T_1 3.0 T measurements, performed at NIST
T_1 1.5 T measurements performed at CMRI

Table 1. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 20°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	1883.97	30.32	1489.41	20.41
T_1-2	0.60	1330.16	20.41	1026.78	13.03
T_1-3	1.04	987.27	14.22	736.97	9.32
T_1-4	1.64	690.08	10.12	521.27	6.57
T_1-5	2.52	484.97	7.06	354.38	4.51
T_1-6	3.68	341.58	4.97	248.03	3.14
T_1-7	5.43	240.86	3.51	174.99	2.20
T_1-8	7.74	174.95	2.48	126.33	1.55
T_1-9	11.3	121.08	1.75	86.91	1.09
T_1-10	16.5	85.75	1.24	60.86	0.77
T_1-11	23.3	60.21	0.87	42.44	0.54
T_1-12	32.7	42.89	0.44	30.66	0.27
T_1-13	46.0	30.40	0.62	21.76	0.38
T_1-14	65.3	21.44	0.31	15.30	0.19

Contrast sphere numbering is as appears when the phantom is viewed inferiorly

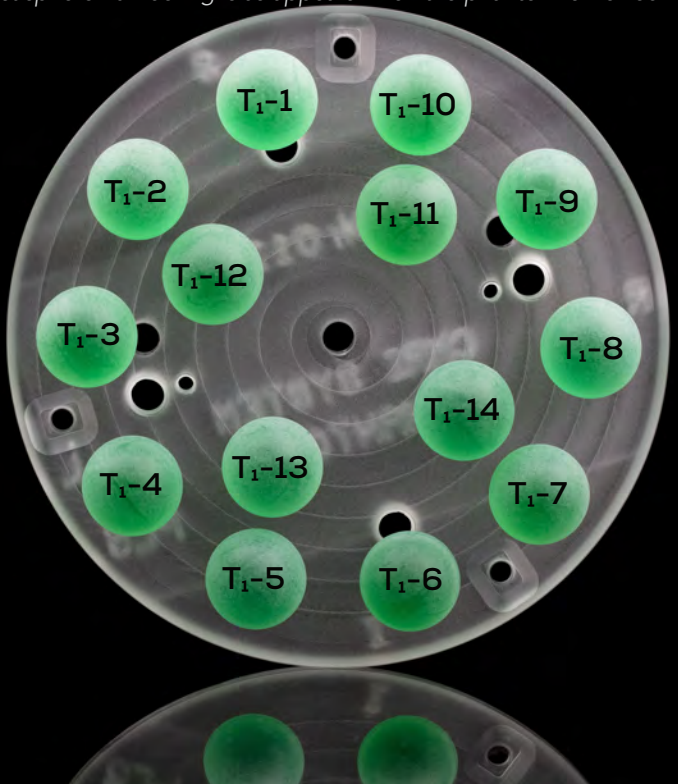

Table 2. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 16°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	1766.68	28.54	1348.91	18.96
T_1-2	0.60	1274.07	19.44	990.77	12.88
T_1-3	1.04	950.71	13.82	731.7	9.09
T_1-4	1.64	675.07	9.94	519.26	6.45
T_1-5	2.52	483.91	6.95	358.92	4.43
T_1-6	3.68	343	4.93	252.21	3.1
T_1-7	5.43	243.77	3.49	178.68	2.18
T_1-8	7.74	177.68	2.47	129.78	1.54
T_1-9	11.3	122.99	1.75	89.01	1.08
T_1-10	16.5	87.47	1.24	62.36	0.76
T_1-11	23.3	61.49	0.88	43.57	0.54
T_1-12	32.7	43.79	0.44	31.55	0.27
T_1-13	46.0	31.05	0.62	22.37	0.38
T_1-14	65.3	21.94	0.31	15.8	0.19

Table 3. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 18°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	1830.34	29.44	1455.09	19.72
T_1-2	0.60	1317.71	19.97	1010.28	12.99
T_1-3	1.04	963.56	14.02	735.31	9.19
T_1-4	1.64	686.88	10.02	520.94	6.49
T_1-5	2.52	482.91	7.01	355.15	4.46
T_1-6	3.68	341.53	4.94	249.23	3.11
T_1-7	5.43	241.84	3.49	176.11	2.18
T_1-8	7.74	175.94	2.47	127.33	1.54
T_1-9	11.3	121.79	1.75	87.65	1.08
T_1-10	16.5	86.41	1.24	61.6	0.76
T_1-11	23.3	60.7	0.87	42.91	0.54
T_1-12	32.7	43.24	0.44	30.97	0.27
T_1-13	46.0	30.65	0.62	21.99	0.38
T_1-14	65.3	21.62	0.31	15.47	0.19

Table 4. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 22°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	1937.34	28.54	1520.77	18.96
T_1-2	0.60	1355.29	19.44	1040.25	12.88
T_1-3	1.04	1000.81	13.82	744.39	9.09
T_1-4	1.64	695.01	9.94	523.08	6.45
T_1-5	2.52	486.92	6.95	356.14	4.43
T_1-6	3.68	342.58	4.93	248.15	3.1
T_1-7	5.43	240.75	3.49	175.07	2.18
T_1-8	7.74	174.59	2.47	126.49	1.54
T_1-9	11.3	120.8	1.75	86.85	1.08
T_1-10	16.5	85.03	1.24	60.96	0.76
T_1-11	23.3	59.97	0.88	42.42	0.54
T_1-12	32.7	42.72	0.44	30.63	0.27
T_1-13	46.0	30.27	0.62	21.74	0.38
T_1-14	65.3	21.28	0.31	15.22	0.19

Table 5. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 24°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	1987.5	29.44	1532.32	19.72
T_1-2	0.60	1367.79	19.97	1048.13	12.99
T_1-3	1.04	1015.7	14.02	755.94	9.19
T_1-4	1.64	701.06	10.02	528.55	6.49
T_1-5	2.52	490.24	7.01	359.8	4.46
T_1-6	3.68	344.23	4.94	250.05	3.11
T_1-7	5.43	241.31	3.49	176.15	2.18
T_1-8	7.74	174.78	2.47	126.91	1.54
T_1-9	11.3	120.9	1.75	87.27	1.08
T_1-10	16.5	85.01	1.24	61.27	0.76
T_1-11	23.3	60	0.87	42.67	0.54
T_1-12	32.7	42.7	0.44	30.83	0.27
T_1-13	46.0	30.25	0.62	21.84	0.38
T_1-14	65.3	21.26	0.31	15.33	0.19

Table 6. $NiCl_2$ T_1 contrast spheres values at 3.0 T.
Batch #2 T_1 contrast solution used. Measured at 26°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_1 Standard Deviation, SD_{3R} (ms)	T_2 (ms)	T_2 Standard Deviation, SD_{3R} (ms)
T_1-1	0.29	2066.95	30.32	1578.57	20.41
T_1-2	0.60	1395.94	20.41	1067.14	13.03
T_1-3	1.04	1030.78	14.22	768.69	9.32
T_1-4	1.64	709.48	10.12	538.22	6.57
T_1-5	2.52	494.55	7.06	365.21	4.51
T_1-6	3.68	346.67	4.97	253.8	3.14
T_1-7	5.43	242.45	3.51	178.08	2.2
T_1-8	7.74	175.48	2.48	128.28	1.55
T_1-9	11.3	121.34	1.75	88.37	1.09
T_1-10	16.5	85.28	1.24	62.12	0.77
T_1-11	23.3	60.17	0.87	43.22	0.54
T_1-12	32.7	42.8	0.44	30.71	0.27
T_1-13	46.0	30.31	0.62	22.09	0.38
T_1-14	65.3	21.31	0.31	15.49	0.19

Table 7. $NiCl_2$ T_1 contrast spheres values at 1.5 T.
Batch #2 T_1 contrast solution used. Measured at ~20°C.

	Nominal Concentration, $NiCl_2$ (± 5% mM)	T_1 (ms)	T_2 (ms)
T_1-1	0.29	1723.58	1637.31
T_1-2	0.60	1450.54	1362.33
T_1-3	1.04	1010.18	939.03
T_1-4	1.64	671.84	620.95
T_1-5	2.52	467.11	413.15
T_1-6	3.68	333.47	306.77
T_1-7	5.43	235.98	215.96
T_1-8	7.74	169.96	155.16
T_1-9	11.3	117.29	109.13
T_1-10	16.5	81.82	77.21
T_1-11	23.3	57.33	54.23
T_1-12	32.7	40.95	38.88
T_1-13	46.0	29.29	27.86
T_1-14	65.3	20.34	19.47