* character table

D_3	$1(1)$	$2_{100}(3)$	$3^+_{001}(2)$
A_1	1	1	1
A_2	1	-1	1
E	2	0	-1

* polar ↔ axial conversion

$A_1\ (A_1)$ $A_2\ (A_2)$ $E\ (E)$

* symmetric product

	A_1	A_2	E
A_1	A_1	A_2	E
A_2		A_1	E
E			$A_1 + E$

* anti-symmetric product

A_1	A_2	E
$-$	$-$	A_2