**Risk Assessment: Autoclaves**

An autoclave is a pressurized device designed to heat aqueous solutions above their boiling point. It uses steam to inactivate bacteria, viruses, fungi, and spores and to sterilise equipment and other objects.

**Hazards**

Serious burns and general electrical hazards like electric shock.

There could be spills of biohazardous material, broken glass and dropped load contents during the loading of the autoclave.

There could be splashes and spillage of hot material from the load, hot condensate, hot equipment, broken glass, dropped load contents, and vapour from volatile chemicals during unloading.

**Risks**

The hot metal surfaces on the exterior of the autoclave will be very hot when the autoclave is in use. This can cause serious burns to the user when in contact.

The hot steam generated from the autoclave can scald the users especially when the operating cycle is just over and the user opens the lid of the autoclave.

There might be ignition from hot surfaces, liquids or from the electrical components.

**Who is likely to be injured?**

Electric Shocks, burns: The user

Fire and explosion: Injuries may be widespread.

**Control Measures**

**General rules on using an autoclave**

- The instruction manual should be available and must be read before use.
- The standard operating procedures should be placed near the autoclave.
- All materials for sterilization should be labeled with the contents and have autoclave tape attached.
- The autoclave must not be overloaded.
- The control panels should be checked and make sure that there is no error messages before autoclaving.
- Laboratory coats buttoned with sleeves down to the wrist, heat-proof gloves and goggles should be worn when the autoclave is being loaded/emptied.
Any faults associated with the autoclave should be reported to the person in charge of the autoclave.

Unauthorized personnel/untrained personnel should not work or dismantle the autoclave.

Autoclaves should be subject to servicing based on manufacturer's recommendations as well as to periodic tests for efficiency based on use of autoclave tape, packets of spores and other suitable alternative method of quality control.

General and Electrical safety

Users should operate the instruments according to the instructions in the instruction manual only.

User must always ensure that the power cable is in good condition i.e. no wires are exposed.

Training

Users must be instructed on the correct equipment handling procedures.

Risk Remaining

The level of risk is low with proper training. However, constant vigilance is necessary to avoid injury and possibly serious burns.

Date: 25 November 2009
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