AVIAN FLU

Avian Influenza Virus
Protective Clothing Guide

Avian or bird flu is a virus which affects bird populations and can spread rapidly in the conditions required for modern intensive chicken and other poultry farming. When identified, protective clothing is primarily used in the eradication of flocks and the following clean-up – the cleansing and disinfection of infected areas. This document comprises Lakeland's recommendations and options for suitable protective clothing for these operations.

Although primarily affecting birds, two strains of Avian Flu (H5N1 and H7N9) have caused global concern following several cases of human infection and a number of deaths. Other strains have infected people, but only rarely resulted in any serious illness.*

How is it transmitted?

The virus is transmitted through contact with faeces and body fluids. Human infection can occur from contact but it does not transmit between people. There is also no evidence it can transmit through ingestion of infected poultry. However humans can easily spread the disease amongst poultry populations by spreading infected matter.

What happens following an outbreak?

Following quarantine infected populations will be culled and disposed of. Primary cleaning and sterilization of infected areas follows with secondary disinfection required before re-stocking can take place.

During the clean-up suitable PPE is required. Disinfection consists of comprehensive spraying of infected areas with approved disinfectants. During this operation chemical protective clothing along with suitable masks, gloves and boots is required.

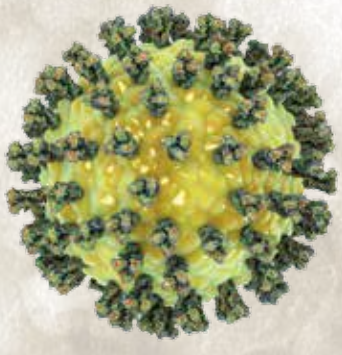
Selection of chemical suits

There are two hazards for workers involved:

- Risk of contracting the virus
- Risk of harm from the disinfectants being sprayed

Overleaf is a summary of the hazards presented along with Lakeland's recommended options.

For more information on chemical suit selection see Lakeland *"Guide to Selection of Chemical Suits."*



Influenza A H7N9 as viewed through an electron microscope. Both filaments and spheres are observed in this photo.

** Source : UK Govt: nhs.uk , WHO Fact Sheet November 2016*

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Risk of contracting the virus: fabric choices

EN 14126 provides testing and certification for protection against infectious agents. The standard comprises 4 tests against various types of contact. In this case ISO 16604, being the test for protection against blood borne pathogens, is critical.

MicroMax® NS and ChemMax® 1 are certified to EN 14126 and pass all four tests in the highest class. Note that other disposable fabrics, such as SMS variants and flashspun polyethylene are unclassified in the ISO 16604 test.

Fabric Choices – EN 14126: Protection against Infectious Agents			
Test	**Description**	**CE Class**	
		Micromax® NS	**ChemMax® 1**
ISO 16604	Protection against Blood and Body Fluids	6 (of 6)	6 (of 6)
ISO 22611	Protection against contaminated aerosols	3 (of 3)	3 (of 3)
ISO 22612	Protection against contaminated dusts	3 (of 3)	3 (of 3)
EN 14126 Annex A	Protection against mechanical contact with contaminated surfaces	6 (of 6)	6 (of 6)

Risk of harm from disinfectants sprayed

A range of disinfectant types might be used. MicroMax® NS and ChemMax® 1 fabrics should provide sufficient protection against most for this type of spraying application.

Contact Lakeland for information on specific disinfectants.

Hazard / Spray Type

Knapsack spraying of disinfectants does not involve strong jets of liquid spray but might include a considerable volume of overspray. On this basis this can be classed as a CE Type 4 application.

Type 4 garment construction requires sealed seams but allows wider choice and opportunity for greater comfort than a Type 3 chemical suit.

Protective Clothing Options

Lakeland recommend a Type 4 garment with sealed seams using either MicroMax® NS or ChemMax® 1 fabric.

Options are shown below.

Seam colour for illustration only. Standards seams are white.

MicroMax TS

Combination of MicroMax NS microporous film laminate with stitched and taped seams.

- Coverall with elasticated hood, waist, cuffs and ankles
- MicroMax® NS fabric - superior liquid repellency with effective MVTR breathability for comfort
- Very soft and flexible - easy to wear
- Stitched & taped seams for additional protection
- Adhesive tape to zip cover

ChemMax® 1EB

Special Type 4 version of the ChemMax 1 chemical suit developed specifically for the UK Government Ebola Relief effort in Sierra Leone in 2014-15.

- Coverall with elasticated hood, waist cuffs and ankles
- Very lightweight, soft and flexible fabric
- Low noise level - improved comfort and safety
- Zip front with adhesive tape to zip flap
- Very cost effective Type 4 protection against infectious agents

A ChemMax® flap sealed at top and sides, allows circulation of air in and out of the garment.

ChemMax® 1 Cool Suit Advance Plus

Lakeland's unique Cool Suit Advance design provides breathable Type 4 protection for increased comfort and wearability. A breathable rear panel is covered by a ChemMax® flap sealed at top and sides, allowing circulation of air in and out of the garment.

- Coverall with elasticated hood, waist, cuffs and ankles
- Yellow with green seams and breathable panel cover for easy identification
- Zip front fastening with adhesive tape to zip flap

Glove Connection?

Achieving a seal between sleeve and gloves in spraying operations can be critical. Lakeland's Push-Lock® glove connection system provides an easy-to-use type 3 & 4 tested seal.

Note: The above comprise Lakeland's suggestions for suitable protective clothing for Avian Flu clean-up operations based on general information available. However, specific applications may require other factors to be considered that might result in other garments being more appropriate. The selection of the most appropriate garment for any application is the responsibility of the user and should be made by qualified personnel following a comprehensive risk assessment.

Lakeland® Protect Your People™

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