

**ROOM OXYGEN CONCENTRATIONS - IN FULLY MIXED ATMOSPHERE - RESULTING FROM LEAK / SPILLAGE**

NITROGEN Cylinder (size mm)	VOLUME GAS (m3)	ROOM VOLUMES (in m3 )										
		50	100	150	200	250	300	400	500	750	1000	1250
		<b>OXYGEN CONCENTRATION</b>										
140x940 (230 bar)	2.1 X	20.1%	20.5%	20.6%	20.7%	20.8%	20.8%	20.8%	20.9%	20.9%	20.9%	20.9%
230x1460 (230 bar)	9.78 W	16.8%	18.9%	19.5%	19.9%	20.1%	20.3%	20.4%	20.5%	20.7%	20.7%	20.8%
230x1640 (230 bar)	10.78 Z	16.4%	18.7%	19.4%	19.8%	20.0%	20.2%	20.4%	20.5%	20.6%	20.7%	20.8%
		<b>OXYGEN CONCENTRATION</b>										
140X940 (50 bar)	3.3	19.6%	20.3%	20.5%	20.6%	20.7%	20.7%	20.8%	20.8%	20.9%	20.9%	20.9%
203x870 (50bar)	7.3	17.9%	19.4%	19.9%	20.2%	20.3%	20.4%	20.6%	20.6%	20.7%	20.8%	20.8%
230x1496 (50bar)	18	13.4%	17.2%	18.4%	19.1%	19.4%	19.7%	20.0%	20.2%	20.4%	206.0%	20.6%
		<b>OXYGEN CONCENTRATION</b>										
230x1460 (230bar)	11.01	16.3%	18.6%	19.4%	19.8%	20.0%	20.2%	20.4%	20.5%	20.6%	20.7%	20.8%
		<b>OXYGEN CONCENTRATION</b>										
10	6.83	18.1%	19.5%	20.0%	20.2%	20.4%	20.5%	20.6%	20.7%	20.7%	20.8%	20.8%
25	17.1	13.8%	17.4%	18.6%	19.2%	19.5%	19.8%	20.1%	20.2%	20.5%	20.6%	20.7%
50	34.1	6.6%	13.8%	16.1%	17.3%	18.1%	18.6%	19.1%	19.5%	19.9%	20.2%	20.4%
100	68.2	0.0%	6.6%	11.4%	13.8%	15.2%	16.2%	17.3%	18.1%	19.0%	19.2%	19.8%
150	102.3	0.0%	0.0%	6.6%	10.2%	12.4%	13.8%	15.6%	16.7%	18.1%	18.8%	19.2%
200	136.4	0.0%	0.0%	1.9%	6.6%	9.5%	11.4%	13.8%	15.2%	17.1%	18.1%	18.7%
250	170.5	0.0%	0.0%	0.0%	3.1%	6.6%	9.0%	12.2%	13.8%	16.2%	17.3%	18.1%
300	204.6	0.0%	0.0%	0.0%	0.0%	3.8%	6.6%	10.2%	12.4%	15.2%	16.6%	17.5%
400	272.8	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	6.6%	9.5%	13.3%	15.2%	16.4%
500	341	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	6.6%	11.4%	13.8%	15.2%
600	409.2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	9.5%	12.4%	14.1%

**Oxygen concentrations below 18% must be considered hazardous**

The calculations above will be valid where the gas is fully mixed with the air in the room.

At the point of the leak / spill - the concentration of oxygen will be significantly lower than indicated above.

If 2 cylinders are connected via a changeover valve then the maximum volume of gas which could leak doubles, and the resulting Oxygen concentration can be calculated by halving the room volume and reading off the Oxygen concentration for the smaller sized room.