Coronavirus (Covid-19): Latest updates and information

Engineering Risk Assessment Form

Assessment number:	5253 approved by Joanna Collingwood
Assessor name:	Jane Donnelly **Date:** 03/02/2020
Assessor email:	Jane.Donnelly@warwick.ac.uk
Staff supervisor name:	Joanna Collingwood
Title of this assessment:	Reduction of Amyloid-beta-copper
Description of activities:	Chemical reduction of Aβ-Cu(II) using reducing agents: sodium ascorbate, decamthylcobaltocene, sodium dithionite, and hydrazine hydrate.
Location:	School of Engineering
Persons at risk:	Students, staff

Identified Hazards

Hazard 1:	Inhalation, ingestion, skin contact, or eye contact with one of the reducing agents
Existing control measures:	Use of appropriate PPE including gloves, safety glasses, and lab coats. Specifications for glove material & safety glasses are listed in the relevant COSHH forms.
Additional control measures required:	
By whom and when:	

Evaluation of risk:

Severity of injury: Minor | Likelihood: Unlikely | Risk factor: Very low

Hazard 2:	Fire caused by ignition of hydrazine hydrate.
Existing control measures:	Hydrazine hydrate will only ever be opened in an inert N2 atmosphere, keeping it away from O2. It will be stored in a cool, well-ventilated cabinet and segregated from oxidizers and metals. It will be kept away from any sources of heat or ignition. No more than 0.005 mL of hydrazine hydrate will ever be used at a time. Lone working will not be permitted.
Additional control measures required:	Fire extinguishers will be kept in the lab (hydrazine fires can be extinguished by water spray, alcohol-resistant foam, or carbon dioxide). Hydrazine hydrate solutions will only be used at 55 wt% hydrazine or less (at this concentration in water, hydrazine does not have a flash point and the risk of autoignition is greatly reduced).
By whom and when:	Space owner (Dr. Joanna Collingwood)

Evaluation of risk:

Severity of injury: Serious | Likelihood: Unlikely | Risk factor: Low

Hazard 3:	Asphyxiation from leaking inert gas while using the N2 cylinder
Existing control measures:	Oxygen depletion calculations have indicated that this is very unlikely. Perform leak check after fitting to regulator or any amendments to distribution pipework. Training.
Additional control measures required:	All persons to be inducted to know what to do in the event of detection alarms sounding.
By whom and when:	Space owner (Dr. Joanna Collingwood)

Evaluation of risk:

Severity of injury: Serious | Likelihood: Unlikely | Risk factor: Low

Hazard 4:	Gas cylinder involved in fire becomes highly dangerous – various hazards
Existing control measures:	Remove gas cylinders to outside storage when no longer required. Fire protection measures. Signage and record keeping to ensure presence of cylinder is known
Additional control measures required:	All persons to be inducted to know what to do in the event of fire alarms sounding.
By whom and when:	School of Engineering staff responsible for new staff inductions, and/or space owner (Dr. Joanna Collingwood)

Evaluation of risk:

Severity of injury: Serious | Likelihood: Unlikely | Risk factor: Low

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Reviewed 11/05/2021: no amendments made to safety content, but to note that Jane Donnelly has moved from her post at Warwick. New users of this protocol first need induction from Prof Collingwood and then to be added to this document before commencing work.

11th May 2021