THOMPSON RIVERS UNIVERSITY | Risk & Safety Services

Safe Work Procedure

Microbiology Lab Safety

RSS 20.10.3

Program/Services	**Safe Work Procedures**		**Department:**
Biosafety Instructors & students			Safety and Emergency Management
Personal Protective Equipment or Devices Used • Safety Glasses/Goggles • Closed toed shoes • Laboratory Coat	**Training Requirements** • In class safety training	**Applicable Documents**	**Effective Date:** May 23, 2019 Revised: August 1, 2024

FIRE	EXPLOSION	CHEMICAL OR THERMAL BURN
		
• Know location of fire alarm stations, fire extinguishers and fire exits. • Ensure fire extinguisher on hand is appropriate for fires that may occur within the facilities in question. • Keep area around and near open flames in the lab clear of obstructions. • Do not keep volatile solvents in open beakers. • When manipulating flammable chemicals, do so in a certified, operating fume hood with the sash pulled down to a protective level. • Turn off burners when not in use for aseptic technique and always ensure burner area is clear of clutter and any flammable and any other unnecessary chemicals. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when using open flames or handling flammable materials: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Respirators and heat resistant or other specialized hand protection use may be necessary for some heating protocols and other chemical manipulations. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.	• Never heat a closed system. • When heating of a potentially explosive chemical, do so in a certified, operating fume hood with the sash pulled down to a protective level. • When heating a vessel with a closable lid is necessary, ensure the vessel lid is loosely closed to ensure building pressure can escape to the outside environment. • Turn off burners when not in use for aseptic technique and always ensure burner area is clear of clutter and any hazardous or other unnecessary chemicals. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment if handling potentially explosive materials: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Respirators and heat resistant or other specialized hand protection use may be necessary for some heating protocols and other chemical manipulations. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.	• Always assume hot plates are hot. • Many organic and inorganic chemicals are corrosive to the skin and eyes. • When volatile or toxic chemicals/substance heating and/or manipulation is necessary, do so in a certified, operating fume hood with the sash pulled down to a protective level. • Turn off burners when not in use for aseptic technique and always ensure burner area is clear of clutter and any hazardous or other unnecessary chemicals. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any laboratory chemical: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Respirators and heat resistant or other specialized hand protection use may be necessary for some heating protocols and other chemical manipulations. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.

EYE INJURY	ABSORPTION OF CHEMICALS	INGESTION OF CHEMICALS
		
• Always assume hot plates are hot. • Many organic and inorganic chemicals are corrosive to the skin and eyes. • When volatile or toxic chemicals/substance heating and/or manipulation is necessary, do so in a certified, operating fume hood with the sash pulled down to a protective level. • Turn off burners when not in use for aseptic technique and always ensure burner area is clear of clutter and any hazardous or other unnecessary chemicals. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any laboratory chemical: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Respirators and heat resistant or other specialized hand protection use may be necessary for some heating protocols and other chemical manipulations. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.	• Keep chemicals off the skin. • Organic substances are absorbed through the skin even if they do not burn or are corrosive. • Repeated exposure may result in contact dermatitis. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any laboratory chemical: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Respirators and heat resistant or other specialized hand protection use may be necessary for some heating protocols and other chemical manipulations. • When appropriate, to prevent splash hazards, do as much chemical manipulation as possible so in a certified, operating fume hood with the sash pulled down to a protective level. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.	• Do not ingest any laboratory chemicals. • Never use mouth suction for pipettes. • Wash hands before and after performing any activities in a TRU laboratory facility. • Do not eat or drink in the lab. • Do not store food or drink in the lab. • To further protect, always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any laboratory chemical: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • When appropriate, to prevent splash hazards, do as much chemical manipulation as possible so in a certified, operating fume hood with the sash pulled down to a protective level. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.

INHALATION OF CHEMICALS	LACERATION	BIOHAZARDOUS INFECTIOUS MATERIALS
 • NEVER *sniff* a product to establish what it is. If odour of a chemical is necessary, instead waft the chemical. • Proper wafting technique includes: 1. First, hold the chemical vessel at a comfortable distance, away from the face near waist level. 2. Next, cup the free hand over the mouth of the vessel and gently move the cupped hand towards the face. 3. Breathe in only as much as required to detect the odour of the chemical in question. • Many common solvents are toxic if inhaled in any quantity or over a period of time. • When manipulating any laboratory chemicals, when possible do so in a certified, operating fume hood with the sash pulled down to a protective level. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any laboratory chemical: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Properly fitted respirators use will also minimize chemical inhalation risk. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage.	 • Lubricate rubber stoppers before trying to force onto glass. Use gentle pressure with rotation on the glass part. • Wear specialized cut resistant hand protection if available. • Wash hands before and after the use of disposable gloves. • Keep workspace clear of unnecessary materials. • Label all laboratory chemicals with appropriate hazard signage. • Keep workspace clear of unnecessary materials. • Inoculating loops and needles should be flame sterilized before being laid down on any surface. • Always use new, disposable gloves to handle biological material and replace gloves before assuming any unrelated tasks. • Inoculating loops and needles should be flame sterilized before being laid down on any surface. • Observe Containment Level laboratory practices for the biological materials in use. If Containment Level 1, use good microbiological lab practices. For Containment Level 2 materials, the use of an appropriate Biosafety Cabinet is necessary.	 • Wash hands with disinfectant soap upon arrival at the lab and before you leave. • Food, drink, chewing gum, or smoking/vaping of any kind is strictly prohibited in the microbiology labs. • Always wear properly fitted and inspected TRU laboratory mandated personal protective equipment when handling any biological material: safety glasses or goggles, closed toed shoes, laboratory coat, and gloves. • Wash hands before and after the use of disposable gloves. • Always strictly adhere to good aseptic technique when performing microbiological laboratory activities. • Disinfect work stations before initiation of any activities. • Sterilize all equipment before and after work activities. • Avoid opening biological cultures in the laboratory, unless within a certified, functioning, and disinfected Biosafety Cabinet. Even within these, leaving any vessel or culture should be avoided t avoid culture contamination. • Treat all animal and human fluids, cells, cell lines, tissues, organs, blood, and blood fractions as infectious and handle only under Containment Level 2 conditions. • Do not recap needles and dispose of used needles, used blades, and broken glass in appropriate sharps containers. • Properly dispose of biohazardous waste in accordance with TRU policies. • If centrifuging biological materials, ensure vessel caps are tightly closed and the centrifuge is well balanced to prevent the generation of aerosols.

PROCEDURES AND RESPONSIBILITIES

Containment Level 1 Laboratory Practices:

- Laboratory doors should be kept closed and access to laboratory areas must be limited and controlled.
- People must be advised of potential hazards before entering the work area.
- Mouth pipetting is strictly prohibited.
- Eating, drinking, smoking, vaping, applying cosmetics, handling contact lenses, chewing gum and/or storing food is not permitted in the laboratory areas.
- Work surfaces should be decontaminated before and after work activities and after any spill.
- Work areas should be clear of clutter.
- Employees must wash their hands upon arrival at the laboratory, before and after putting on protective disposable gloves, after handling infectious materials, and before leaving the laboratory.
- All spills, accidents and possible exposures to infectious materials must be reported immediately to the Laboratory Supervisor and the University Biosafety Officer.
- The Lab Supervisor will ensure that training in laboratory safety for infectious materials is provided. This includes but is not limited to:
    - Technical training, exposure prevention precautions, and exposure evaluation procedures
    - Informational and technical updates and additional training when required.
    - Personal health precautionary materials, which can include relevant vaccine information, specialized risk precautions for pregnant or immunocompromised individuals
- If a member of an increased risk group, encourage self-identification to campus Health Services for appropriate counselling and guidance.
- All contaminated or infectious liquid or solid materials must be decontaminated before disposal or re-use.
- Where infectious agents are used in a laboratory, a biohazard warning sign incorporating the universal biohazard symbol must be posted on the access door to the work area.
- Decontaminate all cultures, stocks, and other potentially infectious materials before disposal using an effective method. If transporting waste prior to decontamination, ensure materials are placed in a durable, leak-proof container and packed in accordance with applicable institutional, local, provincial, and federal regulations.
- Safe handling of sharps includes:
- Disposable needles are not to be manipulated, bent, sheared, broken, removed from syringe base or recapped before disposal. Likewise, blades, broken glass or other sharps must also be treated with care and not handled or manipulated prior to disposal.
- Used disposable needles and syringes must be carefully placed in a convenient, puncture resistant sharps container.
- Non-disposable sharps are to be placed in a convenient hard walled container for transport to a decontaminating area.
- Broken glass is not to be handled directly. Alternatively, all broken glass is to be collected with a broom and dustpan, tongs, or forceps. Substitute plastic for glass whenever possible.
- An applied effective laboratory pest management program is required for safe laboratory operations.
- Equipment must be decontaminated before removal from laboratory for service and/or repair.
- Laboratory furniture must be in good repair.

Inoculation of Culture Media:

- For microbiological investigations it is essential to learn the skills of inoculating specimens onto culture media:
- Always practice aseptic technique clean work area with supplied disinfectant before beginning your work and upon completion.
- Ensure loops and picks are flamed upon completion of your work
- Discard any waste bio-hazardous material in the appropriate area, to ensure adequate disinfection is completed.

Containment Level 1 Laboratory Personal Protective Equipment Practices:

- At a minimum, a lab coat, closed-toe shoes, eye protection (when necessary), and protective, disposable gloves must be worn in any microbiology laboratory. This equipment prevents bio-hazardous materials from contact with the skin and eyes, including areas where there might be cuts, abrasions, or dermatitis.
- Prior to initiating any work, review the relevant SDS and PSDS associated with the intended activity and keep them close at hand for quick reference.

Lab Coats:

- Must be worn by all personnel, including visitors, trainees and others entering or working in the laboratory.
- Coats must be properly fastened.
- Prior to donning a lab coat, carefully inspect the lab coat for holes, tears, evidence of contamination, and inside the pockets for debris. If any of these are found, notify lab supervisor/staff and obtain a new lab coat, which must be inspected for holes, tears, contamination, and debris prior to use. Only use lab coats that are free from the above deficiencies.
- If contaminated, lab coats should be decontaminated by autoclaving before being placed in the laundry. If decontamination is not possible, any contaminated coat should be placed in the biohazard waste container.
- Other articles of clothing, if contaminated during the course of lab work must also be likewise decontaminated.

Gloves:

- Must be worn for all procedures performed in the microbiology laboratories involving infectious or potentially infectious materials.
- Glove selection should be based on appropriate risk assessment (Table 1).
- Latex or nitrile gloves offer a high level of dexterity and a higher level of sensitivity; however, they do not offer a great deal of protection from needle sticks, animal bites or sharps.
- Some procedures may require double gloving.
- Prior to donning gloves, inspect them for thinning areas, holes, tears, and other imperfections that could impede their protective qualities. Discard gloves with any of the above imperfections and obtain new gloves. Only use gloves that are free from deficiencies that could impede their protective functions.
- Change gloves periodically during work functions and also when they become contaminated, their integrity is compromised, or when otherwise necessary.
- Do not wash or reuse disposable gloves.
- Gloves must be removed prior to leaving the laboratory and placed in a biohazard waste receptacle for decontamination with other laboratory wastes before disposal.
- Safe glove removal includes: grasping one glove at the top of your wrist, being careful not to touch bare skin. Peel this glove off, away from your body, turning it inside out. Hold that glove you just removed in your gloved hand. Insert non-gloved hand into the cuff of the glove at the top of your wrist. Turn this glove inside out while tilting it away from your body. Dispose

of the gloves – do not reuse.

Table 1: Available glove types and their respective advantages and disadvantages.

TYPE	ADVANTAGES	DISADVANTAGES	FOR USE WITH:
Natural rubber latex and rubber blends	**Good Biological Protection.** Low cost, good physical properties, dexterity.	Poor for solvent use and ethidium bromide. May cause allergic reactions.	**Biological Materials.** Aqueous solutions, bases, acids, alcohols, dilute aqueous solutions.
Polyvinyl chloride (PVC)	**Good Biological Protection.** Low cost, very good physical properties, average chemical resistance.	Plasticizers can be stripped.	**Biological Materials.** Strong acids and bases, salts, aqueous solutions, alcohols, oils, greases and petroleum products.
Neoprene	**Good Biological Protection.** **Average cost, average chemical resistance, average physical properties, high tensile strength, high heat resistance.**	Poor vs. chlorinated hydrocarbons	**Oxidizing acids, alcohols, anilines, phenol, glycol ethers, solvents, oils, mild corrosives**
Nitrile	**Excellent Biological Protection.** **Best needle wiping capacity.**	Poor vs. chlorinated organic solvents	**Biological Materials.** **Syringe/Needle work.** **Oils, greases, aliphatic hydrocarbons, xylene, perchloroethylene,**

	Low cost, excellent physical properties, dexterity.		**trichloroethane, ethidium bromide.** **Fair vs. toluene.**
Butyl	**Good resistance to polar organics, high resistance to gas and water vapour**	Expensive, poor vs. hydrocarbons, chlorinated solvents	**Glycol ethers, ketones, esters, aldehydes, polar organic solvents**
Polyvinyl alcohol (PVA)	**Resists broad range of organics, good physical properties.**	Very expensive. Water sensitive, poor vs. light alcohols, acids and bases.	**Aliphatic and aromatic hydrocarbons, chlorinated solvents, ketones (except acetone), esters, ethers**
Fluro-elastomer (Vitron®)	**Good resistance to organic and aromatic solvents. Flexible.**	Extremely expensive. Poor physical properties. Poor vs. some ketones, esters, amines	**Aromatics and aliphatic hydrocarbons, chlorinated solvents, oils, lubricants, mineral acids, alcohols.**
Norfoil, Silver Shield™, 4H™	**Excellent chemical resistance.**	Poor fit, stiff, easily punctures, poor grip.	**Use for Hazmat work. Good for range of solvents, acids and bases.**

Protective Eyewear:

- The use of contact lenses in laboratories is discouraged. Instead wear safety glasses on top of prescription lensed glasses for work functions, or alternatively, use prescription safety glasses.
- Protective eyewear must be worn when aerosols and splashes are a risk or when large volumes are being used.
- Protective eyewear should fit comfortably and snugly while not interfering with personnel activities.
- Safety glasses are sufficient protection for most laboratory activities.
- If there is increased splash risk personnel should instead wear protective goggles or a full face shield.
- Damaged eye protection should be replaced immediately.

Closed toed shoes:

- Closed toed shoes are mandatory laboratory PPE.
- Sandals and other similar open toed shoes are forbidden in laboratory areas.
- Closed toed shoes should be non-slip and provide full foot protection.
- Safety laboratory shoes are not required but provide additional protection from chemical, biological, thermal, electrical, and kinetic hazards.

Containment Level 2 Laboratory Practices:

- All containment level 1 practices detailed in previous sections are to be applied, however other precautions that are necessary follow below.
- Personnel should be provided with appropriate medical surveillance and offered immunizations for infectious agents they may be exposed to during work activities.
- Consideration for collection and storage of serum samples should be carried out for at-risk personnel.
- Biosafety manual and approved certificate describing permissible laboratory activities must be made available to relevant personnel.
- Adequate training for laboratory staff in standard and specialized microbiological techniques by the Laboratory Supervisor prior to working with BSL-2 materials.
- Demonstrated competency by laboratory staff in regular and specialized microbiological techniques by the Laboratory Supervisor prior to working with BSL-2 materials.
- Potentially infectious exposure incidents must be evaluated immediately and treated according to procedures described in the laboratory Biosafety Certificate. All such incidents must be recorded and reported to and addressed by the laboratory supervisor, the TRU Biosafety office, and health services.
- Animals and plants not associated with the projects that are being conducted must not be permitted in the laboratory.
- All procedures involving the manipulation of biological material that could generate an aerosol should be conducted within an operational, certified Biosafety Cabinet (BSC).

Additional Personal Protection, Safety Practices, and Equipment for Containment Level 2 Laboratory Operation:

- All containment level 1 practices detailed in previous sections are to be applied, however other precautions that are necessary follow below.
- Properly maintained and certified BSCs, other appropriate PPE, and other physical containment devices must be used during:
- All work with human blood, blood fractions, cells, cell lines, tissues, and organs where there is splash or aerosol generation risk.
- Procedures and activities where splash or aerosol generation could occur. This can include pipetting, centrifuging, grinding, blending, shaking, mixing, sonicating, opening containers, opening infectious materials, intranasally inoculating animals, and harvesting infected tissues from animals or eggs.
- All procedures which involve high concentrations and/or large volumes of infectious materials and/or toxins.
- Additional protective gowns, aprons, coats, coveralls, smocks, or scrubs should be worn when available to prevent personnel contact with infectious agents or biological materials.
- Contaminated protective clothing should be disposed of in the hazardous waste receptacles or laundered appropriately via institutional guidelines.

- BSCs must be installed so that fluctuations in air supply and exhaust do not interfere with normal operations. They should also be away from doors, windows that open, heavy traffic areas, and other sources of possible airflow disruption.
- BSC vacuum lines should be protected with disinfectant traps.
- An eye wash station should be readily available.
- Only HEPA filtered exhaust air from a certified and tested Class II BSC, can be safely recirculated back into the laboratory environment.
- Lab doors must lock and laboratory furniture must be in good repair.

Inoculation of Culture Media within a BSC for CL2:

- Containment level 1 practices (section 5.2) will be observed however, additional care is required for safe work in a BSC.
- Cabinet blowers should be engaged at least 5 minutes before initiating work in a BSC. Never operate BSC blower wish sash lowered completely.
- Prior to engaging in work within the BSC, the interior surfaces of the BSC should be decontaminated with 70% isopropyl or ethyl alcohol or other specified decontaminant, where effective for target organisms.
- Decontaminant choice and contact times depend on the biological material in question and therefore, different decontamination protocols and materials may be required for safe BSC operation and decontamination. For a general guide to BSC decontamination with various biological materials, see Table 2.
- According to the 2016 Canadian Biosafety Standard, published by PHAC, moist heat (autoclaving in excess of 121°C for 60 minutes) will permit adequate inactivation of most biological toxins. However, this is not suitable for inactivation of low-weight, heat-stable toxins (e.g. Anthrax). Similarly, 30 minutes of contact with a solution of 2.5% NaOCl and 0.25N NaOH is adequate for inactivation of most biological toxins.
- In some cases, however, different protocols are required. Please see Table 3 in this document for some examples of effective biological toxin decontaminating agents. If the toxin in use does not appear on this list, please contact the Biosafety Office for decontamination protocols.
- If unsure of anything to do with toxins, please contact the Biosafety Office – NEVER work with a biological toxin with which you are unsure of PPE or decontamination requirements and protocols.
- If a 10% bleach solution is to be used to decontaminate the interior of the cabinet, its application should be followed by removal with abundant sterile water or 70% isopropyl or ethyl alcohol.
- Materials that are to be placed inside the cabinet should be surface-decontaminated with 70% isopropyl or ethyl alcohol.
- No paper or other objects should be allowed to obstruct the front grill of the BSC.
- Do not use an open flame in a BSC.
- Personnel should plan their work ahead such that sweeping arm movements within the cabinet are limited. This can be solved by dividing the interior of the cabinet into clean and dirty working areas.
- While working, keep sash lowered enough to maintain BSC interior isolation, but also so that personnel can work comfortably.
- Any materials that are removed from inside the cabinet should be surface-decontaminated with 70% isopropyl alcohol, unless otherwise specified.
- Discard any waste bio-hazardous material in the appropriate area, to ensure adequate disinfection is completed.
- Once work is completed, decontaminate the interior of the BSC as previous described, turn off the blower and completely lower the sash.

- If UV lamps are used as an infection prevention device, they must be regularly cleaned and tested every 6 months to ensure adequate energy output. The sash must also be completely lowered if UV lighting is engaged.
- The radiation output of the lamp must be measured routinely (at least twice yearly) with a UV meter to ensure that the proper intensity (40 μW/cm2) and wavelength (254 nm) are being delivered to the work area.

Table 2: Disinfectant Selection for various pathogens.

Biological Material	Chlorine Compounds (10% household bleach, make fresh monthly)	Alcohols (70% solutions most effective)	Phenolics (dilute according to manufacturer's instructions – useful for organic matter clean up)	Quaternary Ammonium Compounds (cationic detergents)	Glutaraldehyde	Formaldehyde
Bacteria	Very good	Good	Good	Good for gram positive	Good	Good
Enveloped viruses	Very good	Good	Good	Good	Good	Good
Non-enveloped viruses	Very good	Virus-dependent	Virus-dependent	Ineffective	Fair, 20 min contact time	Good
Fungi	Good	Fair	Good	Fair	Good	Good

Bacterial spores	Good with high concentration	Ineffective	Ineffective	Ineffective	Fair, 30 min contact time	Good
Protozoal parasites	Moderate with high concentration and several hours of treatment	Ineffective	Ineffective	Fair at high concentrations	Good	Good
Prions	**Special** – require 1M of this or NaOH for 60 minutes and then autoclave for 1 hour at 121°C – preferable to use disposable instruments and lab ware	Ineffective	Ineffective	Ineffective	Ineffective	Good

Table 3: Example Toxin Inactivation Guide

Toxin	Autoclave, 60min, 121°C	NaOCl, 30 min	NaOCl + NaOH, 30 min	Remarks
Abrin	YES	0.1%	Not determined	
Anthrax Lethal Toxin	YES	0.5%	2.5% NaOCl +0.25 NaOH	
Botulinum neurotoxins	YES	0.1%	2.5% NaOCl +0.25 NaOH	
Brevetoxin	NO	2.5%	2.5% NaOCl +0.25 NaOH	
Cholera toxin	YES	0.5%	Not determined	
Conotoxin	NO	0.5%	Not determined	30 minute treatments of 1% (v/v) solutions of glutaraldehyde or formaldehyde are also effective.
Deoxinalenol	NO	2.5%	2.5% NaOCl	

			+0.25 NaOH	
Diacetoxyscirpenol	NO	NO	2.5% NaOCl +0.25 NaOH	
Diphtheria toxin	YES	0.5%	2.5% NaOCl +0.25 NaOH	
Microcystin	NO	0.5%	2.5% NaOCl +0.25 NaOH	
Ricin		0.1%	2.5% NaOCl +0.25 NaOH	
Saxitoxin	NO	0.1%	2.5% NaOCl +0.25 NaOH	
Shigatoxin and Shiga-like ribosome inactivating proteins	YES	0.1%	2.5% NaOCl +0.25 NaOH	

Staphylococcal enterotoxins	YES	0.5-1.0%	Not determined	60 minute contact time required
T-2 mycotoxin	NO	NO	***2.5% NaOCl +0.25 NaOH	2-8 hour soak required for gross contamination
Tetanus toxin	YES	0.5%	Not determined	
Tetrodotoxin	YES	1.0%	2.5% NaOCl +0.25 NaOH	

ASSOCIATED DOCUMENTATION

Doc. Number	Doc. Title

RECORDS/VERIFICATION OF UNDERSTANDING

A training master log will be maintained by users of the BioSafety Lab.

SUMMARY OF CHANGES

Revision #	Date	Change (include section #)	Issued By
1	03/04/2014	NEW	OHS Officer
2	04/10/2019	Review	Safety Officer
3	08/01/2024	Update OSEM to RSS	Safety Advisor