



BREATHE EASIER WITH THESE  
*Respiratory Protection*  
*Must Haves*

Our presentation begins soon!





BREATHE EASIER WITH THESE  
*Respiratory Protection  
Must Haves*

ICW Group Risk Management





# Today's presenter

**Mark Yeck**

*Technical Specialist, CIH, CSP*  
*ICW Group*



# Respiratory Hazards Can Be Deadly

Up to **762,000**  
are diagnosed annually with  
cancer caused by prolonged  
exposure to **workplace carcinogens.**”

– *Centers for Disease Control and Prevention*

# Respiratory Hazards Wildfire Update

- Cal/OSHA & Federal OSHA - you determine exposure.
- Check air quality forecasts – for example:
  - U.S. EPA [AirNow\\*](#)
  - U.S. Forest Service [Wildland Air Quality Response Program\\*](#)
- Provide proper respiratory protection equipment.
  - *Commonly includes N-95 disposable filter face piece respirator.*
  - *Half & full face piece respirators increase protection*

*\*NOTE: All links will be available after webinar on website*



# Respiratory Hazards Wildfire Update

- For fine particle filtering, respirators **must be labeled**
  - *N-95, N-99, N-100*
  - *R-95*
  - *P-95, P-99, P-100*
- Also must be labeled **as approved (NIOSH)**.
  - *[Protecting Outdoor Workers Exposed to Smoke from Wildfires](#)*
  - *[N95 Mask Commonly Asked Questions](#)*
  - *[Using Disposable Respirators \(English & Spanish\)](#)*

*\*NOTE: All links will be available after webinar on website*

# Respiratory Hazards Covid-19 Update

## COVID-19

- Shortage of N95's often leave people looking at "KN95's"  
*(Kind of an N95!)*
- Can upgrade to ½ face respirator with HEPA cartridges
  - *Medical Clearance*
  - *Fit testing if you can*
  - *Train on limitations – Need to know what it can and can't be used for*



## AGENDA:

- Cost of noncompliance
- Impact of respiratory exposure
- Top 5 most common mistakes
- Helpful resources
- Q&A





# Cost of Noncompliance

# Violations carry stiff penalties

Even 'small' violations > **\$1,000**

Criminal charges can result from:

- Safety complaints
- Injury investigations
- OSHA Visits (planned and random)





# The wrong kind of headlines!

**\$56,000** for respirator program deficiencies

**\$62,000** for inadequate respiratory protection

**\$152,000** for inadequate chemical protection

## SAFETY AND OSHA NEWS

Did employer completely ignore workers' safety concerns?



UNITED STATES  
DEPARTMENT OF LABOR



OSHA News Release - Region 1

U.S. Department of Labor

Please not  
reflect cur

Sept. 19, 2016

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**BRAINTREE**,  
follow safety  
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employees in  
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The company  
welding, cutti  
respirators o  
workers. info

## Daily Record

PART OF THE USA TODAY NETWORK

HOME NEWS SPORTS ENTERTAINMENT OPINION ARCHIVES USA TODAY SUBSCRIBE

**OSHA: Lab headquarters in Madison fined \$152K for safety violations in Conn. facility**

Michael Izzo, @MizzoDR Published 4:46 p.m. ET Sept. 1, 2016 | Updated 4:50 p.m. ET Sept. 1, 2016



(Photo: ~File)

CONNECT TWITTER LINKEDIN COMMENT EMAIL MORE

MADISON — A borough-based company is facing more than \$152,000 in fines after inadequately protecting its employees against chemical hazards, the Occupational Safety and Health Administration announced Thursday.

Employees of Quest Diagnostic Corp.'s Ameripath diagnostic laboratory in Shelton, Connecticut filed a complaint with OSHA earlier this year after growing concerns because they were experiencing sore throats, headaches, and difficulty breathing, OSHA said.



# Stiff Fines!

## \$1.4 Million

Amount Wisconsin shipyard faces in penalties for exposing workers to lead and other hazards.





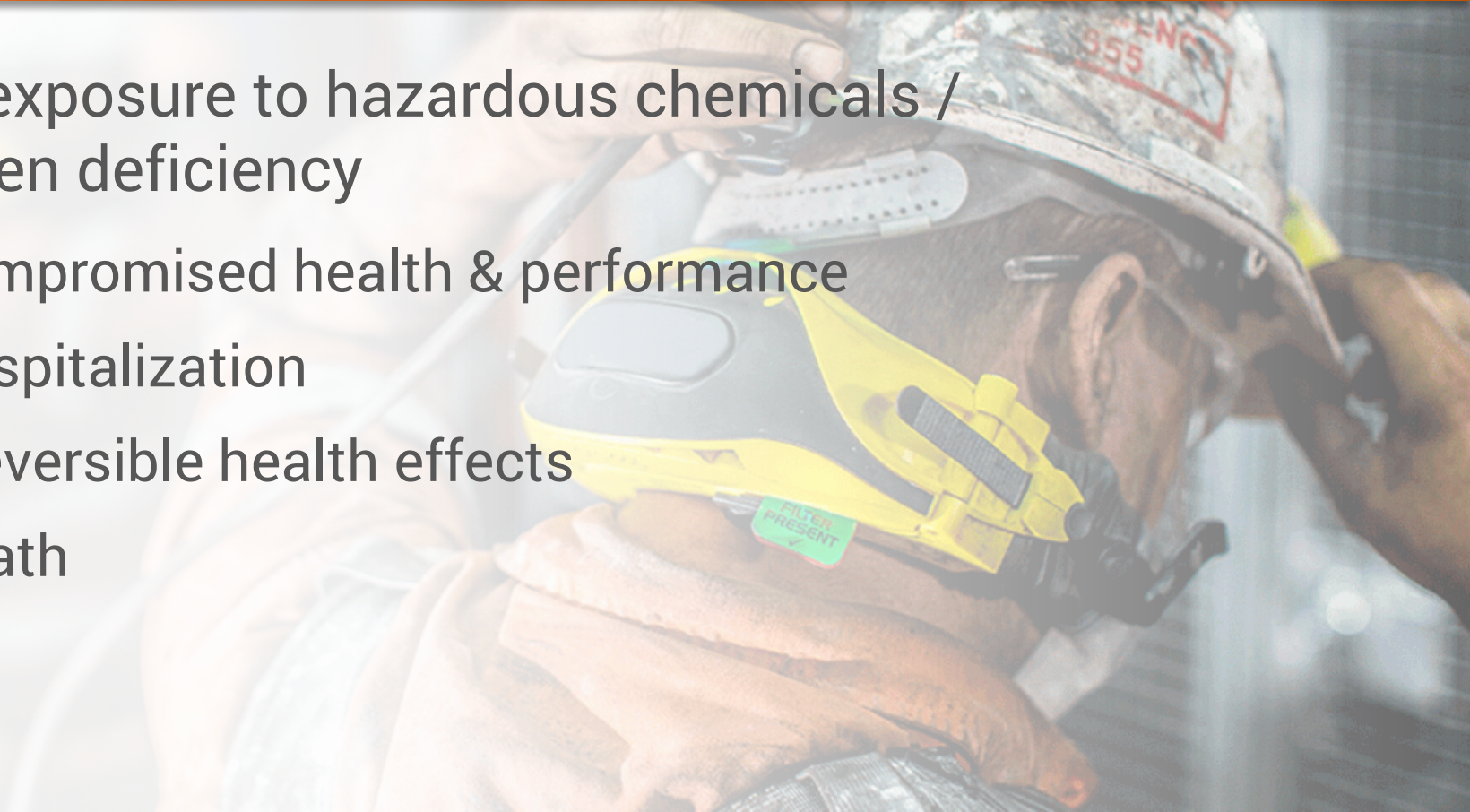
# Impact of Respiratory Exposure



# Impact to Employees' Health

Overexposure to hazardous chemicals /  
Oxygen deficiency

- Compromised health & performance
- Hospitalization
- Irreversible health effects
- Death



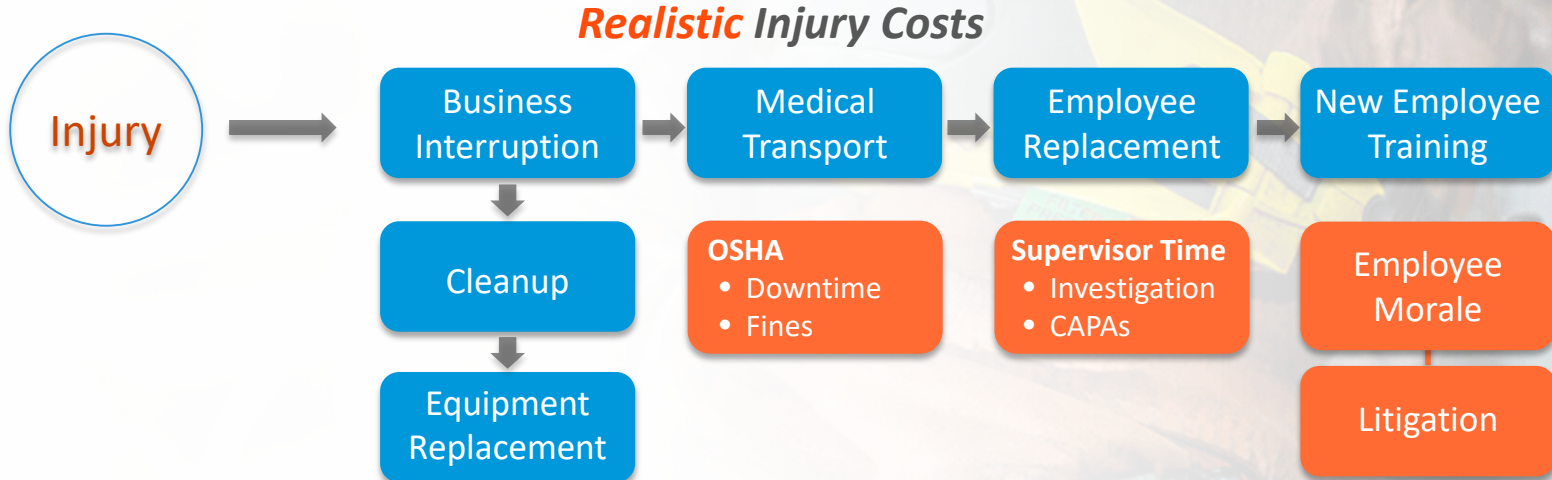


# Impact to Your Organization

- OSHA Fines
- Business Interruption
- Productivity Loss
- Decline in Morale
- Company Reputation
- Costly Claims



# Impact to Your Organization





# Top 5 Most Common Mistakes



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 **Don't Choke On These 5 Common Respiratory Protection Mistakes**

**1**  
**MISTAKE: Misinterpreting required vs. voluntary**  
If exposure exists, and other precautions (such as eliminating) are unfeasible, you must implement all Respiratory Protection Program (RPP) elements.  


**2**  
**MISTAKE: Not starting with the Hazard**  
Understand the nature and magnitude of exposure to respiratory hazards first – this is key to selecting protection equipment.  


**3**  
**MISTAKE: Using the wrong respirator and cartridges**  
Select the right tool for the job! Match the respirator to the contaminant's chemical state & form. Or, consider it immediately dangerous to life and health (IDLH).  


**4**  
**MISTAKE: Missing the required program elements**  
What are the elements to include? Respirator selection, Medical clearance, Fit testing, Procedures, Training, Periodic program evaluation.  


**5**  
**MISTAKE: Practicing improper maintenance**  
Inspect respirator regularly for cleanliness and check it's in proper working order.  
Your checklist should include:  

- Respirator cleaned regularly
- Exhalation valve in working order
- Cartridges are appropriate and current
- Sealed fit & positive/negative pressure
- Stored properly - bag, box & secure



[icwgroup.com/safety](http://icwgroup.com/safety)

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# Top 5 Most Common Mistakes

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2. Not starting by understanding hazard
3. Using wrong respirator and cartridges
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# MISTAKE #1: Misinterpreting required vs. voluntary

## Required

- Exposure risk at or above limit
- Control strategies unfeasible / too costly
- As result:
  - *All Respiratory Protection Program (RPP) elements are required to be implemented*







# MISTAKE #1: Misinterpreting required vs. voluntary

## Voluntary

- No exposures requiring control
- Comfort against 'nuisance' particles
- Filter face-piece (dust mask)
  - *Using respirator other than dust mask requires elements of RPP*
- Provide Appendix D of the OSHA Regulation

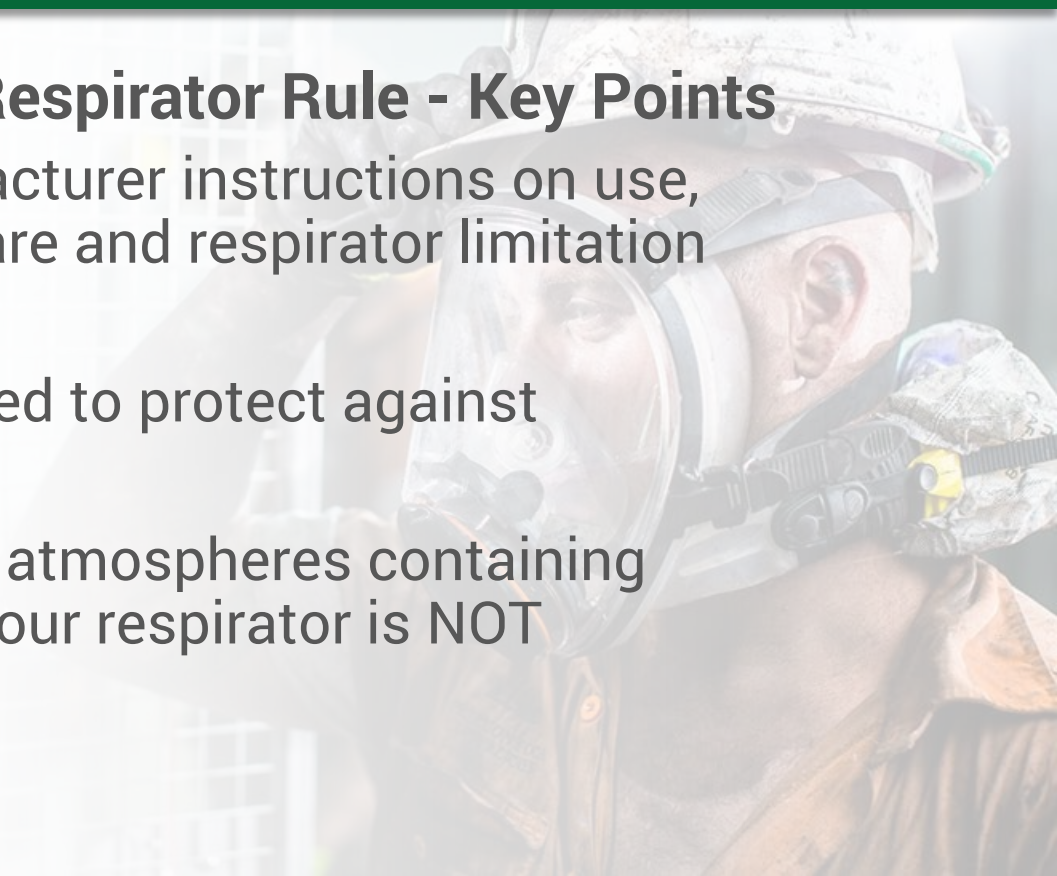




# MISTAKE #1: Misinterpreting required vs. voluntary

## Appendix D of the OSHA Respirator Rule - Key Points

- Read and heed all manufacturer instructions on use, maintenance, cleaning, care and respirator limitation warnings
- Choose respirators certified to protect against contaminant of concern
- Don't wear respirator into atmospheres containing contaminants for which your respirator is NOT designated to protect





# Top 5 Most Common Mistakes

1. Misinterpreting required vs. voluntary
- 2. Not starting by understanding hazard**
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## MISTAKE #2:

# Not starting by understanding hazard

Employers must characterize the nature and magnitude of employee exposures to respiratory hazards...

*before selecting respiratory protection equipment.*

- OSHA, Exposure Assessment





# MISTAKE #2: Not starting by understanding hazard

Identify hazards with...

- ✓ Safety inspections
- ✓ Job hazard analysis
- ✓ Chemical inventory





# MISTAKE #2: Not starting by understanding hazard

## Review:

- **Identify**
  - *Materials, tasks, environment*
- **Control**
  - *Solve the solvable!*
- **Quantify**
  - *Exposure?*







# MISTAKE #2: Not starting by understanding hazard

## Assess risks:

- Dusts
- Fumes
- Gases
- Sprays
- Fogs
- Mists
- Smoke
- Vapors





# MISTAKE #2: Not starting by understanding hazard

## Evaluate:

- Engineering controls
- Administrative controls
- Isolation/substitution
- Work practices
- PPE





## MISTAKE #2:

# Not starting by understanding hazard

Understanding hazard first is key!

- Avoid injury, failure, fines, & operational interruptions from **'under-sizing'**
- Avoid unnecessary cost & possible safety issues from **'oversizing'**







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# MISTAKE #3: Using the wrong respirator and cartridges

*Selecting the “right” tool...  
depends on the job!*



or



or



or



or



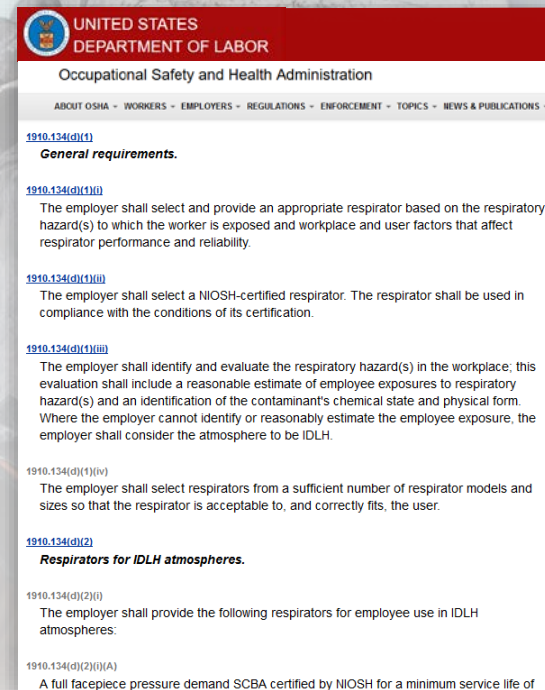


# MISTAKE #3:

## Using the wrong respirator and cartridges

### Right respirator based on hazard:

- The employer shall identify and evaluate respiratory hazard(s) in workplace;
- This evaluation shall include reasonable estimate of employee exposures to respiratory hazard(s) and identification of contaminant's chemical state and physical form.
- Where employer cannot identify or reasonably estimate employee exposure, employer shall consider atmosphere to be **IDLH**.



The screenshot shows a webpage from the United States Department of Labor, Occupational Safety and Health Administration. The page title is 'Occupational Safety and Health Administration'. Below the title is a navigation bar with links: ABOUT OSHA - WORKERS - EMPLOYERS - REGULATIONS - ENFORCEMENT - TOPICS - NEWS & PUBLICATIONS - . The main content area is titled '1910.134(d)(1) General requirements.' and contains three sub-sections: 1910.134(d)(1)(i) 'The employer shall select and provide an appropriate respirator based on the respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.' 1910.134(d)(1)(ii) 'The employer shall select a NIOSH-certified respirator. The respirator shall be used in compliance with the conditions of its certification.' 1910.134(d)(1)(iii) 'The employer shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be IDLH.' Below these are sections for 1910.134(d)(1)(iv) and 1910.134(d)(2) 'Respirators for IDLH atmospheres.' The 1910.134(d)(2)(i) section states 'The employer shall provide the following respirators for employee use in IDLH atmospheres:' and the 1910.134(d)(2)(i)(A) section states 'A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of'.

*\*NOTE: Links will be available after webinar on website*

*OSHA Respirator Regulations,  
(OSHA 29 CFR 1910.134(d)(1)(iii))*





# MISTAKE #3:

## Using the wrong respirator and cartridges

### *A quick look at respirator types*

#### Air Supplying

**SCBA**

**Air Line**

#### Air Purifying

**Disposable Half Mask**

**Half Mask**

**Full Face**

**PAPR**

- Loose fitting hoods
- Helmets
- Tight fitting face-pieces

**Disposable  
vs.  
Re-Usable**





# MISTAKE #3: Using the wrong respirator and cartridges

## Air or “Atmosphere” supplying

- **SCBA and Air-line Respirators**
- Used by Response Teams
- Highly hazardous environments
- Requires “Grade D” Breathing Air
- Specialized training and maintenance





# MISTAKE #3: Using the wrong respirator and cartridges

## Air Purifying Respirators (Without PAPR)

N95 Filtering Facepiece  
aka "dust mask"



Particulates  
*Dusts, Mists, Fumes*

½ Mask Air Purifying  
tight fitting, reusable



Broad  
Applications

Full-face Air Purifying  
tight fitting, reusable



Greater  
Protection

Low  
Protection

Low Hazard

High  
Protection

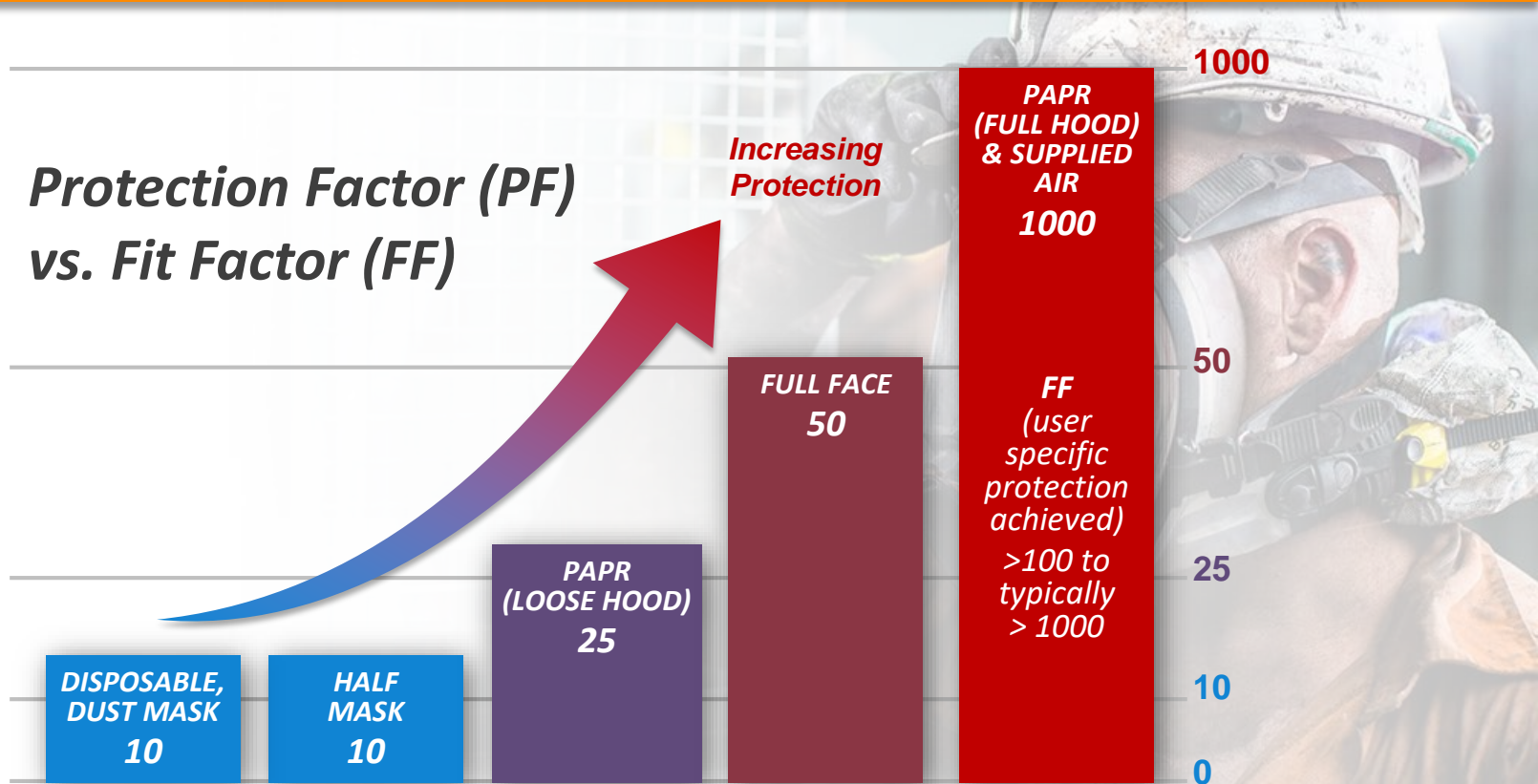
High Hazard







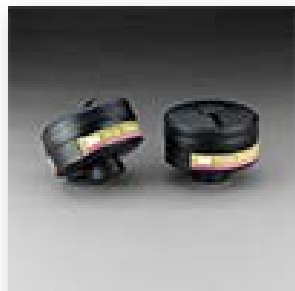
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# MISTAKE #3: Using the wrong respirator and cartridges

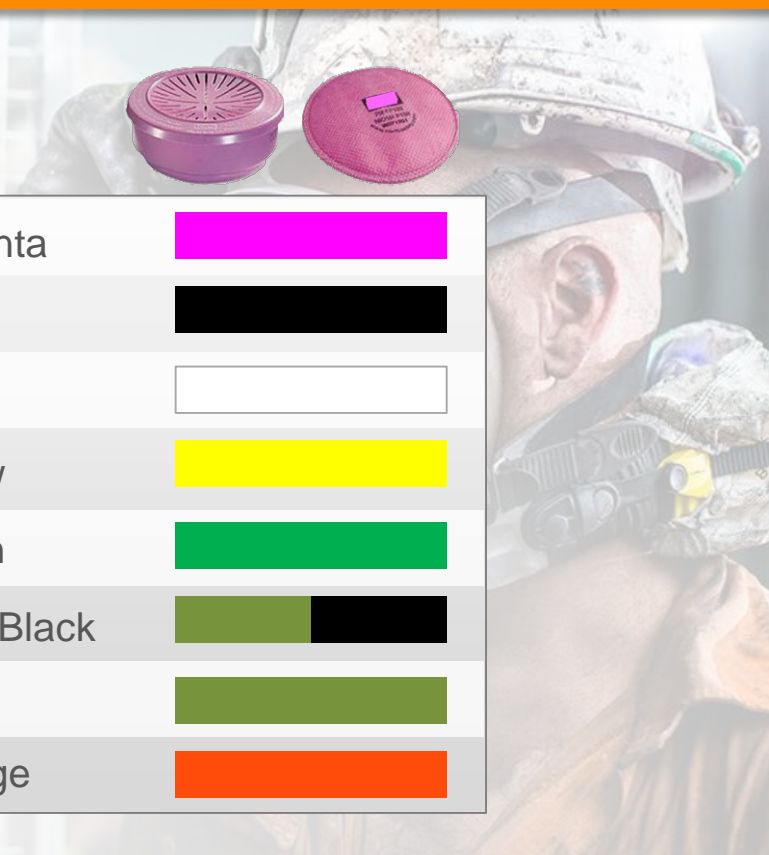
Colors indicate type of contaminant  
cartridge protects against





# MISTAKE #3: Using the wrong respirator and cartridges

## Use correct cartridge for job!



Dusts, Mists, Fumes	Magenta	
Organic Vapor	Black	
Acid Gases	White	
Organic Vapor/Acid Gases	Yellow	
Ammonia/Methylamine	Green	
Formaldehyde/Organic Vapor	Olive/Black	
Multi-Gas/Vapor	Olive	
Mercury Vapor/Chlorine Gas	Orange	





## MISTAKE #3:

# Using the wrong respirator and cartridges

## Cartridge Change-Out

- Previously: Judged by service-life warnings
  - *Odor, taste, resistance*
- Current: **Schedule required**
  - *Filter and chemical cartridge life*
  - *Manufacturer's Recommendation*
  - *NIOSH MultiVapor e-Tool*
  - *Service Life Indicators*
  - *Cartridge marking system*

½ Mask with cartridges and  
'pancake' style pre-filters





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- Stored properly – bag, box & secure

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# MISTAKE #4: Missing required program elements

## Required:

1. Written program
2. Program administrator
3. Hazard evaluation & respirators
4. Medical clearance
5. Fit testing
6. Procedures
7. Training
8. Periodic program evaluation
9. Record keeping







# MISTAKE #4: Missing required program elements

## Reinforce training

- Helpful reminders
- Coaching
- Signage
- Posters, etc.



 **TOP TIPS**   
For Respirator Safety  
Wearing a respirator? Check these tips to be safe!

- 1** **Got the correct mask?** Don't just pick any Friday the 13<sup>th</sup> mask. Understand the hazard and the protection you need, then select the right respirator to wear. 
- 2** **Don't neglect to inspect.** Check your respirator closely before you wear it – cleanliness, cartridge, valve. Do a complete pre-flight. After all, your lungs depend on it! 
- 3** **Sporting a beard?** Facial hair can impair the face-to-face seal of the respirator and destroy the effectiveness. Sorry, it may look stylish, but save your lungs and shave your beard! 
- 4** **Reusing disposable filters?** These aren't made for repeated use. Don't hang onto a filter until you can "taste it" (yuck). Here's a bright idea - replace with each use! 
- 5** **Never read a map?** Start now - read the instructions that came with your respirator. Check to be sure it's designed for the hazard and ensure you're using it properly. 

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# MISTAKE #5: Practicing improper maintenance

Respirator owner identification

Inspect regularly

- Cleanliness
- Exhalation Valve
- Cartridges

Check fit

- Positive/negative pressure







# MISTAKE #5: Practicing improper maintenance

## Cleaning

- Wipes – Use ammonia based wipes (not alcohol)
- Bath – Warm water, mild soap





# MISTAKE #5: Practicing improper maintenance

## Storage

- Bagged / boxed / secure





# Top 5 Most Common Mistakes

## Summary...

1. **Know** what's required vs. voluntary
2. **Start** by understanding hazards
3. Use **correct** respirator and cartridges
4. **Include** required program elements
5. Practice **proper** maintenance





**Understanding Respiratory  
Requirements and  
Committing to Safety**

=

**Healthier and More  
Productive Workforce**

*and sustainable competitive  
business advantage!*





# ICW Group Safety & Risk Resources



# ICW Group Policyholder Website!

[icwgroup.com/safety](https://www.icwgroup.com/safety)

- Safety and Risk Management area!
- Safety Webinars
- **Breathe Easier With These Respiratory Protection Must Haves**

5 Common Mistakes, Key Requirements, Your Plan & Top Tips for Respirator Safety





# ICW Group Policyholder Website!

## Log into myResource

- Open **Safety OnDemand**
- Search for “respirators” provides **300+ results**
- Example Safety Talk: **Safe Respirator Use**

Handouts, checklists, quizzes, narrated presentations!

*\*NOTE: Links will be available after webinar on website*

The collage features several safety-related documents and images:

- Safety Talks Quiz:** A document titled "Safe Respirator Use" with a quiz question: "If a facepiece respirator is correctly used, the respirator will puff out when you exhale." It includes a "FOR THE LEADER" section and a "CHECKLIST" section.
- Handout:** A document titled "Safe Respirator Use" with sections for "Preparation Tips", "After the Talk", and "Test Your Knowledge".
- Checklist:** A document titled "Safe Respirator Use" with a checklist section.
- Images:** Two photographs showing workers wearing respirators. One is a close-up of a worker wearing a respirator, and the other is a worker wearing a respirator and a hard hat.

# ICW Group Policyholder Website!

## Safety OnDemand

- Resources > OSHA Program Wizards
- **Respiratory Protection:** Automated safety plans to quickly customize



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*Questions?*







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*Thank you!*

