* character table

S_4	$1(1)$	$2_{001}(1)$	$-4^+_{001}(2)$
A	1	1	1
B	1	1	-1
E	2	-2	0

* polar ↔ axial conversion

$A\ (B)$ $B\ (A)$ $E\ (E)$

* symmetric product

	A	B	E
A	A	B	E
B		A	E
E			$2A+B$

* anti-symmetric product

A	B	E
–	–	B