The group G is isomorphic to the group labelled by [168, 42] in the Small Groups library.
Ordinary character table of $G \cong$ PSL(3,2):

	$1a$	$2a$	$3a$	$4a$	$7a$	$7b$
χ_1	1	1	1	1	1	1
χ_2	3	-1	0	1	$E(7)+E(7)^2+E(7)^4$	$E(7)^3+E(7)^5+E(7)^6$
χ_3	3	-1	0	1	$E(7)^3+E(7)^5+E(7)^6$	$E(7)+E(7)^2+E(7)^4$
χ_4	6	2	0	0	-1	-1
χ_5	7	-1	1	-1	0	0
χ_6	8	0	-1	0	1	1

Trivial source character table of $G \cong$ PSL(3,2) at $p = 2$:

Normalisers N_i	N_1				N_2	N_3		N_4		N_5	N_6
p-subgroups of G up to conjugacy in G	P_1				P_2	P_3		P_4		P_5	P_6
Representatives $n_j \in N_i$	$1a$	$3a$	$7a$	$7b$	$1a$	$1a$	$3a$	$1a$	$3a$	$1a$	$1a$
$1\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+0\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	8	2	1	1	0	0	0	0	0	0	0
$0\cdot\chi_1+1\cdot\chi_2+0\cdot\chi_3+1\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	16	1	$2*E(7)+2*E(7)^2+E(7)^3+2*E(7)^4+E(7)^5+E(7)^6$	$E(7)+E(7)^2+2*E(7)^3+E(7)^4+2*E(7)^5+2*E(7)^6$	0	0	0	0	0	0	0
$0\cdot\chi_1+0\cdot\chi_2+1\cdot\chi_3+1\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	16	1	$E(7)+E(7)^2+2*E(7)^3+E(7)^4+2*E(7)^5+2*E(7)^6$	$2*E(7)+2*E(7)^2+E(7)^3+2*E(7)^4+E(7)^5+E(7)^6$	0	0	0	0	0	0	0
$0\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+0\cdot\chi_4+0\cdot\chi_5+1\cdot\chi_6$	8	-1	1	1	0	0	0	0	0	0	0
$1\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+2\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	20	2	-1	-1	4	0	0	0	0	0	0
$1\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+1\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	14	2	0	0	2	2	2	0	0	0	0
$0\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+1\cdot\chi_4+0\cdot\chi_5+0\cdot\chi_6$	6	0	-1	-1	2	2	-1	0	0	0	0
$1\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+1\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	14	2	0	0	2	0	0	2	2	0	0
$0\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+1\cdot\chi_4+0\cdot\chi_5+0\cdot\chi_6$	6	0	-1	-1	2	0	0	2	-1	0	0
$1\cdot\chi_1+1\cdot\chi_2+1\cdot\chi_3+2\cdot\chi_4+1\cdot\chi_5+0\cdot\chi_6$	26	2	-2	-2	2	0	0	0	0	2	0
$1\cdot\chi_1+0\cdot\chi_2+0\cdot\chi_3+0\cdot\chi_4+0\cdot\chi_5+0\cdot\chi_6$	1	1	1	1	1	1	1	1	1	1	1

$P_1 = Group([()]) \cong 1$
$P_2 = Group([(2,3)(6,7)]) \cong$ C2
$P_3 = Group([(4,5)(6,7),(2,3)(6,7)]) \cong$ C2 x C2
$P_4 = Group([(4,6)(5,7),(4,5)(6,7)]) \cong$ C2 x C2
$P_5 = Group([(2,3)(4,7,5,6),(4,5)(6,7)]) \cong$ C4
$P_6 = Group([(4,5)(6,7),(2,3)(6,7),(4,6)(5,7)]) \cong$ D8

$N_1 = Group([(2,4)(3,5),(1,2,3)(5,6,7)]) \cong$ PSL(3,2)
$N_2 = Group([(2,3)(6,7),(4,5)(6,7),(2,3)(4,5),(2,6)(3,7)]) \cong$ D8
$N_3 = Group([(2,3)(6,7),(4,5)(6,7),(4,7)(5,6),(2,4,7)(3,5,6)]) \cong$ S4
$N_4 = Group([(4,5)(6,7),(4,6)(5,7),(1,3)(5,7),(1,2)(5,6)]) \cong$ S4
$N_5 = Group([(2,3)(4,7,5,6),(4,5)(6,7),(2,3)(6,7)]) \cong$ D8
$N_6 = Group([(4,6)(5,7),(2,3)(6,7),(4,5)(6,7)]) \cong$ D8