

VAIL Safety and Operations

Safety is the number one priority at the Volkswagen Automotive Innovation Lab (VAIL). No project, no matter how important, is worth a physical injury.

The following paragraphs list the safety and operational policies that must be followed by all lab users. Instructions from building management need to be followed at all times. The building management should be contacted for further information or if further clarification is required.

1. Emergency Procedures

- All lab users must familiarize themselves with the location and use of safety equipment:
 - First aid kits
 - Safety showers
 - Small spill kit
 - Fire extinguishers
 - Fire alarms
 - Evacuation route including emergency assembly point (EAP)
- VAIL EAP: Southwest corner of Oak Road and Stock Farm Road
- VAIL building alarm: All persons proceed to the VAIL EAP to check in.
- Multiple building alarm: All persons proceed to the VAIL EAP to check in. If safe to do so, all persons proceed to their respective home department EAP.
- Earthquake: If possible, cover should be taken under a table / bench away from windows and tall / heavy objects. The building should be evacuated after the shaking stops.
- Registered lab users assist their visitors in case of an emergency.

2. Accidents and Incidents

- Emergency: 911 must be called immediately to get help. (dial '9' first on office phone)
- Injury: Medical attention must be sought immediately and the building management should be notified as well as the respective supervisor / principal investigator. An SU-17 or SU-17B Accident, Incident, or Exposure Report must be completed within 24 hours of the incident. The forms can be found at: <https://ehs.stanford.edu/forms-tools>.
- Suspicious activity: 911 should be called to report suspicious activity. (dial '9' first on office phone)
- Spill assistance: EH&S (650) 725-9999 must be called if spill is over 1 ounce.
- Repair & maintenance: Call building management (Larry @ (734) 652-9898) to report any repair/maintenance needs.
- Concerns & suggestions: Contact building management.

3. Alarm System and Building Security

The building is equipped with an alarm system that is operated by timer and card readers. Operators at VAIL after hours will need to periodically swipe their badge at the alarm panel. Further instructions will be distributed as needed by lab management. The alarm system auto-arms at 9:00 PM daily and auto-disarms at 6:00 AM daily.

If an alarm is triggered, the security service company, California Security, will call the premises at 650-498-8247 (VAIL lounge phone) to determine the situation. If the phone is answered, the person answering will be asked for name, phone number, what they are wearing and notified to wait outside the facility for a deputy that will be dispatched. **Do not move away from the premises after such an incident until Stanford Public Safety arrives.**

4. Lab User Registration and Building Access

- Every person that performs work on machines or vehicles needs to be registered and approved by the building management.
- All lab users must complete the shop safety class offered at VAIL before using the facilities.
- All lab users must complete all necessary STARS training units before using the facilities. (See appendix for details)
- Building management will assist to determine the individual level of training that is required.
- Personal keys or access codes may not be given nor shared with anyone else.
- Non-approved persons must not work on machines or vehicles at VAIL.
- All visitors must be escorted by registered lab users.
- Only the lounge may be used as an unattended waiting area.
- Overnight stay in building or on premises is not permitted.
- Outside doors need to be locked if there are no visible VAIL members in the main lab area.
- Garage doors / gates need to be attended while open.
- Building management may withdraw privileges of lab users if necessary.

5. Building Operations

- All spaces are shared facilities. Permanent offices may not be established.
- Permanent storage of items is to be limited to a minimum.
- Private vehicles are not permitted to be parked on premises nor the VAIL parking lot except for the purposes of loading/unloading and while the driver is on the premises, or unless they are permitted visitors (red permit pass).
- All facilities must be cleaned and maintained by its users.
- All food / beverages in the lounge refrigerators need to be labeled with owner's

name and storage date. The building management reserves the right to discard unlabeled or spoiled items.

- All dishes and utensils should be cleaned immediately after use.
- Chemicals or non-food items are not permitted in the lounge refrigerators.
- Reservations for conference room and seminar room need to be scheduled.
Reservation requests need to be sent to building management by email.
- Special closures, block outs, openings of the building or sections of the facility must be reserved in advance, announced to the building community, and adhered to.
- Building management may grant exemptions to these rules.

6. General Use of Equipment

- “Equipment” refers to tools, machines, processes, materials, vehicles, chemicals and other if applicable. “Use” refers to work, operation, application, handling, etc.
- Equipment is generally owned and maintained by the respective labs.
- All equipment to be used at VAIL must be registered and approved by the building management.
- Building management will decide for which equipment Standard Operating Procedures (SOP) need to be provided by the respective users.
- The Department of Environmental Health & Safety (EH&S) reviews all SOPs.
- All applicable safety precautions need to be taken when using any kind of equipment.
- All applicable SOPs need to be reviewed before using any kind of equipment.
- Working alone is not permitted. Lab users should check in with one another.
- Working when impaired is not permitted. This includes times when being too tired, stressed, or otherwise inhibited from exercising appropriate caution.
- Special rules apply to hazardous equipment and hazardous chemicals (see below).
- Building management may withdraw prior approval of equipment if necessary.
- Tools should not be borrowed from other groups without express permission. All tools, including those from the GENERAL USE toolbox should be returned immediately after use.

7. Hazardous Equipment

- The building management classifies equipment as “hazardous.”
- Written Standard Operating Procedures (SOP) must be established for all hazardous equipment.
- The following equipment will generally be classified as “hazardous”:
 - power tools
 - welding of any kind
 - heavy equipment
 - acids or caustic liquids
 - chemical gases or vapors
 - injurious light and / or heat radiation
 - work that generates excessive noise
- The following protective measures must be taken when using hazardous equipment (see SOPs for details):
 - ANSI Standard Z87.1-compliant safety glasses

- Closed-toed shoes – leather (non-flammable) preferred
- For certain processes, additional safety measures may be necessary:
 - Face shield (specific danger of flying objects)
 - Earplugs (noise levels above 85 dB(A))
 - Long-sleeved, Fire Resistant Clothing (when welding or casting)
 - Welding mask (when welding)
- Those who use hazardous equipment need to inform:
 - everyone working in the same room (noisy work and simulator rooms)
 - everyone working in an adjacent work bay
 - everyone working within a radius of 15 feet of the hazardous situation and provide the same protective measures.

8. AIF Chemical Inventory Maintenance and Storage

Chemical Inventory Maintenance:

Federal, state, and local regulations require an accurate inventory of the chemicals and compressed gas cylinders stored at the Automotive Innovation Facility.

Upon **receiving new chemicals**:

- Place the packing slip on the clipboard kept by the information board at AIF rm 103
- Indicate the storage location and whether the chemical is for SSCP or DDL.
- If no packing slip was provided with the shipment or if it was misplaced, please write the date, name of the chemical, name of the manufacturer, product number, volume/quantity and storage location on a separate sheet of paper and place it on the clipboard.
- Alternatively, please provide a dated printout from the supplier's website, indicate the storage location and leave on clipboard.

When **discarding chemicals**:

- Fill out the table on the same clipboard with the information (date, name of the chemical, name of the manufacturer, product number, volume/quantity, storage location).

This data is collected monthly and input to the Stanford electronic database for chemicals (ChemTracker) by Joshua Chan (jrchang@stanford.edu) for SSCP and Erina DuBois (edubois@stanford.edu) for DDL. If you have any questions on chemicals at VAIL please contact building management.

Hazardous Chemical Storage:

All hazardous chemicals must be stored in secondary containment and segregated according to chemical compatibility. Please refer to the [Stanford Compatible Storage Group Guide poster](#) on the AIF information board. Flammable chemicals should be stored in a flammable storage cabinet. All containers must be labeled with their full chemical name.

9. AIF Waste Handling

- **Chemical waste:** Please refer to the following [Hazardous Waste Poster](https://ehs.stanford.edu/wp-content/uploads/SU_hazardouswasteposter.pdf) (https://ehs.stanford.edu/wp-content/uploads/SU_hazardouswasteposter.pdf) and links to [Recognizing Waste](https://ehs.stanford.edu/topic/waste-disposal/recognizing-waste) (<https://ehs.stanford.edu/topic/waste-disposal/recognizing-waste>) and to [Handling and Storing Waste](https://ehs.stanford.edu/topic/waste-disposal/recognizing-waste) (<https://ehs.stanford.edu/topic/waste-disposal/recognizing-waste>).
- **Hazardous waste** must be labeled properly with waste tags as soon as the first drop of waste is put into a container and must be picked up no more than eight months past the accumulation date by submitting a pickup request through the Online Chemical Waste Manager. Please use the [Empty Container Decision Tree](https://ehs.stanford.edu/forms-tools/empty-container-decision-tree) tool (<https://ehs.stanford.edu/forms-tools/empty-container-decision-tree>) to decide how to dispose of empty containers. Surplus pickup can be arranged to donate chemicals that will no longer be used at the facility.
- **Universal Waste:** Electronic waste: For small non-capital equipment, use [drop off locations](https://ehs.stanford.edu/reference/electronic-waste-locations-campus) throughout campus (<https://ehs.stanford.edu/reference/electronic-waste-locations-campus>); for large quantities of small non-capital equipment, for larger electronic waste, or for capital equipment, please contact building management.
- **CFL bulbs:** Double bag the bulb, place it in a small box or in bubble wrap and dispose as small electronic waste as described above.
- **Batteries:** Place in the designated container by the main information board at AIF.
- **Sharps:** Use the containers for sharp disposal available at the main information board at AIF and refer to the [Proper Disposal of Sharps and Broken Glass Poster](#). Ink and toner cartridges: recycle by mailing back to manufacturer, by using the [drop-off locations](#) throughout campus.

10. Building Management

Building management should be contacted for all further questions if further clarification is required:

General Building Issues

Larry Cathey: (734) 652-9898, lcathey@stanford.edu

Adele Tanaka: (650) 736-4322, adelet@stanford.edu

Workshop Safety and Equipment

Larry Cathey: (734) 652-9898, lcathey@stanford.edu

Adele Tanaka: (650) 736-4322, adelet@stanford.edu

General Questions and Logistics

CARS Executive Director: Stephen Zoepf, (201) 315-2889, szoepf@stanford.edu

CARS Associate Director: Adele Tanaka, (650) 736-4322, adelet@stanford.edu

VAIL Building Manager: Larry Cathey, (734) 652-9898, lcathey@stanford.edu

11. Signature

With my signature below I affirm that I have read, understand and will adhere to the policies described in this document “VAIL Safety and Operations” and that I have obtained the required training. I understand that failure to comply with these policies may result in the revocation of my access to VAIL.

Signature _____ Date _____

Printed Name _____

Student ID Number _____

Appendix I: Safety Training

Required Safety Training

General Safety & Emergency Preparedness EHS-4200

General Safety & Emergency Preparedness covers practices and procedures for preventing employee injury or illness from potential workplace hazards. Appropriate for all employees and students in administrative and other work environments.

Prerequisites: None

Web-Based Training

Electrical Safety EHS-2800

Electrical Safety is a 30-minute introductory course on electrical safety that covers general precautions regarding the use and care of electrical equipment. The course also addresses issues with facility wiring, and considerations regarding research systems design.

TO REQUEST TRAINING, contact Adele Tanaka adelet@stanford.edu.

Do not register in STARS.

Machine Shop Safety Class

This course is designed to give users a general idea of the types of hazards one might encounter in the shop and inform them of the proper procedures in the unlikely event of an accident. The class lasts about one hour and twenty minutes. This class is only to provide information on general safety hazards. Permission to use the machines in the machine shop must be granted by building management. Use of machines without permission is prohibited.

Recommended Safety Training (mandatory if applicable)

Compressed Gas Safety EHS-2200

Compressed Gas Safety covers the general safety procedures for the proper use, storage, and handling of compressed gases.

Web-Based Training

Fire Extinguisher Use EHS-3700

Fire Extinguisher Use gives hands-on experience using a portable fire extinguisher. Learn about the types of fire extinguishers and how to use them; general fire safety topics will also be covered.

Laboratory Ergonomics EHS-4800

Laboratory Ergonomics is for employees and students who perform repetitive tasks such as microscope use, pipetting, and miscellaneous hand tool use. Provides tips on:

- Equipment setup
- Postures
- Healthy work practices
- Manual lifting techniques

First Aid

First Aid will include advanced techniques for providing aid to persons in accidents. It consists of a series of simple medical techniques that an individual can be trained to perform with minimal equipment

CPR/AED

CPR is an emergency first aid procedure for a victim of cardiac arrest. Participants will learn how to help victims of heart attacks and accidents, and also learn the Heimlich maneuver to aid

choking victims. AED (Automated External Defibrillator) training (use and maintenance of equipment).

