$S_9 \pmod 7$

	blocks	defect	matrix
$G:$	1	1	7×6
	2	1	7×6
	3	0	$42_1 = \chi_{3+}, \varphi_{4+}$
	4	0	$28_1 = \chi_{6,0}, \varphi_{6,0}$
	5	0	$28_2 = \chi_{6,1}, \varphi_{6,1}$
	6	0	$70_1 = \chi_{7+}, \varphi_{7+}$
	7	0	$42_2 = \chi_{9,0}, \varphi_{9,0}$
	8	0	$42_3 = \chi_{9,1}, \varphi_{9,1}$
	9	0	$56_1 = \chi_{11,0}, \varphi_{11,0}$
	10	0	$56_2 = \chi_{11,1}, \varphi_{11,1}$
	11	0	$84_1 = \chi_{12,0}, \varphi_{12,0}$
	12	0	$84_2 = \chi_{12,1}, \varphi_{12,1}$
	13	0	$105_1 = \chi_{13,0}, \varphi_{14,0}$
	14	0	$105_2 = \chi_{13,1}, \varphi_{14,1}$
	15	0	$168_1 = \chi_{16,0}, \varphi_{16,0}$
	16	0	$168_2 = \chi_{16,1}, \varphi_{16,1}$
	17	0	$189_1 = \chi_{17,0}, \varphi_{17,0}$
	18	0	$189_2 = \chi_{17,1}, \varphi_{17,1}$
$2.G:$	19	1	5×3
	20	0	$56_3 = \chi_{23,0}, \varphi_{22,0}$
	$21 = \overline{20}$	0	$56_4 = \chi_{23,1}, \varphi_{22,1}$
	22	0	$112_1 = \chi_{24,0}, \varphi_{25,0}$
	$23 = \overline{22}$	0	$112_2 = \chi_{24,1}, \varphi_{25,1}$
	24	0	$336_1 = \chi_{28+}, \varphi_{26+}$
	25	0	$224_1 = \chi_{30,0}, \varphi_{28,0}$
	$26 = \overline{25}$	0	$224_2 = \chi_{30,1}, \varphi_{28,1}$

Block 1:	$\varphi_{1,0}$	$\varphi_{2,1}$	$\varphi_{3,1}$	$\varphi_{10,0}$	$\varphi_{13,1}$	$\varphi_{15,0}$
$1_1 = \chi_{1,0}$	1	.	.	.	.	.
$8_2 = \chi_{2,1}$	.	1	.	.	.	.
$27_2 = \chi_{5,1}$	.	1	1	.	.	.
$48_1 = \chi_{10,0}$	1	.	.	1	.	.
$120_2 = \chi_{14,1}$	.	.	1	.	1	.
$162_1 = \chi_{15,0}$	.	.	.	1	.	1
$216_1 = \chi_{18,0}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{1,0} &= 1_1 \\ \varphi_{2,1} &= 8_2 \\ \varphi_{3,1} &= 19_2 \\ \varphi_{10,0} &= 47_1 \\ \varphi_{13,1} &= 101_2 \\ \varphi_{15,0} &= 115_1 \end{aligned}$$

Block 2:	$\varphi_{1,1}$	$\varphi_{2,0}$	$\varphi_{3,0}$	$\varphi_{10,1}$	$\varphi_{13,0}$	$\varphi_{15,1}$
$1_2 = \chi_{1,1}$	1	.	.	.	.	.
$8_1 = \chi_{2,0}$	.	1	.	.	.	.
$27_1 = \chi_{5,0}$	.	1	1	.	.	.
$48_2 = \chi_{10,1}$	1	.	.	1	.	.
$120_1 = \chi_{14,0}$	.	.	1	.	1	.
$162_2 = \chi_{15,1}$	.	.	.	1	.	1
$216_2 = \chi_{18,1}$	.	.	.	.	1	1

$$\begin{aligned} \varphi_{1,1} &= 1_2 \\ \varphi_{2,0} &= 8_1 \\ \varphi_{3,0} &= 19_1 \\ \varphi_{10,1} &= 47_2 \\ \varphi_{13,0} &= 101_1 \\ \varphi_{15,1} &= 115_2 \end{aligned}$$

Block 19:	φ_{18+}	φ_{20+}	φ_{23+}
$16_1 = \chi_{19+}$	1	.	.
$96_1 = \chi_{21+}$	.	1	.
$240_1 = \chi_{25+}$	.	1	1
$160_1 = \chi_{27,0}$	1	.	1
$160_2 = \chi_{27,1}$	1	.	1

$\varphi_{18+} = 16_1$
$\varphi_{20+} = 96_1$
$\varphi_{23+} = 144_1$