

SPARQ-ed Risk Assessment Sheet : SDS-Polyacrylamide Gel Electrophoresis

Description of Risk	Hazard				Analyse / Evaluate Risk			Overall Risk Category (see explanation on last page)						
	Source	Current Controls	Event	Category	Consequences	Exposure	Probability							
Electrophoresis : High voltages used ~100-200V, risk of electrocution	Electricity	Suitably maintained equipment. Stop power pack before removing lids or plates.	Risk of electrocution from direct contact with buffer containing an electrical current.	Contact with Electricity	Substantial : May need medical treatment	Occasional : Gels run often	Remotely Possible : May happen	Exposure						
								Prob	VR	R	U	O	F	C
								AC	Low	Mod	Subs	Subs	High	VH
								QP	Low	Low	Mod	Mod	Subs	High
								UP	Low	Low	Low	Mod	Mod	Subs
								RP	Low	Low	Low	Low	Low	Mod
								C	Low	Low	Low	Low	Low	Low
								PI	Low	Low	Low	Low	Low	Low
Gel Staining / Destaining : Preparation of staining/destaining solutions containing acetic acid and methanol	Chemical	Use in a well-ventilated area (fume hood) Wear PPE - lab coat, goggles and gloves Cover gels destaining in cling wrap when many are destaining at once Avoid all personal contact, including inhalation. Keep locked away and avoid naked lights, heat or ignition sources (methanol highly flammable).	Chemical spillage and a single contact with skin, can cause serious, irreversible damage of organs. Vapours potentially cause drowsiness and dizziness. If accidentally inhaled, can produce a burning or painful sensation in the mouth, throat, chest, and stomach	Single contact with chemical or substance	Substantial : Chemical exposure may need treatment	Unusual : Exposure is unusual	Remotely Possible : May occur with breakdown of controls	Exposure						
								Prob	VR	R	U	O	F	C
								AC	Low	Mod	Subs	Subs	High	VH
								QP	Low	Low	Mod	Mod	Subs	High
								UP	Low	Low	Low	Mod	Mod	Subs
								RP	Low	Low	Low	Low	Low	Mod
								C	Low	Low	Low	Low	Low	Low
								PI	Low	Low	Low	Low	Low	Low
Risk of Burns from Heating Sample : Heat samples at 95°C for 5 mins using either heating block, waterbath or hot plate	Thermal	PPE worn (gloves, labcoat, closed footwear) and safety glasses available. Seal lid of 1.5ml tube closed to prevent lid popping open when heated. Care when handling heated samples	Minor burns from heat block or hot plate. Steam burns from waterbath when lid is opened. Sample cap pops off causing aerosol production.	Contact or exposure to heat and cold	Minor : First aid for burns. Burns unlikely to be serious	Occasional : Samples are often heated before loading into wells	Unusual but Possible : Possible but PPE worn	Exposure						
								Prob	VR	R	U	O	F	C
								AC	Low	Low	Low	Low	Mod	Subs
								QP	Low	Low	Low	Low	Low	Mod
								UP	Low	Low	Low	Low	Low	Low
								RP	Low	Low	Low	Low	Low	Low
								C	Low	Low	Low	Low	Low	Low
								PI	Low	Low	Low	Low	Low	Low

Explanation of Overall Risk Categories

Exposure					
Very Rare (VR) – extremely rare (has not yet occurred)	Rare (R) – hardly every occurs (but has been known to occur)	Unusual (U) – does not occur often (from once per month to once per year)	Occasional (O) – sometimes occurs (from once per week to once per month)	Frequent (F) – occurs often (approximately once daily)	Continuous (C) – occurs repeatedly (or many times daily)

Probability (Prob)					
Almost Certain (AC) – is the most likely and expected result if the hazard event takes place	Quite Possible (QP) – is quite possible, not unusual, has an even 50/50 chance	Unlikely but Possible (UP) – Would be an unusual sequence or coincidence	Remotely Possible (RP) – would be a remotely possible coincidence	Conceivable (C) – has never happened after many years of exposure, but is conceivably possible	Practically Impossible (P) – has never happened after many years of exposure and is virtually impossible

Overall Risk Category				
Low – risk is normally acceptable	Moderate (Mod) – should be dealt with as soon as possible but situation is not an emergency	Substantial (Subs) – should receive attention as soon as possible	High – immediate correction required	Very High (VH) – immediate correction required

The Overall Risk Category for each element is highlighted in **green**.