2.12 Methods of Detecting a Chemical Presence or Release

Methods of Detecting a Chemical Presence or Release

1. You may learn about the presence of a hazardous chemical in your area by:
    - Your manager informing you.
    - Continuous monitoring devices (e.g. oxygen sensors where liquid nitrogen is stored, fume hood alarms).
    - Air sampling reports provided as a result of periodic monitoring for certain chemicals (e.g., formaldehyde survey in laboratories).

2.13 Methods of Detecting a Chemical Presence or Release

Methods of Detecting a Chemical Presence or Release

2. Be familiar with the chemicals that are in your area (e.g. odor and the color) so that you know if conditions have possibly changed. Stay alert to the signs of a chemical release, such as:
    - An unusual or strong smell
    - An unidentifiable substance in an area where chemicals are used
    - Leaks from chemical containers or equipment
    - Change in color of chemical that is not normal

Managers should provide department-specific information, as appropriate, for the chemicals in your work area on how to detect a spill or accidental chemical release.

2.14 Spill Response

Spill Response

Click on each button.

Incidental Spill Response

Emergency Spill Response

If a spill occurs, refer to the Rainbow Chart or other quick reference guide (such as Code Flip Chart) on emergency procedures. You can also refer to the SDS for accidental release measures.

The NEH&S Hazardous Chemical Spill Management website also provides a list of common chemicals used within KP and their specific threshold limits and response procedures for incidental vs. emergency spills, appropriate spill kits and PPE.

In general, you should follow these procedures for response to a spill.

15 of 25. | You've completed 0% of the lesson.

Incidental Spill Response (Slide Layer)

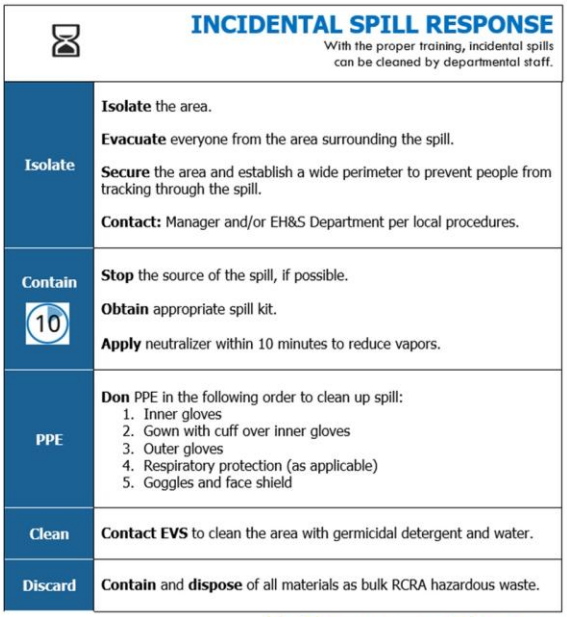
Spill Response

Click on each button.

Incidental Spill Response

Emergency Spill Response

Example of Incidental Spill Response:
The NEH&S Hazardous Chemical Spill Management website also provides a list of common chemicals used within KP and their specific threshold limits and response procedures for incidental vs. emergency spills, appropriate spill kits and PPE. A link is available in **Resources** menu.



INCIDENTAL SPILL RESPONSE With the proper training, incidental spills can be cleaned by departmental staff.	
Isolate	**Isolate** the area. **Evacuate** everyone from the area surrounding the spill. **Secure** the area and establish a wide perimeter to prevent people from tracking through the spill. **Contact:** Manager and/or EH&S Department per local procedures.
Contain 10	**Stop** the source of the spill, if possible. **Obtain** appropriate spill kit. **Apply** neutralizer within 10 minutes to reduce vapors.
PPE	**Don** PPE in the following order to clean up spill: 1. Inner gloves 2. Gown with cuff over inner gloves 3. Outer gloves 4. Respiratory protection (as applicable) 5. Goggles and face shield
Clean	**Contact EVS** to clean the area with germicidal detergent and water.
Discard	**Contain** and **dispose** of all materials as bulk RCRA hazardous waste.

15 of 25. | You've completed 0% of the lesson.

Emergency Spill Response (Slide Layer)

Spill Response

Click on each button.

Incidental Spill Response

Emergency Spill Response

Emergency Spill Criteria:
Follow your site's emergency response protocol for these large spills.

EMERGENCY (HAZWOPER) SPILL

An Emergency Spill, also known as a HazWopER Spill, is a spill that meets any of the criteria:

1. Uncontrolled release of a hazardous substance (e.g., free flowing, unable to turn off the source, etc.)
2. Evacuation of employees
3. **Poses an Immediate Danger to Life and Health (IDLH)**
4. Poses a serious threat of fire or explosion
5. An imminent danger exists
6. **High levels of exposure to toxic substances**
7. Uncertainty that resources (e.g., trained personnel, equipment, etc.) are available to deal with the severity of the hazard
8. Situation is unclear and/or critical information in lacking

Most common Emergency Spill situations at KP due to high levels may cause irreversible effects

15 of 25. | You've completed 0% of the lesson.

2.15 Hazard-Specific Fact Sheets

Hazard-Specific Fact Sheets

The **Resources** menu contains fact sheets for the following commonly used chemicals at Kaiser Permanente. The fact sheets provide more information on the application, use, control and disposal of selected products. If you use any of the chemicals below, read its fact sheet.

Anesthetic Agents

Nitrous Oxide, Halogenated Anesthetic Agents (Desflurane, Isoflurane and Sevoflurane)

Cleaning Agents

Bleach, Oxycide

High Level Disinfectants and Sterilants

Cidex OPA-C, 2.6% Glutaraldehyde (Cidex 14-Day, MetriCide™ 28-Day and Wavicide, Ortho-Phthalaldehyde (OPA) (Cidex OPA 14-Day and MetriCide OPA Plus), Peridox RTU, Rapicide PA Part A, Revital-Ox RESERT, STERRAD Sterilant, Steris S-40 Concentrate, Trophon EPR Sonex-HL

Other Chemicals

Alcohol (ethanol, isopropyl and methanol), 3.7% Formaldehyde (10% Neutral Buffered Formalin), Hydrochloric Acid, Phenol, Xylene

16 of 25. | You've completed 0% of the lesson.

2.16 Hazard Communication Courses in KP Learn

Hazard Communication Courses in KP Learn

This concludes the General Hazard Communication course.

Additional chemical specific training is available on KP Learn and may be required by your department or site to inform you of the chemical hazards in your department.

Chemical Specific Courses
- Cadmium Exposure Prevention Training
- Formaldehyde Hazard Training
- High Level Disinfectant Hazard Training
- Phenol Hazard Training
- Respirable Crystalline Silica Training for Dental Operations
- Respirable Crystalline Silica Training for GI

Safe Handling of Hazardous Drugs
- Safe Handling of Hazardous Drugs for EVS
- Safe Handling of Hazardous Drugs for Non-Licensed Staff
- Safe Handling of Hazardous Drugs for Nursing

Waste Anesthetic Gases
- Waste Anesthetic Gas Hazard Training
- Waste Anesthetic Gases Management (Clinical Staff)

Other Courses
- Chemical Hygiene Training for Lab Employees
- Corrosives, Irritants, Sensitizers Training
- Dry Ice Management Guidelines
- Emergency Eyewash and Deluge Shower Training
- Flammables Training
- Gases Under Pressure Training
- Latex Allergy Awareness Training
- Toxics Training

17 of 25. | You've completed 0% of the lesson.

3. Managing Hazardous Materials

3.1 Hazardous Material – Safe Chemical Storage

Hazardous Material – Safe Chemical Storage

It's important to store chemicals safely. Follow the manufacturer's recommendations. These are usually found on the chemical container, label, or safety data sheet (SDS).

Other things to remember...

- Store hazardous chemicals below eye level.
- Separate chemicals that could cause a hazardous reaction if they are mixed. For instance, acids and bases can be very reactive together.
- Consider whether your chemicals need to be stored in a special cabinet, such as a flammables or a caustics cabinet.
- Do not store chemicals in containers normally used for other purposes—for example, a cleaning detergent or water bottle.
- Chemical containers should not be stored on top of each other or on the floor where they could accidentally be knocked over.
- Chemicals should never be stored with food.

Do not dispose of hazardous materials in regular trash or down the drain.

18 of 25. | You've completed 0% of the lesson.

3.2 Compressed Gas Safety

Compressed Gas Safety

- A tank which is not secured may be knocked over. If the valve is knocked off or the tank ruptures, the cylinder would become a projectile causing severe injury or even death.
- A leaking oxygen cylinder can be a fire and explosion hazard.
- Read the cylinder label to identify the gas type. Do not rely on the color of the cylinder as an indication of its contents.

Only store in approved areas.

- Never drag, slide or roll a cylinder, always transport cylinders using an approved cart or holder.
- Cylinders containing compressed gases are a serious hazard when not handled or stored correctly.
- Leaks of compressed gases which displace oxygen,such as nitrogen, liquid nitrogen, nitrous oxide or carbon dioxide, can put people at risk for asphyxiation.

19 of 25. | You've completed 0% of the lesson.

3.3 Hazardous Material - Compressed Gas Cylinder Storage

Hazardous Material - Compressed Gas Cylinder Storage

- All compressed gas cylinders must be upright and secured to a fixed object or held in a portable transport cart/holder. Cylinders should be secured at both the top and the bottom.
- In patient areas, only 12 small "E-Cylinders" of oxygen or one "H-Cylinder" (a maximum of 300 cubic feet) can be stored in a smoke compartment without special enclosures. In use "E-Cylinders" of oxygen may be found on gurneys, wheelchairs or crash carts.

"E-Cylinders"

"H-Cylinder"

Store only in approved areas.

Information on safe handling and storage of compressed medical gas cylinders is available in the Resources of this Course.

20 of 25. | You've completed 0% of the lesson.

3.4 Compressed Gases - Leaks and Alarms

Compressed Gases - Leaks and Alarms

Leaks

- Notify supervisor immediately
- Tag cylinder so that it is not used
- Contact manufacturer/supplier and consult SDS

Alarms

If you hear an oxygen deficiency alarm in your work area, exit to a safe well-ventilated area immediately and do not enter the area.

3.5 Activation of Emergency Eye/Face Wash

Using an Emergency Eyewash

You need to know:

- **Chemicals you use** that can cause damage to your eyes or skin
- The **location** of the nearest eyewash

Emergency eyewashes and/or showers must be in accessible locations that require **no more than 10 seconds for the injured person to reach**.

Next we will show the steps to activate an Emergency Eyewash.

3.6 Activation of Emergency Eye/Face Wash

Activation of an Emergency Eye/Face Wash

Click each image.

23 of 25. | You've completed 0% of the lesson.

Step 1 Eyewash (Slide Layer)

Activation of an Emergency Eye/Face Wash

Click each image.

1 Push lever to activate water

Lever should easily activate within 1 second (and remain activated without further use of your hands), dust caps automatically pop off, water should be clear and tepid and produce a spray pattern that is 5-8 inches high that is wide enough to accommodate both eyes. If equipment does not meet these conditions, submit a Maintenance Work Order request.

23 of 25. | You've completed 0% of the lesson.

Step 2 Water (Slide Layer)

Activation of an Emergency Eye/Face Wash

Click each image.

2 Hold eyes open with fingers.

Ensure eyes are fully emersed within the spray pattern. Rotate eyeballs to thoroughly rinse entire surface area of the eye. If you have contacts, remove contacts first before using the eye/face wash. Failure to remove contacts can lodge chemicals and debris behind the contact lens and cause damage to the eye. Refrain from rubbing your eyes, as this action can push the chemical or object deeper into the eye.

23 of 25. | You've completed 0% of the lesson.

Step 3 Clock (Slide Layer)

Activation of an Emergency Eye/Face Wash

Click each image.

3 Rinse eyes for 15 minutes.

This seems like a long time, but it ensures that chemicals and debris are thoroughly removed. Seek medical care following flushing, even if the eyes no longer hurt after flushing.

23 of 25. | You've completed 0% of the lesson.

3.7 Emergency Equipment

Emergency equipment must be must be readily accessible at all times.

Click each image below to learn more about how to ensure equipment is readily accessible.

Nearby

from the chemical.

Unobstructed

ructed (no stairs, locks, face wash, etc.).

h a single door that swings in the direction of travel towards the emergency equipment (not towards the hazard).

You should not have to move or negotiate around items to get to the equipment.

Identified

3.8 Activation Emergency Shower

Activation of an Emergency Shower

Click on the numbers for steps to activate an Emergency Shower.

1. Pull lever

Shower lever should easily activate within 1 second and stay open without further use of your body. The water should be clear. If this is an eyewash/ shower combination unit, you will need to also activate the eyewash lever.

2. Remove contaminated clothing

Thoroughly flush the contaminant from the skin. Clothing can trap contaminants against the skin and cause further damage to the skin.

3. Rinse skin for 15 minutes

Seek medical attention after flushing skin, even if you no longer feel pain or itch.