Risk Assessment for School Science Activities

Name and nature of activity	Handling liquid nitrogen			
Location and date of activity				
Name of teacher/technician	Science ASSIST example risk assessment			
Activity type				
Physics and general equipment	Type of hazard Controls and other measures			
Dewar flask	A A		Relevant signage	
Dewar hask	Radiation 🖄 ionising 🛦 laser		Perspex safety shield	
	Electrical		Sharps container	
	☐ Thermal		Glassware free from cracks or chips	
			Safety glasses	
	Sharps		 Thermally insulated gloves Other – Appropriate trolley if necessary 	
	Other – Possible heavy lifting			
Chemicals used and produced	Type of hazard		Controls and other measures	
Liquid nitrogen		¥	Limit quantity/concent	ration
Nitrogen gas		Environmental	Perspex safety shield	haust
			S Fume cupboard	
	Flammable	Health hazards	Safety glasses	
		🛛 Other –	Laboratory coat/apron	l
	Oxidising	Cryogenic cold burns	Safety shower	
		 Asphyxiation 	 Other – PPE: Cold insulating gld 	waa full faaa abiald
	Gases under pressure	Pressure build up in	long pants with no cuffs, o	closed in shoes.
		closed vessels. Embrittlement of 	Ensure adequate ventila	ation: Never transport
		incompatible materials.	in an enclosed vehicle. N Dewar flask in a lift	ever accompany a
	ACTA	Fire due to oxygen	Do not place in sealed of	container
	Acute toxicity	enrichment.	• Do not use glass vessel	
			Keep away from combu	stible materials
Biological/geological materials	Type of hazard		Controls and other measures	
NA	Biohazard Dust/aerosols Sharps Manual handling		☐ Steriliser	
			Disinfectant	
			Sharps container	
			☐ Dust mask ☐ Safety glasses	
	Other –		☐ Other –	
Waste produced	Waste disposal procedure			
Surplus liquid nitrogen	 Pre-treatment of waste – Sink with water – Regular waste – Licenced hazardous waste company – Other – Boil off small amounts of liquid nitrogen in an operating fume cupboard or well ventilated area. Never pour LN2 down sinks or drains 			
Standard Operating Procedures				
I have read the relevant Standard Operating Procedure.				
☑ I am experienced/trained in using all the equipment listed.				
☐ All chemicals used and produced are approved for use.				
 I have read the current SDSs for all hazardous chemicals used and produced. I am aware of safety guidelines for using all chemicals, materials and equipment. 				
I will follow local guidelines for waste disposal (water authority, local council, EPA).				
 ☑ I am aware of first aid procedures if required. 				
Other comments: Follow all safety advice in SOP. In the event of a spill: evacuate and ventilate area.				
Conclusion:				
Risks not significant now and not likely to increase.				
☐ Risks significant but effectively controlled at the moment.				
Risks significant and not adequately controlled at the moment.				
Uncertain about risks; more detailed assessment required.				
Assessment carried out by:Science ASSIS				Date: June 2018
Assessment approved by:	Signature:			Date:
Next assessment due: This Risk Assessment assumes that the activity will be conducted in a science teaching area with the following facilities: electricity, running water, emergency shut-offs for				
electricity, gas if applicable, and water, regular testing and tagging of portable appliances; emergency contingencies such as evacuation/emergency plans, appropriate fire extinguishers, spill kits, hand washing facilities, eyewash/safety shower and first aid supplies. It is also assumed that all the necessary licencing requirements and approvals are obtained prior to the activity.				

