Unity Lab Services
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1025, 1029	How much gas does my 1025 use	April 27, 2015

Probably the most frequent asked question concerning the Anaerobic System is, "How much gas does it use?" While difficult to answer accurately, we can give approximate figures.

First of all, the customer must be made aware that a direct influencing factor is the number of entries made per day through the interchange compartment. Remember that the glove cabinet automatically maintains a fraction of a pound positive pressure. This is to ensure that room atmosphere won't leak in.

During an interchange reduction the interchange will be evacuated and back filled three times. The first two evacuations will be back filled with nitrogen. The last evacuation will be filled with atmosphere borrowed from the glove chamber--anaerobic gas. As this gas is transferred from the glove cabinet to the interchange, the automatic glove cabinet regulator will call for more anaerobic gas from the supply cylinder. The interchange is 1.12 cu. ft. thus 2.24 cu. ft. of nitrogen and 1.12 cu. ft. of anaerobic mixed gas will be used.

A small amount of gas might be expelled out the chamber relief when work is being done in the gloves.

If we made an absolutely leak-proof glove cabinet, the above is all of the gas which would be used. This, of course, is impossible because the vinyl film itself is semipermeable, as well as the gloves, and not all cabinets are made exactly the same. Thus the remaining gas usage leaves the cabinet by these minute pathways.

Our Quality Control Department tests every cabinet and will not allow shipment of a cabinet in which the automatic positive pressure calls for more gas more than once an hour in a steady state condition. Most cabinets go much much longer than this.

With all of this information, we can now give approximate gas consumption figures with the following examples:

FIVE ENTRIES PER DAY

N_2	Mixed Gas
11.2 cu. ft.	5.6 cu. ft.
11.2 x 7 = 77.2 cu. ft./week	Auto positive pressure uses 3 to 5 cu. ft. per day.
$\frac{244 \text{ (full tank)}}{77.2}$ = 3.16 weeks	5.6 + 4 = 9.6 cu. ft. per day 9.6 x 7 = 67.2 cu. ft./week
	$\frac{244 \text{ (full tank)}}{67.2}$ = 3.63 weeks