

# Oxygen

Update : september 3th 2010

Radioactive Beam (halflife)	Charge State	V <sub>source</sub> (KV)	Intensity (pps)		Energy (MeV/nucleon)		Primary Beam	Primary Beam Power on ECS Target (kW)	Primary Beam Energy (MeV/nucleon)	Date
			LEB	Target*	Min	Max				
<sup>14</sup> O (70s)	+1		1.3 10 <sup>7</sup>	N.F	N.F	N.F	<sup>16</sup> O <sup>8+</sup>	1.4	95	
	+3		1.6 10 <sup>6</sup>	3.2 10 <sup>5</sup>	3.2	12.5				
	+3 <sub>[1]</sub>	24	2 10 <sup>5</sup>	5 10 <sup>4</sup>	6	6	<sup>20</sup> Ne	1.3		
	+4		1.6 10 <sup>6</sup>	3.2 10 <sup>5</sup>	5.6	19.3		1.4		
	+5		4.1 10 <sup>5</sup>	8.2 10 <sup>4</sup>	8.8	24.3				
	+6		4.1 10 <sup>5</sup>	8.2 10 <sup>4</sup>	12.6	25.4				
<sup>14</sup> O <sub>###</sub> (70s)	4/8+	30	4 10 <sup>5</sup>	4 10 <sup>4</sup>	18	18	<sup>16</sup> O <sup>5/8+</sup>	1.4	95	
	2/8+		9 10 <sup>5</sup>	3 10 <sup>3</sup>	1.7		<sup>16</sup> O <sup>5/8+</sup>	1.4	95	
<sup>15</sup> O (122s)	+1		1.7 10 <sup>8</sup>	1.7 10 <sup>7</sup>	1.2	1.2	<sup>16</sup> O <sup>8+</sup>	1.4	95	
	+2		9.1 10 <sup>7</sup>	1.8 10 <sup>7</sup>	1.4	4.86				
	+3		5 10 <sup>7</sup>	1 10 <sup>7</sup>	2.8	10.9				
	+4		5 10 <sup>7</sup>	1 10 <sup>7</sup>	4.9	17.8				
	+5		1.3 10 <sup>7</sup>	2.6 10 <sup>6</sup>	7.7	22.9				
	+6		1.3 10 <sup>7</sup>	2.6 10 <sup>6</sup>	11	25.4				
<sup>19</sup> O (26.9s)	+2	20	2 10 <sup>6</sup>	2 10 <sup>5</sup>	2.0	3.0	<sup>22</sup> Ne <sup>6/10+</sup>	1.3	80	
	+3		3.8 10 <sup>5</sup>	7.6 10 <sup>4</sup>	1.7	6.7	<sup>36</sup> S	0.9	77.5	
	4+/8+ <sub>[2]</sub>	27.8	4.0 10 <sup>5</sup>	4 10 <sup>4</sup>	6	6.7	<sup>16</sup> O	1.4	95	05/2010
<sup>20</sup> O (13.5s)	+1		2.4 10 <sup>5</sup>		N.F	N.F	<sup>36</sup> S	0.9	77.5	
<sup>20</sup> O <sup>#</sup> (13.5s)	+2	25	5 10 <sup>5</sup>	4 10 <sup>4</sup>	2.7	2.7	<sup>22</sup> Ne <sup>6/10+</sup>	1.3	80	
<sup>20</sup> O <sub>###</sub> (13.5s)	+3	17.4	3.6 10 <sup>5</sup>	4 10 <sup>4</sup>	3	5.6	<sup>22</sup> Ne <sup>6/10+</sup>	1.4	78.9	07/2010
<sup>21</sup> O (3.4s)	+1		1.2 10 <sup>4</sup>		N.F	N.F	<sup>36</sup> S	0.9	77.5	
	+2	24	1 10 <sup>4</sup>	1 10 <sup>4</sup>	2.0	2.4	<sup>22</sup> Ne <sup>6/10+</sup>	1.3	80	
<sup>22</sup> O (2.25s)	+4		1 10 <sup>3</sup>	2 10 <sup>2</sup>	2.8	10.9	<sup>36</sup> S	0.9	77.5	

\* Available intensity for the experiment.

# polluted by molecules use <sup>20</sup>O<sup>3+</sup> instead

## 90% PURE (20F<sub>2</sub> + 20Ne), high resolution cyclotron tuning

### polluted, purification possible by stripping

N.F = not feasible

[1] = polluted by 10<sup>8</sup> pps of <sup>14</sup>N<sup>3+</sup>, purification possible by stripping

[2] = polluted by <sup>19</sup>F(10pps) and <sup>19</sup>Ne : double stripping needed

Color code :

2.8 10<sup>7</sup> = extrapolated figures from SIRA experiment from 400 W to 1.4 kW.

2.8 10<sup>7</sup> = measured figures with SPIRAL.

2.8 10<sup>7</sup> = expected figures after acceleration (not measured) with 20% transport efficiency.