2	E
A_1	A_1	A_2	B_1	B_2	E
A_2		A_1	B_2	B_1	E
B_1			A_1	A_2	E
B_2				A_1	E
E					$A_1 + B_1 + B_2$

* anti-symmetric product

A_1	A_2	B_1	B_2	E
-	-	-	-	A_2