General Risk Assessment

This is an outline of the general risks and hazards of doing gel electrophoresis. Please refer to your own schools or local authorities guidelines and ensure that you have completed the necessary risk assessment.

Title of Activity:	**Gel Electrophoresis of DNA Samples**
Brief Description of Work: To analyse fragments of DNA by running them on an agarose gel in a standard gel electrophoresis tank (horizontal).	

Hazard Identification: Identify all the hazards; evaluate the risks (low / medium / high); describe all existing control measures and identify any further measures required.

Hazard(s)	**Present Risk** **Evaluation** L/M/H	**Control Measures** (i.e., alternative work methods / mechanical aids / engineering controls, etc.)	**Risk** **Evaluation after control** L/M/H
Burns from heating agarose in a microwave oven	H	- Nitrile gloves, safety glasses and lab coats (buttoned) will be worn when preparing agarose gels - A small amount will be prepared in an open, large conical flask - Heat resistant glove mit will be used when handling the heated agarose. - Care will be taken to ensure that the agarose is not left unattended when heating, and that it is stopped at regularly intervals to mix its contents to ensure even heating this will ensure that it is not overheated - Leave in the microwave for 30 seconds to ensure it is safe to remove	L

Potential Staining: Fast Blast DNA Stain	L	- Nitrile gloves, safety glasses and lab coats will be worn when preparing and applying the stain to the gel - Any spills will be immediately identified and cleaned up accordingly	L
Liquid spills during preparing and decanting TAE leading to **slip hazard**	L	- Nitrile gloves, safety glasses and lab coats (buttoned) will be worn when preparing buffers. - Nitrile gloves and lab coats (buttoned) will be worn when decanting buffers - Any spills will be immediately identified and cleaned up accordingly - Funnels will be used when decanting the buffer back into bottles - Measuring cylinders will be used when decanting the TAE buffer into the tanks	L
Potential Electrical danger **Electric shock**	L	- Only teachers or technicians will be permitted to operate the power pack. - Operators will be instructed on the correct use through reading the technical notes provided with the kit. - Dry gloves will be worn when touching the equipment. - Electricity will only be turned on when the lid is secured on the tank - All entry wires to the power pack will be checked and only those with buffer and the lid on will be connected. - Wires will be checked to make sure they are not in the way/on the floor	L

		so do not pose a trip hazard - Electrical equipment used for presentations will have been PAT tested/have a PAT tested sticker - The equipment will be visually checked to ensure there are no frayed wires/similar problems which could pose a risk	

**Continue on separate sheet if necessary*

Personal Protective Equipment (PPE): Identify all necessary PPE.

Eye / Face	X	Hand /Arm	X	Feet / Legs		Respiratory	
Body (clothing)	X	Hearing		Other (Specify)			
Specify the grade(s) of PPE to be worn: Lab coats, nitrile gloves, safety glasses							
Specify when during the activity the item(s) of PPE must be worn: Lab coats to be work at all times. Safety glasses to be worn during certain activities such as agarose gel and TAE buffer preparation.							

Non-disposable items of PPE must be inspected regularly and records retained for inspection

Persons at Risk: Identify all those who may be at risk.

Teaching Staff		Technical staff		Students		Office staff	
Maintenance staff		Cleaning staff		Contractors		Emergency personnel	
Visitors		Others					

Additional Information: Identify any additional information relevant to the activity, including supervision, training requirements, special emergency procedures, requirement for health surveillance etc.

The accompanying training manual contains all the information required to safely carry out this procedure. No deviation from the protocol is permitted. The equipment cannot be used for any other use other than for which it has been

stated in the technical manual.

Pupils are not permitted to operate the power pack or touch the equipment when the power is running.

Any questions or queries pertaining to the use of this equipment should be directed to the Easter Bush Science Outreach Centre, ebsoc@ed.ac.uk 0131 651 9679 before using the equipment.

Assessment carried out by:

Name:		Date:	
Position:			
Signature:			

Head of Science:

Name:		Date:	
Signature:			