

HIRAC Report

Risk, Health and Safety

Title: Aerosols, Adhesives and Solvents	Authorized By:
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1. Hazard Management Details – General

This form relates to OHS Procedure – [Hazard Identification, Risk Assessment and Control \(HIRAC\)](#)

School / Work Location:	Ballarat Tech School (Fed College)
Name of Person(s):	Liam Mudge,
Date Conducted:	14/11/2023
Last Reviewed:	10/07/2020
Next Review Due:	November 2024

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<p>Description of Use:</p> <p>The Ballarat Tech School delivers a range of STEM curriculum projects. Some of these may be hazardous to user's health if safety procedures and lab etiquette are not followed.</p> <p>This document assesses the risk involved with:</p> <p>Aerosols: means non-refillable receptacles made of metal, glass or plastics, containing gas which is compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state.</p> <p>Adhesive: Chemical adhesives are those adhesives which polymer chains are formed and joined together to form the adhesive through various chemical reactions also called polyreactions. Therefore, a chemical reaction will be needed to produce the adhesive.</p> <p>Solvent: a substance that dissolves a solute, resulting in a solution. A solvent is usually a liquid but can also be a solid, a gas, or a supercritical fluid. The quantity of solute that can dissolve in a specific volume of solvent varies with temperature.</p>	<p>Summary of Key Risks: (Refer to appropriate subsections)</p> <ul style="list-style-type: none"> • Hazardous Substances • Flammability • Toxicity • Bodily Contact • Reactivity • Explosive substance
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Risk Assessment Matrix

Assessing OHS Risks

Risk assessments in matters of Occupational Health and Safety* are based on 2 key factors:

- The severity of any injury/illness resulting from the hazard(s), and
- The likelihood that the injury/illness will actually occur.

**Assessment of risk level based on likely severity and probability of harm*

		LIKELIHOOD			
		Very Unlikely Could happen, but probably never will	Unlikely Could happen, but very rarely	Likely Could happen sometime	Very likely Could happen any time
SEVERITY	Death or permanent disability	MEDIUM	HIGH	EXTREME	EXTREME
	Long-term illness or serious injury	LOW	MEDIUM	HIGH	EXTREME
	Medical attention and short-term incapacity	VERY LOW	LOW	MEDIUM	HIGH
	First aid needed	VERY LOW	VERY LOW	LOW	MEDIUM

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2. Documentation		
Relevant Legislation/Standards	Y / N	Comments
Is plant required to be registered?	N	
Is a user license required?	N	
Does this item require safe use documents/test?	Y	Check Chemical Register and appropriate MSDS for material being used.
Key reference material:		<ul style="list-style-type: none"> • Australian Code for the Transport of Dangerous Goods by Road & Rail, Ed 7.7, 2020, V1 • University of Wollongong Dangerous Goods Classes • Compliance code: Hazardous Substances, WorkSafe Victoria, 2nd Ed, Dec 2019 • Aerosol Association of Australia information.

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3. Hazards

Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
PRESSURISED CONTENT Can anyone come into contact with, fluids or gases under high pressure, due to plant failure or misuse of the plant?	Yes	Medium	Containers are pressurised vessels i.e. aerosol dispenser may pose an explosion or ignition risk if damaged, punctured or heated.	<ul style="list-style-type: none"> Only use chemical agents in accordance with their relevant MSDS documentation. Do not pierce or burn aerosols, or other pressurised vessels even when empty, as they may explode and seriously injure you and others. Do not use material if the container is damaged. 	Low

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Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
SUFFOCATION Can anyone be suffocated due to lack of oxygen, or atmospheric contamination?	Yes	Medium	Chemical agents may pose a risk of causing an "Oxygen depleted environment" suffocation/asphyxiation	<ul style="list-style-type: none"> Only operate chemical agents in appropriately ventilated workspace. Use fume-hood, fans as required to ensure adequate ventilation/movement of fumes. Never intentionally inhale fumes. 	Low

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Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
<p>CONDITION Is a hazard likely due to the age and condition of the container?</p>	Yes	Medium	<ul style="list-style-type: none"> Material may become contaminated or result cause inadvertent contact with user. Operation of a damaged aerosol dispenser may result in explosion. Spent/out of date chemicals may behave differently to expectations. 	<ul style="list-style-type: none"> Do not use material if the container is damaged. Either decant into appropriate secondary vessel or dispose of in correct manner as stated in the materials MSDS. Store in a cool, dry area. Damp conditions should be avoided to prevent corrosion of the dispenser. Keep well away from heat, sunshine, windowsills, heaters, and any ignition source. 	Low

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Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
<p>Bodily Contact Can anyone be injured by physical contact</p>	Yes	Medium	<p>These materials can cause:</p> <ul style="list-style-type: none"> • Eye irritation. • Bonding of skin to other surfaces. • Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. • Entry into the bloodstream, though, cuts, abrasions, or lesions, may produce systemic injury with harmful effects. 	<ul style="list-style-type: none"> • Review appropriate MSDS for material before using. Abide by the manufacturer's instructions for safe use. • Ensure works space is clean and free from obstructions. • Use appropriate PPE as required, gloves/glasses etc. • Ensure any open/exposed cuts are properly covered/dressed before using materials. 	Low

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Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
<p>FIRE & EXPLOSION Can anyone be injured by fire?</p>	Yes	Low	<ul style="list-style-type: none"> Aerosols, adhesives & solvents often contain flammable materials/components. Posing a risk of ignition or explosion if exposed to high temperatures or open flames. 	<ul style="list-style-type: none"> Must be kept well away from heat, sunshine, windowsills, heaters, ovens, barbeques and any ignition source Do not pierce or burn aerosols, even when empty, as they may explode and seriously injure. Do not spray on or near a naked flame, fire or source of ignition. Do not interact with ignition source or high heat source immediately after using aerosol, adhesive or solvent. As residue may ignite. 	Low

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Hazards Inspected		Initial Risk	Description of Risk	Control Measures	Residual Risk
<p>Inhalation Can anyone become injured by inhaling materials or by-products.</p>	Yes	High	<ul style="list-style-type: none"> • These materials can cause respiratory irritation. The body's response to such irritation can cause further lung damage. • Inhalation of vapours may cause drowsiness and dizziness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech, and may progress to unconsciousness. • Inhalation may also result in serious poisoning, respiratory depression and may be fatal. 	<ul style="list-style-type: none"> • Review appropriate MSDS for material before using. • Abide by the manufacturer's instructions for safe use. • Only operate in a well-ventilated space. • Use Fume-Hood and/or appropriate PPE as required. • NEVER deliberately inhale fumes. • Adopt stringent storage, handling, and disposal precautions as per MSDS and product instructions. • Do not allow fumes/vapours to collect in shallow or enclosed workspaces. 	Low

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4. Risk Assessment Signoff

Authorised By: Albert Ferguson	Signature: A-Ferguson	Date: 16/01/2024
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