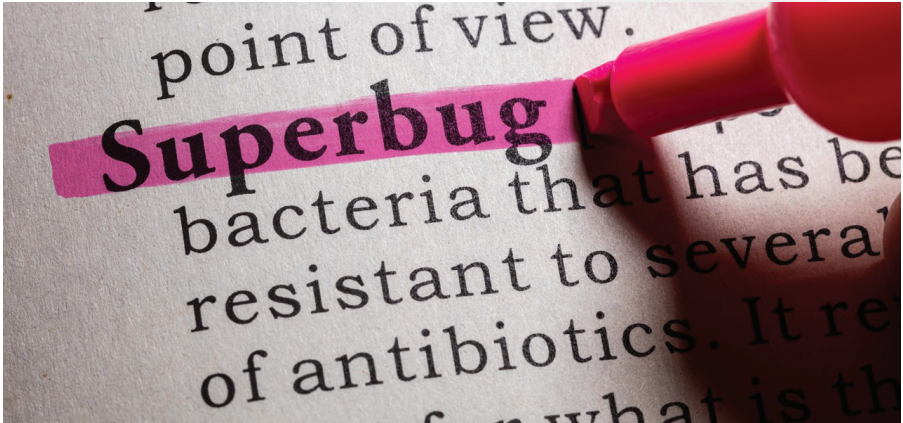
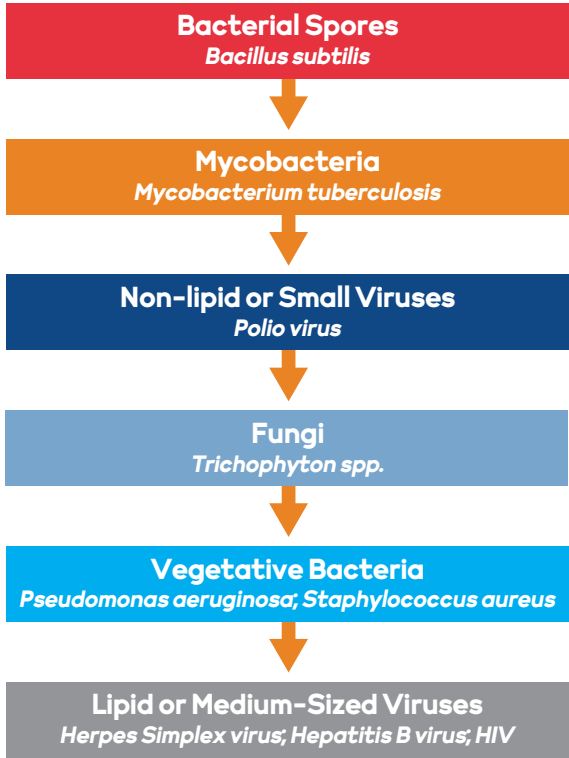


Hierarchy of microbial risk



Hardest to kill

Bacterial Spores
Protozoa
Mycobacteria / Non-Enveloped Viruses
Fungi
Vegetative Bacteria
Enveloped Viruses (Covid-19)

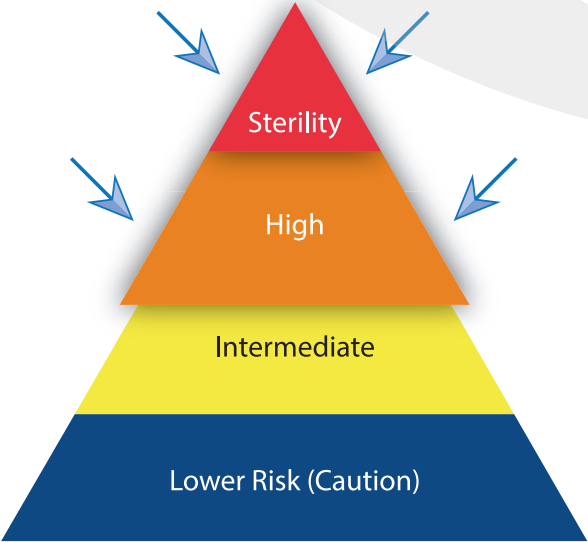
Easiest to kill

| Spectrum of activity | Vegetative cells | Mycobacteria | Spores | Fungi | Viruses | Examples |
|----------------------|------------------|--------------|--------|-------|---------|--|
| High level | + | + | + | + | + | Ethylene Oxide Glutaraldehyde Formaldehyde |
| Intermediate level | + | + | – | + | + | Phenolic Halogens |
| Low level | + | – | – | + | + / – | Alcohol Quaternary Ammonium compounds |

| SPAULDING CLASSIFICATION | | | |
|--|---|--|---|
| The Spaulding classification scheme divides medical devices into three categories, based on the intended use of the device and the degree of risk of patient infection | | | |
| CATEGORY | DESCRIPTION | EXAMPLE | CLASS OF DISINFECTION |
| Non-critical | Device that only contact intact skin | Blood pressure cuff, crutches and other patient care equipment | Since the risk of infection is low, cleaning, or low or mid-level disinfection will be sufficient |
| Semi-critical | Device that contact intact mucous membranes or non-intact skin of the patient | Endotracheal tube, non-invasive endoscope, anesthesia breathing tubes | High-level disinfection is the minimum level of disinfection recommended by CDC |
| Critical | Device that are introduced directly into the bloodstream or sterile areas of the body | Needles, surgical instruments, cardiac catheters, implants like heart valves devices | Since the risk of infection is very high, they require STERILISATION before each use |

HOW TO DECONTAMINATE?

- All items must first be CLEANED
- Critical items require STERILISATION
- Semi critical items require HIGH LEVEL DISINFECTION
- Non critical items require LOW LEVEL DISINFECTION

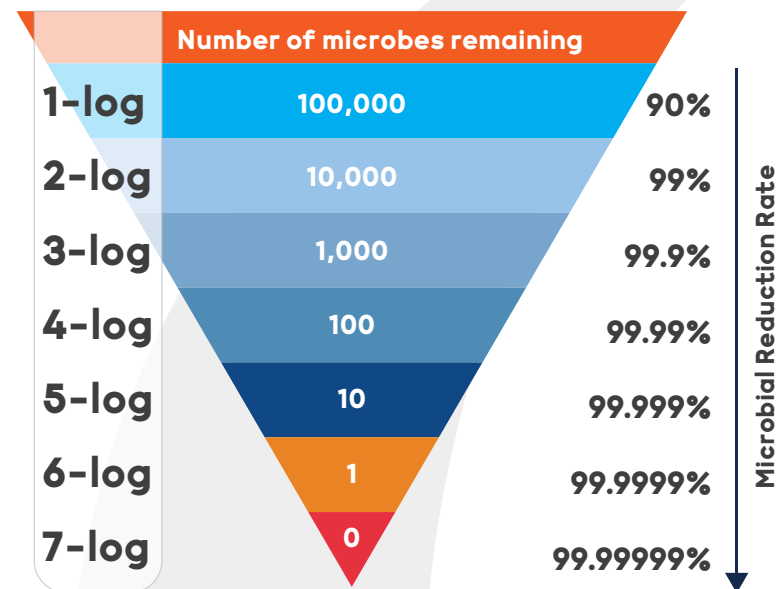
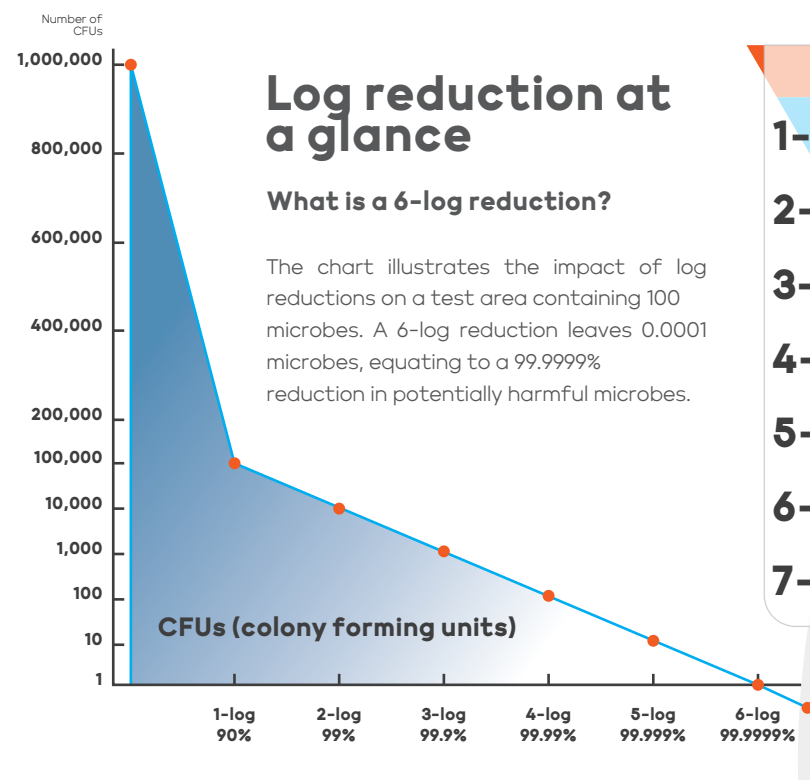


UfD
Upfront Distribution

Log Reduction 101

SPECIALISTS IN THE FORMULATION,
MANUFACTURE, IMPORT AND EXPORT
OF PROBLEM-SPECIFIC NICHE
CHEMICAL SOLUTIONS

OFFICIALLY APPOINTED DISTRIBUTOR

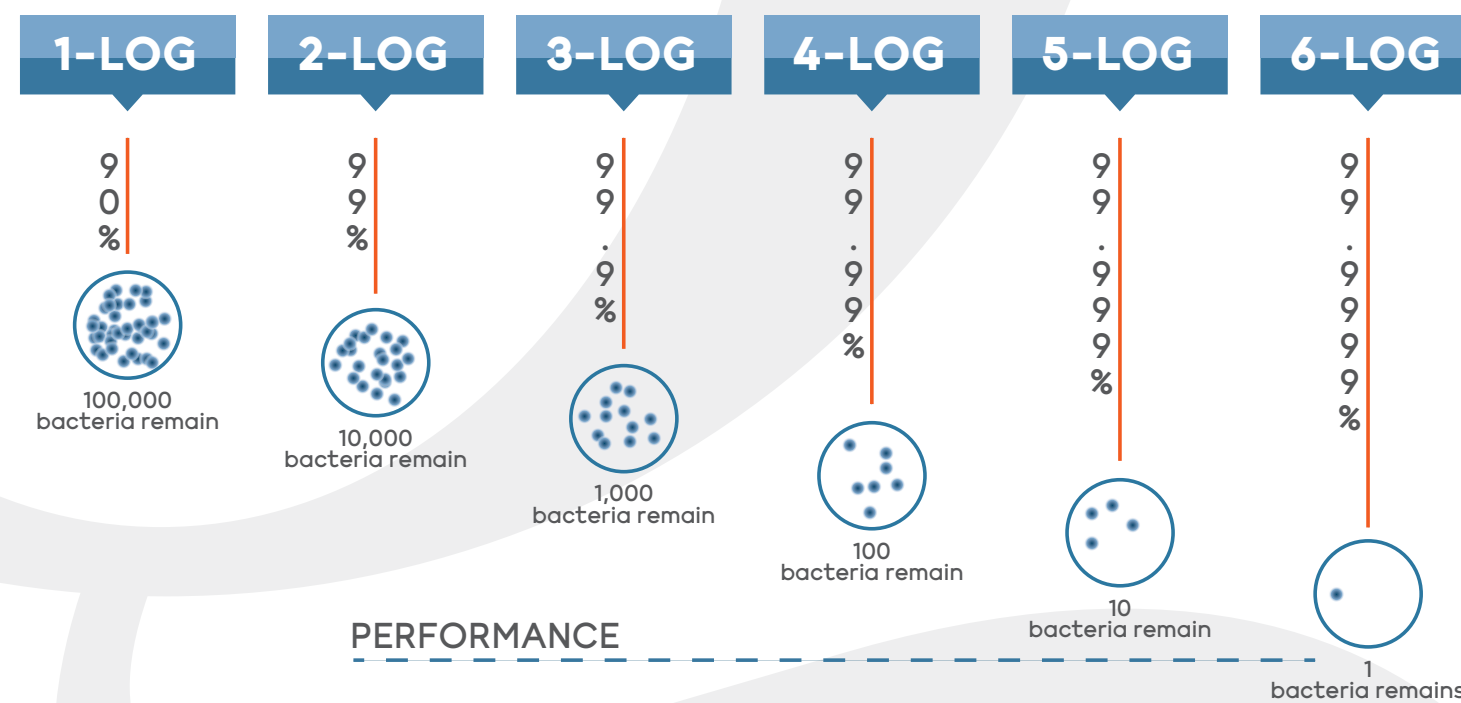
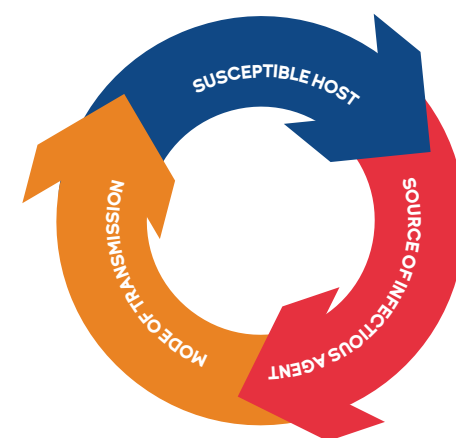
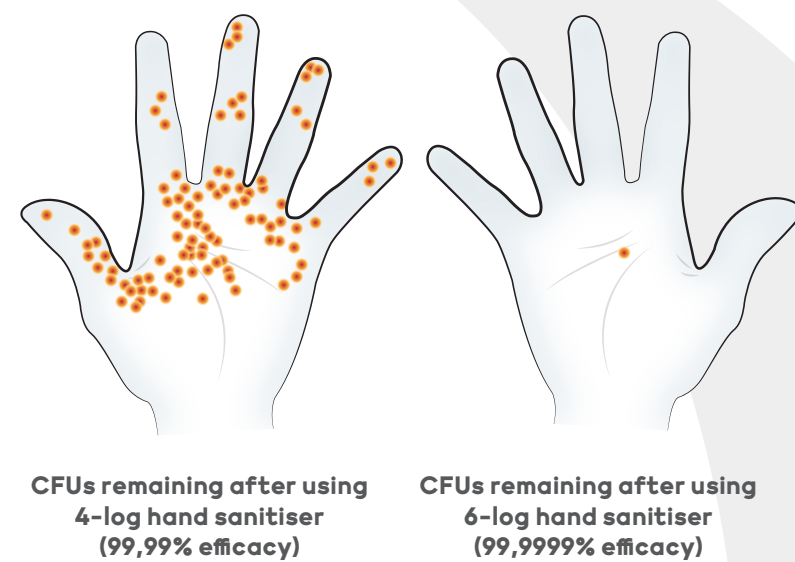


| Log reduction | % of germs | Fold reduction (number of germs killed) |
|---------------|------------|---|
| 1 log | 90 | 10 |
| 2 log | 99 | 100 |
| 3 log | 99.9 | 1,000 |
| 4 log | 99.99 | 10,000 |
| 5 log | 99.999 | 100,000 |
| 6 log | 99.9999 | 1,000,000 |

Sterilisation versus disinfection

- Sterilisation kills all living microorganisms, including bacterial spores on inanimate (non-living) objects or surfaces.
- Disinfection eliminates or reduces most pathogenic microorganisms (excluding bacterial spores).
- Sterilisation is an absolute condition, while disinfection is not. The two are not synonymous.

| Log reduction | Number of CFUs | Reduction percentage | Times smaller |
|-----------------------------|----------------|----------------------|---------------|
| 0 – log (Log ₀) | 1 000 000 | 0% | N/A |
| 1 – log (Log ₁) | 100 000 | 90% | 10 |
| 2 – log (Log ₂) | 10 000 | 99% | 100 |
| 3 – log (Log ₃) | 1000 | 99.9% | 1000 |
| 4 – log (Log ₄) | 100 | 99.99% | 10 000 |
| 5 – log (Log ₅) | 10 | 99.999% | 100 000 |
| 6 – log (Log ₆) | 1 | 99.9999% | 1 000 000 |



| 1-LOG KILL | 2-LOG KILL | 3-LOG KILL | 4-LOG KILL | 5-LOG KILL | 6-LOG KILL |
|-------------------------------|------------------------------|-----------------------------|---------------------------|--------------------------|-------------------------|
| 90% | 99% | 99.9% | 99.99% | 99.999% | 99.9999% |
| 100,000 microorganisms remain | 10,000 microorganisms remain | 1,000 microorganisms remain | 100 microorganisms remain | 10 microorganisms remain | 1 microorganism remains |