

7. Decontamination Methods and Chemicals

Biological Specimens will contaminate all surfaces and equipment in the area that they are prepared and processed. The items that will need decontamination include Walls, floors, doors, bench surfaces, sinks, fridges and freezers, trolleys, cutting tools, microscopes, computers, footwear, and hands.

The use of chemicals to perform decontamination is essential, however the chemicals used must effectively control the biological risks present in the laboratory. Some chemicals present serious risks to workers, are unpleasant to use, introduce additional risks and can also damage the equipment and surfaces they are being used on.

Workers may take personal equipment such as mobile phones into the operational areas, these will need to be decontaminated. Computers and laptops should not enter the laboratory, unless there is no intention to remove the computer, as decontamination processes are likely to destroy them.

Chemical	Use	Effectiveness	Risks / Comments
Virkon	Virkon is a pink powder that is diluted in water usually at 1:100 for normal use. Virkon sachets can be purchased for use in biological spill kits.	<ul style="list-style-type: none"> When left for 10 minutes it is effective anti-viral and anti-bacterial. Virkon solution is pink when effective and will change to clear when effectiveness has dissipated. 	<ul style="list-style-type: none"> Virkon powder is hazardous should not be breathed in. Virkon solution has a pleasant mild smell that is not hazardous and will not affect clothing or specimens.
Ethanol 70%	Ethanol solution is used to sterilise surfaces and equipment and can be purchased in different forms such as wipes and hand sanitizer.	<ul style="list-style-type: none"> Effective anti-viral. Effective anti-bacterial. 	<ul style="list-style-type: none"> Ethanol is classified as a dangerous good and a hazardous chemical. Ethanol presents serious risk of Fire, particularly near electrical equipment. Regular use will cause skin irritation. Ethanol can deform glue and rubber seals on equipment and shoes.
Anti-viral hand wash	Decontaminate hands and skin	<ul style="list-style-type: none"> Effectiveness dependent on brand and type. 	<ul style="list-style-type: none"> Select product designed for Veterinarian use.
Detergent or hand soap	Detergent is used to clean blood and dirt and grease from floors and equipment.	<ul style="list-style-type: none"> Not effective. Detergent removes visible traces of biological matter but does not effectively sterilise surfaces. 	<ul style="list-style-type: none"> Detergent must be followed by a sterilising process and the introduces manual handling risks. Detergent is often slippery and introduces slip risks.
Bleach (sodium hypochlorite solution)	Bleach is used to sterilise surfaces after the use of detergent.	<ul style="list-style-type: none"> Bleach degrades into salt water and become 20 percent less effective as each year of storage. Bleach solutions are not as effective after being mixed with water for over 24 hours. Organic material tends to neutralise bleach. 	<ul style="list-style-type: none"> Bleach is a highly alkaline and will destroy retina cells within seconds of eye exposure. Bleach must be used in an area with good ventilation. Bleach is corrosive and metal surfaces need to be wiped down with water or ethanol after treating them with bleach. Avoid using bleach on delicate metal instruments.

Method	Discussion
Mopping & scrubbing	Method used to apply cleaning chemicals to remove blood and debris from floors, walls, and surfaces. Mopping and scrubbing equipment must never leave the laboratory.
Spray	Sterilisation chemicals are mechanically sprayed across floors and surfaces to provide adequate coverage. Spraying is not appropriate for Ethanol.
Foot Bath	Sterilization chemicals in a tray to decontaminate footwear as a person leaves the laboratory.