

* character table

C_{3i}	1(1)	$3^+_{001}(2)$	$-1(1)$	$-3^+_{001}(2)$
A_g	1	1	1	1
E_g	2	-1	2	-1
A_u	1	1	-1	-1
E_u	2	-1	-2	1

* polar \leftrightarrow axial conversion

$$A_g \ (A_u) \quad E_g \ (E_u) \quad A_u \ (A_g) \quad E_u \ (E_g)$$

* symmetric product

	A_g	E_g	A_u	E_u
A_g	A_g	E_g	A_u	E_u
E_g		$A_g + E_g$	E_u	$2A_u + E_u$
A_u			A_g	E_g
E_u				$A_g + E_g$

* anti-symmetric product

A_g	E_g	A_u	E_u
-	A_g	-	A_g