

Quick Guide to Log Reduction

Not all hand sanitizers are created equal.

Number of CFUs

1,000,000

800,000

600,000

400,000

200,000

100,000

10,000

1,000

100

10

1

CFUs (colony forming units)

The following graph shows the results log reductions have on a test area with 1,000,000 CFUs (colony forming units).

A 4-Log Reduction on a surface with 1,000,000 CFUs would leave 100 CFUs, which is written as a 99.99% reduction in potentially harmful microorganisms.

“Log” is short for logarithm, which is a power to which a base, such as 10, can be raised to produce a given number. As an example, Log 4 represents 10^4 $10 \times 10 \times 10 \times 10$ or 10,000. Log reduction means a 10 fold (one decimal place) or 90% reduction in CFUs.

To look at in terms of reduction of the CFUs, a reduction of 1 Log (90%) reduces CFUs on a test area from 1,000,000 CFUs to 100,000, 2 Log (99%) reduces 1,000,000 to 10,000, 3 Log (99.9%) from 1,000,000 to 1,000 with 6 Log reducing 1,000,000 down to 1 CFU.

1-Log
90%

2-Log
99%

3-Log
99.9%

4-Log
99.99%

5-Log
99.999%

6-Log
99.9999%

- 1-Log Reduction (Log_1): Number of CFUs is 10 times smaller
- 2-Log Reduction (Log_2): Number of CFUs is 100 times smaller
- 3-Log Reduction (Log_3): Number of CFUs is 1,000 times smaller
- 4-Log Reduction (Log_4): Number of CFUs is 10,000 times smaller
- 5-Log Reduction (Log_5): Number of CFUs is 100,000 times smaller
- 6-Log Reduction (Log_6): Number of CFUs is 1,000,000 times smaller



Smart-San Hand Sanitizer Spray and Alpet E3+ kill 99.9999% of tested pathogens.