

GLUTARALDEHYDE

GUIDELINES FOR SAFE WORKING PRACTICES



**Australian Chicken Meat
Federation (ACMF) Inc**

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AUSTRALIAN CHICKEN MEAT FEDERATION

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1. USAGE

In the poultry industry glutaraldehyde is used in the disinfection of breeder, broiler and hatchery facilities. The solution of glutaraldehyde is applied through various types of spraying and foaming equipment. Two operators are involved in the disinfection procedure, one applying the solution and the other person on standby, both equipped with protective gear, which consists of an approved full face respirator with organic vapour filters and a particulate P2 filter, nitrile gauntlet gloves, rubber boots, overalls buttoned at the neck and wrist, with head to toe wet weather clothing.

The glutaraldehyde dilution rate with water is 1:50 or 1:100.

2. AUSTRALIAN EXPOSURE STANDARDS

The Australian Exposure Standards (ES) are determined by the National Occupational Health and Safety Commission (NOHSC). NOHSC is commonly known as Worksafe Australia. These are published in the publication 'Exposure Standards for Atmospheric Contaminants in the Occupational Environment'¹.

An Exposure Standard represents an airborne concentration of a particular substance in the workers breathing zone, exposure to which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all workers. There are generally three types of exposure standards.

ES-TWA The Exposure Standard-Time Weighted Average, represents an average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five day working week.

ES-STEL The Exposure Standard-Short Term Exposure Limit, represents a 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.

ES-PEAK A maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.

The current Australian Exposure Standard is 0.2ppm peak limitation.

3. HEALTH EFFECTS

Effects of short-term (acute) exposure

Inhalation: Irritation to nose, throat, lungs and headaches.

Skin contact: Glutaraldehyde is a skin irritant.

Eye contact: Vapour can be irritating and concentrated solutions can cause severe injury to eyes.

Ingestion: Abdominal pain, cramps, vomiting and diarrhoea with possible liver and kidney damage.

Effects of long-term (chronic) exposure

Skin: Repeated exposure can cause sensitisation.

Sensitiser: Glutaraldehyde is a sensitiser and can cause specific immune response in some people. Exposure to a sensitiser, once sensitisation has occurred, may manifest itself as a skin rash or an asthmatic condition and in some individuals this reaction can be severe.

4. PERSONAL PROTECTIVE EQUIPMENT

It is essential that inhalation of glutaraldehyde vapour and aerosol and skin and eye contact be avoided.

Respiratory protection

An approved full face respirator with an organic vapour filter plus a P1 filter for concentrations up to 10 times the Worksafe Exposure Standard of 0.2ppm would be suitable. Organic vapour filters and particulate filters should be changed regularly.

For higher concentrations up to 50 times the Worksafe Exposure Standard (10ppm), an approved full face respirator with an organic vapour filter plus a P2 filter would be suitable.

When concentrations exceed these levels, a self-contained breathing apparatus with a full face-piece may be appropriate.

Eye-wash fountains and safety showers should be located near any area where glutaraldehyde is handled.

Skin protection

Nitrile gauntlet gloves and coveralls should be worn to prevent skin contact.

5. SAFETY PROCEDURES

All staff intending to work with glutaraldehyde should undergo an induction/training program and be made aware of the health effects of this chemical. Those with a history of asthma or allergic dermatitis should be advised to avoid contact with the solution or exposure to the vapour.

A copy of the material safety data sheet for glutaraldehyde should be stored at relevant areas for anyone wanting information on the health effects of that chemical.

Spraying of sheds with glutaraldehyde solution must be done by operators trained in the use of this chemical.

Glutaraldehyde should be stored in a locked cupboard (for large quantities in a locked room) away from direct sunlight and potential for accidental damage. The key should be available only to authorised staff.

6. FIRST AID

Inhalation: Remove victim to fresh air and seek medical attention.

Skin contact: Rinse affected area with water for at least 15 minutes. Remove contaminated clothing and launder before reusing.

Eye contact: Rinse affected eye thoroughly with running water, holding apart the upper and lower eyelid for 15 minutes. Seek medical attention immediately.

Ingestion: Victim should drink 1 -2 cups of milk or water and seek medical attention immediately. Do not give anything by mouth to an unconscious or convulsing person.

7. USE AND REVIEW OF THIS BOOKLET

These guidelines for Safe Working Practices were prepared on the basis of known technical and work knowledge as at January 1995. They are subject to review on an annual basis.

A copy of this booklet is to be given to all employees who work, or come in contact with glutaraldehyde.

An electronic copy (PDF) of this document was created in August 2006 and is available from ACMF's website www.chicken.org.au