

SUBJECT: General Shop Safety

REGULATORY STANDARD: 29 CFR 1910

DATE: January 2000

Employee Training

Employees must be thoroughly trained in the safe operation of equipment, tools and machinery they are required to use and in the use of personal protective equipment that is required to protect them from the hazards associated with the equipment, etc.

Personal Protective Equipment

Personal protective equipment (PPE) is not a substitute for engineering controls or administrative procedures that can be implemented to control hazards. However, when these controls do not eliminate hazards, PPE must be used to protect the employees from hazards of the job. Personal protective equipment includes respiratory and hearing protective devices, special clothing and protective devices for the eyes, face, head, and extremities. See Montana Tech's Personal Protective Equipment Program for more details.

Eye Protection

Eye protection is required when there is a possibility of injury from chemicals or flying particles. Examples of operations requiring the use of eye protection include, but are not limited to:

- Welding, soldering, grinding
- Using power equipment or tools of any kind
- Handling chemicals

Hearing Protection

Appropriate hearing protection should be used when employees are in hazardous noise areas such as the boiler room, or when using tools or equipment that produce high noise levels. The Office of Environmental Health and Safety is available to provide noise level surveys and guidance on the type of hearing protection required.

Hand Protection

Personnel working with acids, alkalis, organic solvents, and other harmful chemicals must wear appropriate protective gloves. Check the Chemical Hygiene Plan, Appendix B, for a guide for choosing gloves.

Electrical worker's gloves should be used to insulate electrical workers from shock, burns, and other electrical hazards. These gloves cannot be the only protection provided and can never be used with voltages higher than the insulation rating of the gloves.

Multi-use gloves should be worn to protect the hands from injuries caused by handling sharp or jagged objects, wood, or similar hazard-producing materials

Foot Protection

Non-skid shoes should be worn where floors may be wet or greasy. Where there is reasonable probability of foot or toe injury from impact and compression forces, safety footwear should be worn.

Respiratory Protection

Montana Tech has a Respiratory Protection Program in force. If an employee is required to perform job duties that would require the use of respiratory protection, contact the Office of Environmental Health and Safety.

Head Protection –

Hardhats should be worn by all personnel working below other workers and in areas where sharp projections or other head hazards exist.

Body Protection

Natural or synthetic rubber or acid-resisting rubberized cloth aprons should be worn by personnel handling irritating or corrosive substances.

General Safety Rules

- Shop supervisors must ensure that shop personnel use the protective clothing and equipment that will protect them from hazards of the work they perform. The workers are responsible for using the equipment when required and for keeping their PPE clean and sanitary.
- Workers should keep their hands and face clean, change clothes when they are contaminated with solvents, lubricants, or fuels.
- Food or drink should not be brought into or consumed in areas exposed to toxic materials, chemicals, or shop contaminants. Workers should wash their hands before eating or smoking after exposure to any contaminant.
- Workers should not wear rings, earrings, bracelets, wristwatches, or necklaces in the vicinity of operating machinery and power tools.
- Long full beards, unrestrained long hair, and loose clothing should not be allowed near machinery as they can become caught in tools or machinery and

cause serious personal injury.

- Highly combustible garments or coveralls made of material such as nylon should not be worn in or around high temperature equipment or operations such as boiler operations, welding, and any other work with open flame devices.

Housekeeping

Good housekeeping should be maintained at all times. The following guidelines should be followed:

- Materials should not be placed where anyone might stumble over it, where it might fall on someone, or on or against any support unless the support can withstand the additional weight.
- Aisles and passageways must be kept clear of tripping hazards.
- Nails should be removed from loose lumber or the points turned down.
- Trash and other waste materials should be kept in approved receptacles. Trash should not be allowed to accumulate and should be removed and disposed of as soon as practicable.
- Access to disconnect switches, distribution panels, or alarm supply boxes must not be blocked.
- Machinery and equipment must be kept clean of excess grease and oil and (operating conditions permitting) free of excessive dust. Pressure gauges and visual displays should be kept clean, visible, and serviceable at all times. Drip pans and wheeled or stationary containers should be cleaned and emptied at the end of each shift.

Use of Compressed Air Sources

- The maximum air pressure approved for general use in the shops and laboratories is 30 psi (pounds per square inch). This pressure is sufficient for most shop and laboratory operations and is not significantly hazardous. Use discretion and good judgement when using compressed air, even at this low pressure.
- The following rules and practices are suggested to avoid personal injury, equipment damage, and potential environmental impact:
 1. All personnel assigned to shops with air compressors should be familiar with compressor operating and maintenance instructions.

2. The maximum working pressure of compressed air lines should be identified in psi. Pipeline outlets must be tagged or marked showing maximum working pressure immediately adjacent to the outlet.
3. Do not use compressed air to clean machinery or parts unless absolutely necessary. Where possible, use a brush. If you must use compressed air, use a minimum pressure and provide barriers or clear the area of personnel. Wear goggles to protect your eyes.
4. Never use compressed air to clean dust or particles from clothing. The pressure is capable of injecting the contaminants into your skin.
5. Inspect air supply and tool hoses before using. Discard and label unfit hoses. Repair hoses where needed.