

SIRTeX

SIR-Spheres®  
Y-90 resin microspheres

# SIR-Spheres® Y-90 resin microspheres Activity Chart



# The Activity You Want. The Coverage You Need.

## DAY FIVE PRE-CALIBRATION\*

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor (e <sup>-0.010814x</sup> )	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere (Bq)
12:00 AM	-138.0	4.447	13.34	360.58	3.3	300
1:00 AM	-137.0	4.399	13.20	356.70	3.4	297
2:00 AM	-136.0	4.352	13.06	352.87	3.4	294
3:00 AM	-135.0	4.305	12.92	349.07	3.4	290
4:00 AM	-134.0	4.259	12.78	345.32	3.5	287
5:00 AM	-133.0	4.213	12.64	341.60	3.5	284
6:00 AM	-132.0	4.168	12.50	337.93	3.6	281
7:00 AM	-131.0	4.123	12.37	334.29	3.6	278
8:00 AM	-130.0	4.079	12.24	330.70	3.6	275
9:00 AM	-129.0	4.035	12.10	327.14	3.7	272
10:00 AM	-128.0	3.991	11.97	323.62	3.7	269
11:00 AM	-127.0	3.948	11.85	320.14	3.8	266
12:00 PM	-126.0	3.906	11.72	316.70	3.8	263
1:00 PM	-125.0	3.864	11.59	313.29	3.8	261
2:00 PM	-124.0	3.822	11.47	309.92	3.9	258
3:00 PM	-123.0	3.781	11.34	306.59	3.9	255
4:00 PM	-122.0	3.741	11.22	303.29	4.0	252
5:00 PM	-121.0	3.700	11.10	300.03	4.0	250
6:00 PM	-120.0	3.661	10.98	296.80	4.1	247
7:00 PM	-119.0	3.621	10.86	293.61	4.1	244
8:00 PM	-118.0	3.582	10.75	290.45	4.1	242
9:00 PM	-117.0	3.544	10.63	287.33	4.2	239
10:00 PM	-116.0	3.506	10.52	284.24	4.2	236
11:00 PM	-115.0	3.468	10.40	281.18	4.3	234

## DAY FOUR PRE-CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor (e <sup>-0.010814x</sup> )	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere (Bq)
12:00 AM	-114.0	3.431	10.29	278.16	4.3	231
1:00 AM	-113.0	3.394	10.18	275.17	4.4	229
2:00 AM	-112.0	3.357	10.07	272.21	4.4	226
3:00 AM	-111.0	3.321	9.96	269.28	4.5	224
4:00 AM	-110.0	3.285	9.86	266.38	4.5	222
5:00 AM	-109.0	3.250	9.75	263.52	4.6	219
6:00 AM	-108.0	3.215	9.65	260.68	4.6	217
7:00 AM	-107.0	3.181	9.54	257.88	4.7	215
8:00 AM	-106.0	3.146	9.44	255.11	4.7	212
9:00 AM	-105.0	3.112	9.34	252.36	4.8	210
10:00 AM	-104.0	3.079	9.24	249.65	4.8	208
11:00 AM	-103.0	3.046	9.14	246.96	4.9	205
12:00 PM	-102.0	3.013	9.04	244.31	4.9	203
1:00 PM	-101.0	2.981	8.94	241.68	5.0	201
2:00 PM	-100.0	2.949	8.85	239.08	5.0	199
3:00 PM	-99.0	2.917	8.75	236.51	5.1	197
4:00 PM	-98.0	2.886	8.66	233.97	5.1	195
5:00 PM	-97.0	2.855	8.56	231.45	5.2	193
6:00 PM	-96.0	2.824	8.47	228.96	5.3	190
7:00 PM	-95.0	2.793	8.38	226.50	5.3	188
8:00 PM	-94.0	2.763	8.29	224.06	5.4	186
9:00 PM	-93.0	2.734	8.20	221.65	5.4	184
10:00 PM	-92.0	2.704	8.11	219.27	5.5	182
11:00 PM	-91.0	2.675	8.03	216.91	5.5	180

## DAY THREE PRE-CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor (e <sup>-0.010814x</sup> )	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere (Bq)
12:00 AM	-90.0	2.646	7.94	214.58	5.6	178
1:00 AM	-89.0	2.618	7.85	212.27	5.7	177
2:00 AM	-88.0	2.590	7.77	209.99	5.7	175
3:00 AM	-87.0	2.562	7.69	207.73	5.8	173
4:00 AM	-86.0	2.534	7.60	205.49	5.9	171
5:00 AM	-85.0	2.507	7.52	203.28	5.9	169
6:00 AM	-84.0	2.480	7.44	201.10	6.0	167
7:00 AM	-83.0	2.454	7.36	198.93	6.0	165
8:00 AM	-82.0	2.427	7.28	196.79	6.1	164
9:00 AM	-81.0	2.401	7.20	194.68	6.2	162
10:00 AM	-80.0	2.375	7.13	192.58	6.2	160
11:00 AM	-79.0	2.350	7.05	190.51	6.3	158
12:00 PM	-78.0	2.324	6.97	188.46	6.4	157
1:00 PM	-77.0	2.299	6.90	186.44	6.4	155
2:00 PM	-76.0	2.275	6.82	184.43	6.5	153
3:00 PM	-75.0	2.250	6.75	182.45	6.6	152
4:00 PM	-74.0	2.226	6.68	180.49	6.7	150
5:00 PM	-73.0	2.202	6.61	178.54	6.7	149
6:00 PM	-72.0	2.178	6.54	176.62	6.8	147
7:00 PM	-71.0	2.155	6.46	174.72	6.9	145
8:00 PM	-70.0	2.132	6.40	172.85	7.0	144
9:00 PM	-69.0	2.109	6.33	170.99	7.0	142
10:00 PM	-68.0	2.086	6.26	169.15	7.1	141
11:00 PM	-67.0	2.064	6.19	167.33	7.2	139

\*Only available in selected areas

To calculate the number of spheres drawn from the vial: divide the activity drawn by the total activity in the vial, then multiply that number by 44.48 million.

## DAY TWO PRE-CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor (e <sup>-0.010814x</sup> )	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere (Bq)
12:00 AM	-66.0	2.042	6.12	165.53	7.3	138
1:00 AM	-65.0	2.020	6.06	163.75	7.3	136
2:00 AM	-64.0	1.998	5.99	161.99	7.4	135
3:00 AM	-63.0	1.976	5.93	160.24	7.5	133
4:00 AM	-62.0	1.955	5.87	158.52	7.6	132
5:00 AM	-61.0	1.934	5.80	156.82	7.7	130
6:00 AM	-60.0	1.913	5.74	155.13	7.7	129
7:00 AM	-59.0	1.893	5.68	153.46	7.8	128
8:00 AM	-58.0	1.872	5.62	151.81	7.9	126
9:00 AM	-57.0	1.852	5.56	150.18	8.0	125
10:00 AM	-56.0	1.832	5.50	148.56	8.1	124
11:00 AM	-55.0	1.813	5.44	146.96	8.2	122
12:00 PM	-54.0	1.793	5.38	145.38	8.3	121
1:00 PM	-53.0	1.774	5.32	143.82	8.4	120
2:00 PM	-52.0	1.755	5.26	142.27	8.4	118
3:00 PM	-51.0	1.736	5.21	140.74	8.5	117
4:00 PM	-50.0	1.717	5.15	139.23	8.6	116
5:00 PM	-49.0	1.699	5.10	137.73	8.7	115
6:00 PM	-48.0	1.680	5.04	136.25	8.8	113
7:00 PM	-47.0	1.662	4.99	134.79	8.9	112
8:00 PM	-46.0	1.644	4.93	133.34	9.0	111
9:00 PM	-45.0	1.627	4.88	131.90	9.1	110
10:00 PM	-44.0	1.609	4.83	130.48	9.2	109
11:00 PM	-43.0	1.592	4.78	129.08	9.3	107

## DAY ONE PRE-CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor (e <sup>-0.010814x</sup> )	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere (Bq)
12:00 AM	-42.0	1.575	4.72	127.69	9.4	106
1:00 AM	-41.0	1.558	4.67	126.32	9.5	105
2:00 AM	-40.0	1.541	4.62	124.96	9.6	104
3:00 AM	-39.0	1.525	4.57	123.62	9.7	103
4:00 AM	-38.0	1.508	4.52	122.29	9.8	102
5:00 AM	-37.0	1.492	4.48	120.97	9.9	101
6:00 AM	-36.0	1.476	4.43	119.67	10.0	100
7:00 AM	-35.0	1.460	4.38	118.38	10.2	98
8:00 AM	-34.0	1.444	4.33	117.11	10.3	97
9:00 AM	-33.0	1.429	4.29	115.85	10.4	96
10:00 AM	-32.0	1.413	4.24	114.60	10.5	95
11:00 AM	-31.0	1.398	4.19	113.37	10.6	94
12:00 PM	-30.0	1.383	4.15	112.15	10.7	93
1:00 PM	-29.0	1.368	4.10	110.95	10.8	92
2:00 PM	-28.0	1.354	4.06	109.75	11.0	91
3:00 PM	-27.0	1.339	4.02	108.57	11.1	90
4:00 PM	-26.0	1.325	3.97	107.40	11.2	89
5:00 PM	-25.0	1.310	3.93	106.25	11.3	88
6:00 PM	-24.0	1.296	3.89	105.11	11.4	87
7:00 PM	-23.0	1.282	3.85	103.98	11.6	86
8:00 PM	-22.0	1.269	3.81	102.86	11.7	86
9:00 PM	-21.0	1.255	3.76	101.75	11.8	85
10:00 PM	-20.0	1.241	3.72	100.66	11.9	84
11:00 PM	-19.0	1.228	3.68	99.57	12.1	83

## DAY OF CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor [e <sup>-0.010814x</sup> ]	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere [Bq]
12:00 AM	-18.0	1.215	3.64	98.50	12.2	82
1:00 AM	-17.0	1.202	3.61	97.44	12.3	81
2:00 AM	-16.0	1.189	3.57	96.40	12.5	80
3:00 AM	-15.0	1.176	3.53	95.36	12.6	79
4:00 AM	-14.0	1.163	3.49	94.33	12.7	78
5:00 AM	-13.0	1.151	3.45	93.32	12.9	78
6:00 AM	-12.0	1.139	3.42	92.32	13.0	77
7:00 AM	-11.0	1.126	3.38	91.32	13.2	76
8:00 AM	-10.0	1.114	3.34	90.34	13.3	75
9:00 AM	-9.0	1.102	3.31	89.37	13.5	74
10:00 AM	-8.0	1.090	3.27	88.41	13.6	74
11:00 AM	-7.0	1.079	3.24	87.46	13.7	73
12:00 PM	-6.0	1.067	3.20	86.52	13.9	72
1:00 PM	-5.0	1.056	3.17	85.59	14.0	71
2:00 PM	-4.0	1.044	3.13	84.67	14.2	70
3:00 PM	-3.0	1.033	3.10	83.75	14.4	70
4:00 PM	-2.0	1.022	3.07	82.85	14.5	69
5:00 PM	-1.0	1.011	3.03	81.96	14.7	68
6:00 PM	0.0	1.000	3.00	81.08	14.8	67
7:00 PM	1.0	0.989	2.97	80.21	15.0	67
8:00 PM	2.0	0.979	2.94	79.35	15.2	66
9:00 PM	3.0	0.968	2.90	78.49	15.3	65
10:00 PM	4.0	0.958	2.87	77.65	15.5	65
11:00 PM	5.0	0.947	2.84	76.81	15.7	64

**Caution:** Federal (USA) law restricts this device to sale by or on the order of a physician.

**Indications for Use:** SIR-Spheres Y-90 resin microspheres are indicated for the treatment of unresectable metastatic liver tumors from primary colorectal cancer with adjuvant intrahepatic artery chemotherapy (IHAC) of FUDR (Fluoruridine). **Consult the Instructions for Use ([www.sirtex.com](http://www.sirtex.com)) for a complete listing of indications, contraindications, side effects, warnings, and precautions.**

## POST-CALIBRATION

Calculation from Calibration (18:00 Eastern Standard Time) to Assay Time

	Elapse Time (x) (In hours)	Decay Factor [e <sup>-0.010814x</sup> ]	Activity (GBq)	Activity (mCi)	Million Spheres per GBq	Specific Activity per Sphere [Bq]
12:00 AM	6.0	0.937	2.81	75.99	15.8	63
1:00 AM	7.0	0.927	2.78	75.17	16.0	63
2:00 AM	8.0	0.917	2.75	74.36	16.2	62
3:00 AM	9.0	0.907	2.72	73.56	16.3	61
4:00 AM	10.0	0.898	2.69	72.77	16.5	61
5:00 AM	11.0	0.888	2.66	71.99	16.7	60
6:00 AM	12.0	0.878	2.63	71.21	16.9	59
7:00 AM	13.0	0.869	2.61	70.45	17.1	59
8:00 AM	14.0	0.860	2.58	69.69	17.3	58
9:00 AM	15.0	0.850	2.55	68.94	17.4	57
10:00 AM	16.0	0.841	2.52	68.20	17.6	57
11:00 AM	17.0	0.832	2.50	67.47	17.8	56
12:00 PM	18.0	0.823	2.47	66.74	18.0	56
1:00 PM	19.0	0.814	2.44	66.02	18.2	55

On average there are 44 million spheres in each SIR-Spheres Y-90 resin microspheres delivery vial with a standard deviation of 2.6 million. FR-006

Specific Sphere Bq and Million of Sphere per GBq are on average.



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