

## Risk Assessment Form

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| <b>Procedure</b> | Use of Fluid aspiration system (BVC Vacuum systems) |
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|--|---|------------------|-----------|
| <b>Name(s) of person performing the work</b> | Users (Lab manager & Lab Technician & Tenants & Licensee's) |                  |           |
| <b>Name &amp; position of assessor</b>       | Khwaja Islam & Laboratory Manager                           | <b>Signature</b> |           |
| <b>Date of assessment</b>                    | 01/10/2018  | <b>RA Number</b> | BioE 0018 |

### **Outline of procedure / activity:**

Fluid aspiration system (Vacuum BVC system) will be used to aspirate media in TC class II cabinets. There are 3 vacuum BVC systems in TC lab (696.10.26).

Operator must be trained in operating vacuum BVC systems to guarantee safe daily use. Untrained Personnel are not be allowed to operate the vacuum BVC systems. Users should operate the vacuum BVC systems according to instructions in the manual.

#### Operation of vacuum BVC systems:

1. Always check the collection bottle (4L) before you start your work.
2. Place a scoop of Virkon power and some water to the empty collection bottle.
3. Operate the on/off switch only by **hand** (not by foot).
4. The unit has a touch panel so the keys need only to be touched gently. Do not press the keys!
5. Use the + and – keys to set suction power (suction power can be set linearly in a range from 150mbar (1 led flashes) to 850 mbar (8 led flashes) under pressure).
6. The maximum liquid level in collection bottle is approx. 80% (i.e.  $\frac{3}{4}$  full) filled, then empty contents of the bottle down the sink with corpus amount of water.
7. The level sensors gives an alarm and switches off the pump to avoid an overflowing of the collection bottle.
8. Never let the collection bottle overflow as the liquid will enter the vacuum pump and cause damage to the pump.
9. Switch the pump off at end of work.

#### Safety precaution:

- Make sure that the individual components are only connected, combined and operated according to their design and as indicated in the instructions for use
- The systems are designed for ambient temperatures during operation between +10°C and +40C.
- Always provide a free and pressureless exhaust line.
- The pumps are not suitable for pumping dust & particles.
- Do not operate this product near flames.

- Never operate a defective or damaged pump.
- Avoid interactions of media in the collection tube.
- Pay attention to the safety symbol; “hot surfaces” on the equipment. Hot parts may cause burns if touched.
- Do not mix incompatible disinfectants and/or in-compatible reagents / solvents or any unknown substances.
- Check the collection bottle regularly for cracks. Never use a collection bottle with cracks nor expose it to vacuum.
- Avoid the formation of dangerous reactions / gases in the BVC, especially in the collection bottle.
- The devices are not suitable for pumping substances which may form deposits inside the pump as this may lead to increased temperatures.
- Check fan regularly for dust/dirt, clean if necessary to avoid reduced ventilation.
- The devices are not suitable to pump:
  - Unstable substances and substances which react explosively under impact and/ or when being exposed to elevated temperatures without air.
  - Self-inflammable substances.
  - Explosive substance.

### Potential hazards

| Substance or item handled                             | Associated Hazard (s)                                   | Existing Control Measures   | Risk (L/M/H) | Further Action required  | Risk (L/M/H) |
|---|---|---|--------------|--|--------------|
| Use of Vacuum BVC system                              | Hot surfaces on the vacuum pump - burns                 | All operators should be trained on proper operating procedures before operating the incubator. Wear PPE (lab coat and gloves and safety specs). Do not touch hot surfaces of the pump. There is “hot surfaces” symbol in place.   | L            | No further action required if the existing control measures are adhere to. | L            |
| Working with cell cultures, bacteria or viruses       | Biohazard risk  | Wear proper PPE; gown (lab coat and gloves and safety specs). Users will have a risk assessment / SOP in place before work begins.  | L            | No further action required if the existing control measures are adhere to. | L            |
| Virkon –used as disinfectant in the collection bottle | Irritant  | Refer to COSHH assessment of Virkon 0006. Wear PPE (lab coat and gloves and safety specs).  | L            | No further action required if the existing control measures are adhere to. | L            |
| Use of Vacuum BVC system                              | Electrical hazard - Electrical shock – danger of death. | Only switch on the device if the device and power cable are undamaged. The device has been properly installed and there is a preventative maintenance in place. Only trained personal are allowed to use the machine. Incubator is earthed, protective earth connection for the | L            | No further action required if the existing control measures are adhere to. | L            |



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|  |  | machine is provided using 13A plug fitted to the machine (RCD protected). Make sure it has been PAT tested. |  |  |  |
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**Persons potentially at risk:**

Only the user or others near by

**Action in event of an accident or emergency:**

1. **Fire:** raise the fire alarm and evacuate the area. Use correct fire extinguisher if you have been trained and it is safe to do so.

**Arrangements for monitoring effectiveness of control:**

Daily inspection of equipment and collection bottle by lab technician.

Annual preventative maintenance carried by external contractor.

Instruction and training given to all operators which is reviewed annually.

Existing operators receive annual refresher training.

Annual pat testing by external contractor.

**Arrangements for monitoring effectiveness of control:****Review of the Risk Assessment:**

|                     |  |                  |  |
|---------------------|--|------------------|--|
| Date of review      |  | Name of reviewer |  |
| Date of next review |  | Signature        |  |

Have the control measures been effective in controlling the risk?

|     |    |
|-----|----|
| Yes | No |
|-----|----|

Have there been any changes in the procedure or in the information available which affect the estimated level of risk from the listed substances

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| Yes | No |
|-----|----|

What changes to the control measures are required?

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**Declaration by Tenants/Licensees/Technician:**

I confirm that I have read this Risk Assessment and that I understand the hazards and risks involved and will follow all of the safety procedures stated. Where PPE has been identified as a control measure, I will ensure that it is worn.

**Declaration by Laboratory Manager (LM):**

I confirm that the tenant/licensee/technician who has signed below is competent to undertake the work. My counter-signature indicates that I am happy for the work to proceed.

| Name (Please print) | Signature | LM<br>Countersignature | Date |
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| Name (Please print) | Signature | LM<br>Countersignature | Date |
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