**Slide 2**: At the end of this presentation you should understand the basics of the OSHA standard, why a respirator is necessary, and the limitations of respirators

**Slide 3:** The OSHA standard covers any work performed where a respirator is used. It has a few basic requirements, all of which your employer is obligated to meet.

A written program covering all things respiratory protection at the workplace.

You must be physically fit enough to wear a respirator without endangering your own health. There is a questionnaire you fill out that’s evaluated by a physician or other licensed health care professional that may require further evaluation before you’re cleared to wear a respirator.

Training because you need to know why you’re using the respirator, proper use of it, and maintenance & storage.

Fit testing is for tight fitting respirators (half mask or full face)

Surveillance of work conditions includes monitoring what you’re exposed to and making sure the any respirator used is appropriate for the exposure. Changes in processes can change your exposure level.

The program must be evaluated periodically to make sure respirator use is effective to protect the workers.

**Slide 5**: Respiratory protection falls under PPE. The last line of defense between you and exposure.

**Slide 6:** Respirators are necessary when: there is no substitute for the chemical being used. There will always be hexavalent chromium and nickel in stainless steel.

Ventilation and other controls don’t reduce the exposure level to below the Permissible Exposure Limit or other Occupational Exposure Limit.

Job rotation isn’t allowed for most materials that have there own OSHA standard, lead or asbestos for example. Also, a bad idea for other carcinogens or acute toxins.

**Slide 8:** Health factors that limit the use of respirators: Shortness of breath, difficulty breathing, or any other issue involving the heart and lungs.

Claustrophobia could be a problem, if it’s triggered by something covering your nose and mouth making it difficult to breathe…

Anosmia means you have no sense of smell.

These conditions or symptoms are why a physician or other licensed health care professional is involved in determining your ability to wear a respirator.

**Slide 9**: Assigned Protection Factors tell you how much protection from exposure you get. For example, a half mask protects the user from up to 10 times the PEL.

Additional training is required for immediately dangerous to life or health atmospheres for rescue or escape. The required respirators for entry into an IDLH atmosphere are highlighted in yellow. Any other respirator will not adequately protect you in an IDLH atmosphere.

**Slide 11**: There is standardized color coding that indicates the material respirator cartridges and filters offers protection against.

Pink to purple it means particulates.

CBRN means chemical, biological, radiological, and nuclear hazards.

**Slide 12**: No cartridge protects from everything.

No cartridge protects from oxygen deficiency. Oxygen deficient atmosphere is considered to be less than 19.5% oxygen concentration in air.

Cartridges only protect against the materials they’re designed for.

**Slide 13**: Different masks have different levels of protection per the APF table.

Levels of protection are generally as listed on the slide above from least to most protection. Consult the APF table for more information.

**Slide 14**: Particulate filters become harder to breathe through when full

Organic vapor or gas cartridges can have breakthrough, smelling or tasting the OV or gas, when the cartridge is saturated.

OV and other gas cartridges will start to adsorb water vapor as soon as the package they came in is opened. The cartridge can’t adsorb OV if it’s saturated with water vapor. If the cartridge has been out of the package for more than a week or two, dispose of them and get new ones.

It’s time to leave the work area and change the cartridges when there’s a change in breathing resistance or breakthrough; or other leakage occurs.

If you’re working with material that has poor warning properties (no characteristic odor, burning sensation, etc.), a change out schedule for cartridgesthat prevents breakthrough must be established. Also, if you suffer from anosmia you need to let your employer know so a cartridge change out schedule can be developed for any chemical who’s warning properties are taste or smell.

**Slide 15**: Don’t mix cartridges between different manufacturers even if they fit.

Manufacturers sometimes have multiple series of respirators. As such filters and some parts may be interchangeable. Consult the respirator instructions.

Don’t use cartridges past the expiration date even if they haven’t been opened.

**Slide 16**: Anything that lets air through the respirator nullifies any protection the respirator would provide.

For example: Breakthrough of a vapor or gas through the cartridge, Anything between the facepiece of the respirator and your skin, Anything that interferes with valve function, Valves or gaskets are torn or missing, Missing or wrong cartridges.

A beard or bushy mustache are common culprits for breaking the seal or interfering with valves.

Air, like water and electricity, follows the path of least resistance and whatever is in the air comes along for the ride.

**Slide 18**: Always inspect your respirator before use. When you clean it is another time to make sure all the parts are undamaged and working properly. You’re looking for wear and tear, discoloration, holes, missing parts, etc.

Any damage to the sealing surface, damaged or missing gaskets, valves, or filter/cartridge will allow air to leak into the respirator. A hole in the lens of a full-face respirator also lets air leak into the respirator. If the straps are broken, missing, or damaged the respirator may not fit. If the lens is too scratched up to see through, it’s a safety hazard. There are tear-offs that can be placed oved the lens to protect it from paint, abrasives, etc.

Powered air purifying respirators, air line (supplied air) respirators, and SCBA have additional parts/performance measures to inspect.

**Slide 19**: Donning is putting it on. Doffing is taking it off.

**Slide 20**: Half Mask: Put the head harness over the crown of your head. Fasten the strap behind your neck. Tighten the straps for head harness first.

Full face: Put the head harness over the crown of your head. Tighten the temple straps for head harness first, then the bottom straps, then the top strap, if applicable.

The instruction in this training is very general. Follow manufacturer’s directions for your respirator.

**Slide 21**: Loosen the straps and pull the respirator off to doff the respirator.

**Slide22**: NEGATIVE PRESSURE: Cover the air inlet or inlets on the filter/cartridge, Inhale gently, The mask should collapse slightly and hold for 10 seconds, If you feel air come in around the seal, adjust the mask and try again.

Positive Pressure: Cover the exhalation valve, Gently puff air into the mask, It should puff out a little (slight positive pressure) without breaking the seal

The filter or cartridge must be in place for the fit checks. It’s possible to put the filters on wrong or a missing gasket that would cause a leak when the respirator is used.

Several respirators have a cover over the exhalation valve that needs to be removed in order to perform the positive pressure fit check. Also, note that you are gently puffing air into the respirator. You will absolutely break the seal if you blow hard during the positive pressure fit check.

The manufacturer’s instructions may have additional fit checks

**Slide 23**: Wash your face and the respirator as necessary to prevent eye or skin irritation from use

Working with hazardous chemicals may require showering with the respirator on and/or washing your face after doffing the respirator.

Respirator manufacturers make respirator cleaning wipes. Even though they can look like alcohol wipes, they aren’t alcohol wipes. Alcohol wipes could damage the respirator.

The respirator cleaning wipes are good for a quick cleaning of light soiling on your respirator

**Slide 24**: Follow the manufacturer’s instructions and your employer’s policy. Only use parts specifically made for that respirator. In other words, don’t mix parts between different manufacturerseven if they fit.

**Slide 25**: Store your respirator in a bag

Out of the sunlight. UV light can deteriorate parts of many respirators.

In a locker, desk, or other suitable location.

Cleaning, inspection, maintenance, and storage must be in accordance with the manufacturer’s instructions

**Slide 27**: Thank you