##

**ISOPROPYL ALCOHOL (ISOPROPANOL)**

## Scope

This document is intended to estimate potential human health and environmental risks posed by current and potential future conditions at **State Library of Queensland (State Library) Fabrication Lab** Facility. The risk assessment describes the approach to the risk assessment and facilitates appropriate ways to evaluate current and future risks.

Refer to the **Safe Operating Procedures** (**SOP**) for information regarding the safe usage and check list for this chemical.

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| Chemical Description: **Isopropyl Alcohol (Isopropanol)** |
| Leaders:  **Daniel Flood**  |
| Locations:  **The Edge Innovation Lab** |
| Assessment Date:  **09/09/2022** | Review Date:  |

*N.B. This assessment can remain active for up to 5 years. However, an annual monitoring and review process should be undertaken and recorded – refer to the last page of this document.*

*Below are the details of the manufacturing or production processes attributed to this chemical categorised by their assessed inherent risk levels (refer to the Equipment/Process Risk Matrix). The actions required for approval for each level of inherent risk are mandatory.*

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| **Inherent Risk Level** | **Details of Processes** | **Action Required/Approval** |
| 🗹 | **High** | * Spraying isopropyl alcohol on Prusa FDM printer build plate and wiping the plate with paper towel in preparation for printing part/s
* Spraying isopropyl alcohol on a printed circuit boards (PCB) to effect the removal of soldering flux residue using cotton buds
 | * Document controls in planning documents and/or complete this *Plant Risk Assessment*.
* Risk Assessment must be reviewed if chemical dispensed by any other means or for any other purpose except those described at left.
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Minimum standards

| Minimum qualifications and experience *Listed below are the general “minimum” recommendations for the management of this chemical.*🗹 *Indicate the minimum management controls.*  |
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|  X State Library Staff with experience, ability and competency in the safe use of this plant/equipment  *(indicate one or more of the following):*[x]  Specific knowledge of the safe and correct use of this chemical[x]  Experience (i.e. previous involvement and familiarity) in the safe use of this chemical[x]  Demonstrated expertise, ability and competency with this chemical[x]  Documented qualifications relating to the use of this chemical (e.g. in a staff profile) **OR** X A Contractor, other than a State Library staff member, with:[x]  Expertise in the safe and correct use of this plant/equipment[x]  Documented qualifications that demonstrate experience, ability and competency in the safe use of this plant/equipment. |
|  X Will any staff require initial and/or ongoing training for the safe use of this chemical? **Yes**If yes, give details:  **All staff to receive instruction in safe use of isopropyl alcohol as part of instruction in operation of FDM printers and soldering equipment.** |
|  X Will members be using this chemical? **Yes**If yes, state how member use of this chemical will be managed (e.g., Workshop Safety Induction)Give details:  **All members to receive instruction in safe use of isopropyl alcohol at the same time they receive instruction in operation of FDM printers and soldering equipment.** |
|  Further information if required:  |
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|  Minimum control requirements  |
|  Supporting documentation available in the Innovation Lab regarding this chemical includes: [x]  Product Container Labels[x]  Safe Operating Procedures (SOP) |
|  [x]  Safe Working Zones are defined for this chemical (e.g. yellow lines and/or appropriate signage)  |
|  [x]  Required personal protective equipment (PPE) is provided for all personnel using this chemical |
|  Further information if required: **Fabrication Lab Team Leader to designate Safe Working Zone** |

Hazards and control measures

*Listed below are indicative hazards/risks and suggested control measures. These are by no means exhaustive lists. Add details of any other hazards/risks or additional controls you intend to implement.*

🗹 *Indicate the control measures adopted. Detail their implementation and any additional controls required.*

| **Hazards/Risks** | **Hierarchy of Recommended** **Control Measures** | **Yes** | **No** | **Details of how this will be implemented***(and any additional controls)* |
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| **Exposure to Rotating****or Moving Parts:*** **Entanglement and**

**Entrapment**Could hair, clothing, ties, jewellery or other materials become entangled with moving parts of plant or materials in motion?* **Striking**

Could anyone be struck by moving objects such as the work piece being ejected, or by the unexpected or uncontrolled movement of the plant or work piece? * **Cutting, Stabbing**

**and Puncturing**Can anyone be cut, stabbed or punctured by coming into contact with moving plant or parts, or objects such as ejected work piece or waste? |  | [ ]  | [x]  |  |
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| **Slips, Trips, Falls** **and Abrasions:**Can anyone using the chemical or in the vicinity of the chemical, slip, trip or fall due to the working environment or other factors?e.g., Poor housekeeping, dust on floors, slippery or uneven work surfaces, power cables across work areas causing injuries and abrasions? |  | [ ]  | [x]  |  |
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| **Environmental:*** **Noise**

Is it likely that the normal use of this chemical will produce excessive noise levels?* **Dust, Fumes and**

**Vapours**Is it likely there will be airborne dust particles, toxic fumes or volatile vapours produced and therefore be present in the workspace?* **Vibration**

Is the normal use of this chemical likely to create severe or excess vibration that could be transferable to the operator?* **Lighting**

Is there insufficient lighting to utilise this chemical in a safe manner? Is there a possible strobe lighting effect caused by faulty fluorescent tubes in the workspace? |  | [ ]  | [x]  |  |
| 1. Provide adequate ventilation during and following normal product use.
2. Supervisor to instruct users on safe application of chemical.
3. In event of significant spill, Supervisor to immediately evacuate all personnel, remove all potential sources of ignition, and maximise available ventilation.
 | [x]  | [ ]  | **HVAC system will provide adequate air circulation in work area****Follow evacuation plan****Immediately suspend operation of all electrical tools and equipment****Turn off circuit breakers controlling room lighting and GPOs at electrical panel****Open all doors to speed dispersion of vapours** |
|  | [ ]  | [x]  |  |
|  | [ ]  | [x]  |  |
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| **Electrical:**Can the operator be injured by electrical shock due to working near or contacting with damaged or poorly maintained live electrical conductors such as power outlets, extension leads, safety switches, starters and isolators or casual water on the floor near plant and machinery? |  | [ ]  | [x]  |  |
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| **Exposure:*** **Friction**

Is the chemical likely to generate heat by friction? Could the user accidentally come into contact with moving materials or machinery components resulting in friction burns to the skin, particularly hands?* **Hazardous**

**Substances**Is it likely that the chemical user or others nearby in the workspace could be exposed to hazardous or toxic chemicals such as volatile vapours, fumes or airborne toxic wood dust particulates? |  | [ ]  | [x]  |  |
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| 1. All required PPE provided as per SOP
 | [ ]  | [x]  | **Under normal/prescribed usage, the extent and concentration of vapours resulting from the evaporation of isopropyl alcohol is within acceptable levels such that no respiratory protection is required.****Users are required to wear a nitrile glove on the hand/s that are likely to contact the chemical.****Provided chemical application is by spray bottle only, no eye protection is required.** |
| **Ergonomics and****Manual Handling:**Can the chemical be safely handled in a suitable location?  |  | [x]  | [ ]  |  |
| **Explosion and Fire:**As a consequence of using this particular item of plant and equipment, could anyone be injured by the release of stored energy triggered by volatile, explosive substances such as stored gasses, vapours or liquids? | 1. Supervisor to designate and enforce specific work zone for spraying isopropyl alcohol.
 | [ ]  | [x]  | **Designated work zone for dispensing chemical to be 5 metres away from all potential ignition sources.****No spraying of chemical permitted in any other location.** |
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| **Other Hazards/Risks** | **Additional Control Measures***These would relate to the specific student needs, locations and conditions in which you are conducting your activity.* |
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| **Approval** |
| Submitted by: **Steve Curran** | Date: **08/09/2022** |
| **[ ]**  | Approved as submitted. |
| **[ ]**  | Approved with the following condition(s):      |
| **[ ]**  | Not Approved for the following reason(s):      |
| By:       | Designation:       |
| Signed: | Date:        |

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| Staff members involved in the use of this risk assessment and the associated plant and equipment: |
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 | *Signature:*  ……………………………….. *Date:**Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:* *Signature:*  ……………………………….. *Date:*  |

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| **Monitoring and Review***This Plant and Equipment Risk Assessment is to be monitored and reviewed annually for a further four (4) years.* |

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| **Review 1:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 2:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 3:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* Staffing details have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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| **Review 4:** | **Yes**  | **No** |
| * Are allocated risk levels and “Actions required” unchanged over the past 12 months?
* Are Minimum Standards and Recommended Control Measures unchanged over 12 months?
* ITD staffing details at this school have remained unchanged over the past 12 months?
 | [ ] [ ] [ ]  | [ ] [ ] [ ]  |
| If the responses are “NO” for any question, record current details here, and list all staff changes *(with signatures)* |
| Reviewed by:  | Designation:  |
| Signed: | Review Date :  |

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