

$S_4(5).2 \pmod{3}$

	blocks	defect	matrix
$G :$	1	2	9×5
	2	2	9×5
	3	2	9×4
	4	1	3×2
	5	0	$90_1 = \chi_{9,0}, \varphi_{9,0}$
	6	0	$90_2 = \chi_{9,1}, \varphi_{9,1}$
	7	1	3×2
	8	1	3×2
	9	1	3×1
	10	0	$576_1 = \chi_{28,0}, \varphi_{19,0}$
	11	0	$576_2 = \chi_{28,1}, \varphi_{19,1}$
	12	0	$576_3 = \chi_{29,0}, \varphi_{20,0}$
	13	0	$576_4 = \chi_{29,1}, \varphi_{20,1}$
	14	0	$576_5 = \chi_{30,0}, \varphi_{21,0}$

	blocks	defect	matrix
	15	0	$576_6 = \chi_{30,1}, \varphi_{21,1}$
$2.G :$	16	1	3×2
	17	2	9×2
	18	1	3×2
	19	1	3×2
	20	0	$936_1 = \chi_{50+}, \varphi_{32+}$
	21	0	$576_7 = \chi_{53,0}, \varphi_{34,0}$
	22	0	$576_8 = \chi_{53,1}, \varphi_{34,1}$
	23	0	$576_9 = \chi_{54,0}, \varphi_{35,0}$
	24	0	$576_{10} = \chi_{54,1}, \varphi_{35,1}$
	25	0	$576_{11} = \chi_{55,0}, \varphi_{36,0}$
	26	0	$576_{12} = \chi_{55,1}, \varphi_{36,1}$
	27	1	3×1
	28	1	3×1

Block 1:	$\varphi_{1,0}$	$\varphi_{4,1}$	$\varphi_{5,0}$	$\varphi_{6,1}$	$\varphi_{18,1}$
$1_1 = \chi_{1,0}$	1	.	.	.	.
$40_2 = \chi_{4,1}$	.	1	.	.	.
$65_1 = \chi_{5,0}$	1	.	1	.	.
$65_4 = \chi_{6,1}$	1	.	.	1	.
$104_1 = \chi_{10,0}$	.	1	1	.	.
$104_6 = \chi_{12,1}$	.	1	.	1	.
$520_2 = \chi_{25,1}$	.	.	1	.	1
$520_4 = \chi_{26,1}$	.	.	.	1	1
$625_2 = \chi_{33,1}$	1	1	1	1	1

$$\begin{aligned}
 \varphi_{1,0} &= 1_1 \\
 \varphi_{4,1} &= 40_2 \\
 \varphi_{5,0} &= 64_1 \\
 \varphi_{6,1} &= 64_4 \\
 \varphi_{18,1} &= 456_2
 \end{aligned}$$

Block 2:	$\varphi_{1,1}$	$\varphi_{4,0}$	$\varphi_{5,1}$	$\varphi_{6,0}$	$\varphi_{18,0}$
$1_2 = \chi_{1,1}$	1	.	.	.	.
$40_1 = \chi_{4,0}$	.	1	.	.	.
$65_2 = \chi_{5,1}$	1	.	1	.	.
$65_3 = \chi_{6,0}$	1	.	.	1	.
$104_2 = \chi_{10,1}$	.	1	1	.	.
$104_5 = \chi_{12,0}$	.	1	.	1	.
$520_1 = \chi_{25,0}$	.	.	1	.	1
$520_3 = \chi_{26,0}$	.	.	.	1	1
$625_1 = \chi_{33,0}$	1	1	1	1	1

$$\begin{aligned}
 \varphi_{1,1} &= 1_2 \\
 \varphi_{4,0} &= 40_1 \\
 \varphi_{5,1} &= 64_2 \\
 \varphi_{6,0} &= 64_3 \\
 \varphi_{18,0} &= 456_1
 \end{aligned}$$

Block 3:	φ_{2+}	$\varphi_{10,0}$	$\varphi_{10,1}$	φ_{12+}	
$26_1 = \chi_{2+}$	1	.	.	.	
$104_3 = \chi_{11,0}$	.	1	.	.	
$104_4 = \chi_{11,1}$	.	.	1	.	$\varphi_{2+} = 26_1$
$130_1 = \chi_{13,0}$	1	1	.	.	$\varphi_{10,0} = 104_1$
$130_2 = \chi_{13,1}$	1	.	1	.	$\varphi_{10,1} = 104_2$
$416_1 = \chi_{15+}$	.	.	.	1	$\varphi_{12+} = 416_1$
$650_1 = \chi_{21+}$	1	1	1	1	
$520_5 = \chi_{27,0}$	.	1	.	1	
$520_6 = \chi_{27,1}$	.	.	1	1	

Block 4:	φ_{7+}	φ_{14+}	
$156_1 = \chi_{7+}$	1	.	$\varphi_{7+} = 156_1$
$624_1 = \chi_{17+}$	.	1	$\varphi_{14+} = 624_1$
$780_1 = \chi_{23+}$	1	1	

Block 7:	$\varphi_{11,0}$	$\varphi_{22,1}$	
$156_2 = \chi_{14,0}$	1	.	$\varphi_{11,0} = 156_2$
$624_4 = \chi_{31,1}$	.	1	$\varphi_{22,1} = 624_4$
$780_3 = \chi_{34,1}$	1	1	

Block 8:	$\varphi_{11,1}$	$\varphi_{22,0}$	
$156_3 = \chi_{14,1}$	1	.	$\varphi_{11,1} = 156_3$
$624_3 = \chi_{31,0}$	.	1	$\varphi_{22,0} = 624_3$
$780_2 = \chi_{34,0}$	1	1	

Block 9:	φ_{16+}	
$624_2 = \chi_{19+}$	1	$\varphi_{16+} = 624_2$
$624_5 = \chi_{32,0}$	1	
$624_6 = \chi_{32,1}$	1	

Block 16:	φ_{23+}	φ_{30+}	
$24_1 = \chi_{35+}$	1	.	$\varphi_{23+} = 24_1$
$600_1 = \chi_{45+}$	.	1	$\varphi_{30+} = 600_1$
$624_7 = \chi_{47+}$	1	1	

Block 17:	φ_{25+}	φ_{28+}	
$104_7 = \chi_{37+}$	1	.	
$104_8 = \chi_{39,0}$	1	.	
$104_9 = \chi_{39,1}$	1	.	
$416_2 = \chi_{41+}$	.	1	$\varphi_{25+} = 104_3$
$520_7 = \chi_{43+}$	1	1	$\varphi_{28+} = 416_2$
$416_3 = \chi_{49,0}$	.	1	
$416_4 = \chi_{49,1}$	.	1	
$520_8 = \chi_{52,0}$	1	1	
$520_9 = \chi_{52,1}$	1	1	

Block 18:	$\varphi_{27,0}$	$\varphi_{37,0}$	
$156_4 = \chi_{40,0}$	1	.	$\varphi_{27,0} = 156_4$
$624_8 = \chi_{56,0}$	.	1	$\varphi_{37,0} = 624_5$
$780_4 = \chi_{60,0}$	1	1	

Block 19:	$\varphi_{27,1}$	$\varphi_{37,1}$	
$156_5 = \chi_{40,1}$	1	.	$\varphi_{27,1} = 156_5$
$624_9 = \chi_{56,1}$	.	1	$\varphi_{37,1} = 624_6$
$780_5 = \chi_{60,1}$	1	1	

Block 27:	$\varphi_{38,0}$	
$624_{10} = \chi_{57,0}$	1	$\varphi_{38,0} = 624_7$
$624_{12} = \chi_{58,0}$	1	
$624_{14} = \chi_{59,0}$	1	

Block 28:	$\varphi_{38,1}$
$624_{11} = \chi_{57,1}$	1
$624_{13} = \chi_{58,1}$	1
$624_{15} = \chi_{59,1}$	1

$$\varphi_{38,1} = 624_8$$