10 EASY WAYS to Simplify Your Chemical Risk Assessments

Our Presentation Will Begin Soon!

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10 EASY WAYS to Simplify Your Chemical Risk Assessments

Presented by ICW Group Risk Management

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TODAY'S SPEAKER

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Technical Specialist, IH
ICW Group

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ICW Group Occupational Disease Data

Cost of Claims?

$20,802,373

- **Additional Indirect Costs up to 10x as much!**

TOPICS:

- Chemical Safety: 10 Ways to Simplify Risks
- Industrial Hygiene Resources
- ICW Group Safe 10 Tool & Posters

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TOPICS:

- **Chemical Safety: 10 Ways to Simplify Risks**
- Industrial Hygiene Resources
- ICW Group Resources

Chemical Safety: 10 Ways to Simplify Risks

Chemical handling is risky.

- Your protocols should include assessments and comprehensive training so everyone is aware of safe practices.
- Here are 10 easy ways to help with your efforts!

1 KNOW WHAT YOU WORK WITH

Know the Chemicals & Properties

- What are we working with?
  - Most frequently used.
  - Highest quantity.
  - Most hazardous.

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1 KNOW WHAT YOU WORK WITH

Know the Chemicals & Properties

- What Physical & Health Hazards?
- Routes of entry: How can we be exposed?
  - Corrosive
  - Flammable
  - Toxic
  - Reactive
  - Regulated
  - Special hazards

1 KNOW WHAT YOU WORK WITH

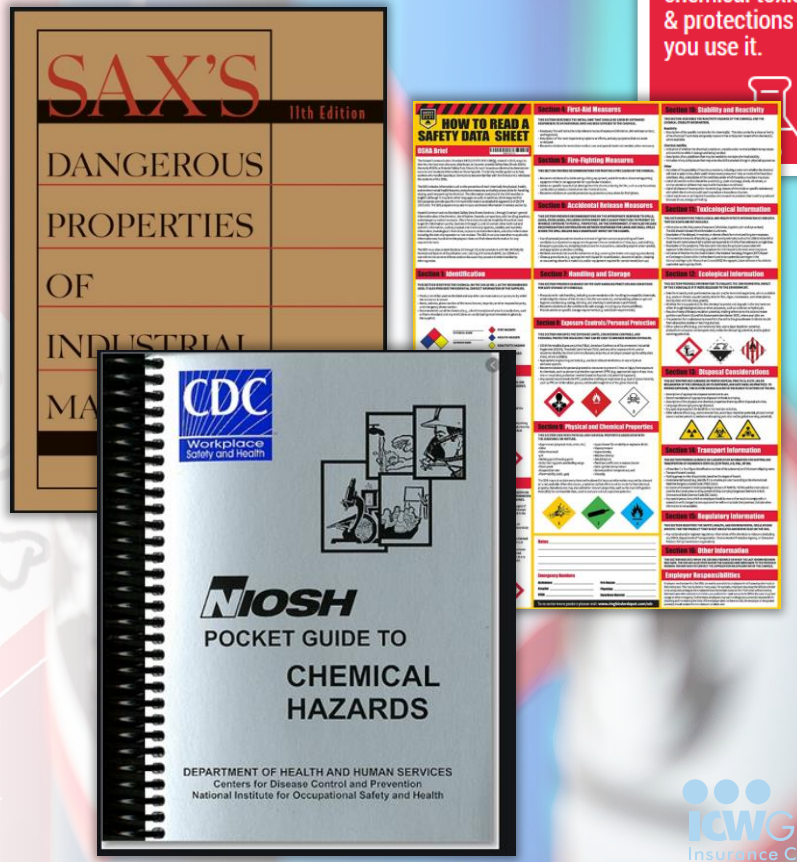
Know the Chemicals & Properties

- Conditions of use:
  - Compatibility
  - Type of process (aggressive)
  - Unique conditions (confined space)
  - Upset potentials
  - Emergency preparedness

1 KNOW WHAT YOU WORK WITH

References:

- Global Harmonized System (GHS)
- Safety Data Sheets (SDS)
- Your chemical supplier
- OSHA
- Other literature



1 KNOW WHAT YOU WORK WITH

Be sure you know the chemical toxicity, risk & protections - before you use it.

1 KNOW WHAT YOU WORK WITH

What it means to YOU:

- Know the chemicals you're working with.
- Learn hazards and protections.
- Many great references to learn more!

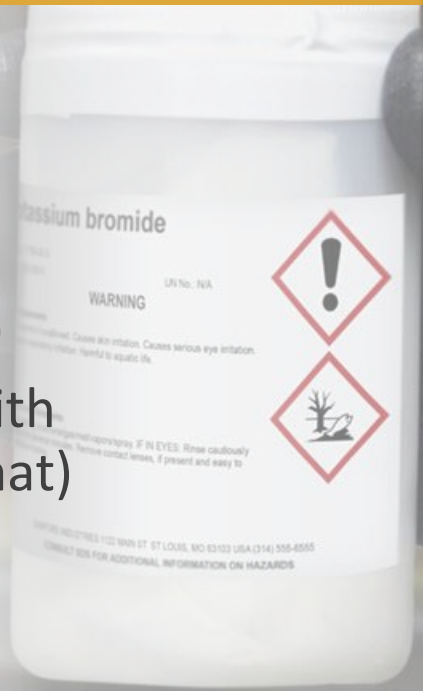
2 UNDERSTAND AND USE THE GHS

2 UNDERSTAND AND USE THE GHS

Use the Global Harmonized System, keep lists, label and train employees.

The Global Harmonized System

- OSHA calls GHS ‘HazCom 2012’ (an update)
- Chemical Inventory
- SDS updated for each chemical (16 Sections)
- Primary and secondary container labeling with identity and hazard warning (label new format)



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2 UNDERSTAND AND USE THE GHS

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Use the Global Harmonized System, keep lists, label and train employees.

The Global Harmonized System

- Training on:
  - Physical & health hazards
  - SOPs
  - Personal protection
  - Special equipment
  - Labeling
  - SDS

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2 UNDERSTAND AND USE THE GHS

2 UNDERSTAND AND USE THE GHS

Use the Global Harmonized System, keep lists, label and train employees.

Helpful resources:

- GHS Poster
- https://www.msdsonline.com/resources/ghs-answer-center/ghs-101-history-ghs/

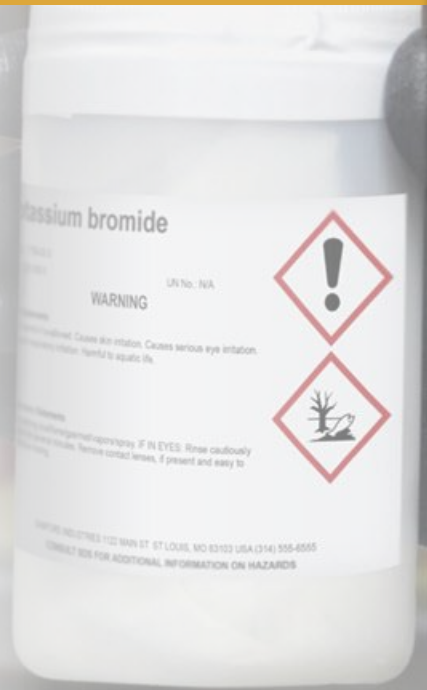
2 UNDERSTAND AND USE THE GHS

2 UNDERSTAND AND USE THE GHS

Use the Global Harmonized System, keep lists, label and train employees.

What it means to YOU:

- List your chemical inventory.
- Know relevant label systems.
- Cover chemical identity and hazard warnings in both training and labeling!



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3 PRACTICE SAFE HANDLING

How do we move, transfer, and work with chemicals?

- Are we generating exposures?
- Open systems, inefficiencies:
  - Grind
  - Cut
  - Weld
  - Spray
  - Heat

3 PRACTICE SAFE HANDLING

How do we move, transfer, and work with chemicals?

- Closed systems such as:
  - Vacuum transfer
- Wet systems:
  - Water shielding
  - Low volume spray applications

3 PRACTICE SAFE HANDLING

What it means to YOU:

- Keep chemical containers closed as much as possible.
- Move chemicals in ways to limit exposure.
  - Less dust
  - Less odor
  - Less spilling
  - Less risk!
- Train on safe chemicals handling.

4 PERFORM HAZARD ANALYSIS

SOP and Job Hazard Analysis

- Reduce risk via:
  - Job Hazard Analysis
  - SOP
  - 5S
  - Efforts to substitute with less toxic chemistry.

4 PERFORM HAZARD ANALYSIS

SOP and Job Hazard Analysis

- Elements of JHA and SOP:
  - Who's authorized?
  - Specific safe use procedures.
  - Hazard controls and mitigations.
  - Upset procedures.
- Point SOP to other programs already in place

Goal is to ensure performance in the field

4 PERFORM HAZARD ANALYSIS

What it means to YOU:

- Look at how you use chemicals.
- What could go wrong?
- How can we make it safer?
- Document (it can be a simple document).

5 BE READY WITH CONTROLS

What's that smell?

- Why are we generating dust, fume, smoke, mist?
- Are we capturing emissions? (Ventilation)
- Can emissions be moved / diluted? (Fans, isolate)

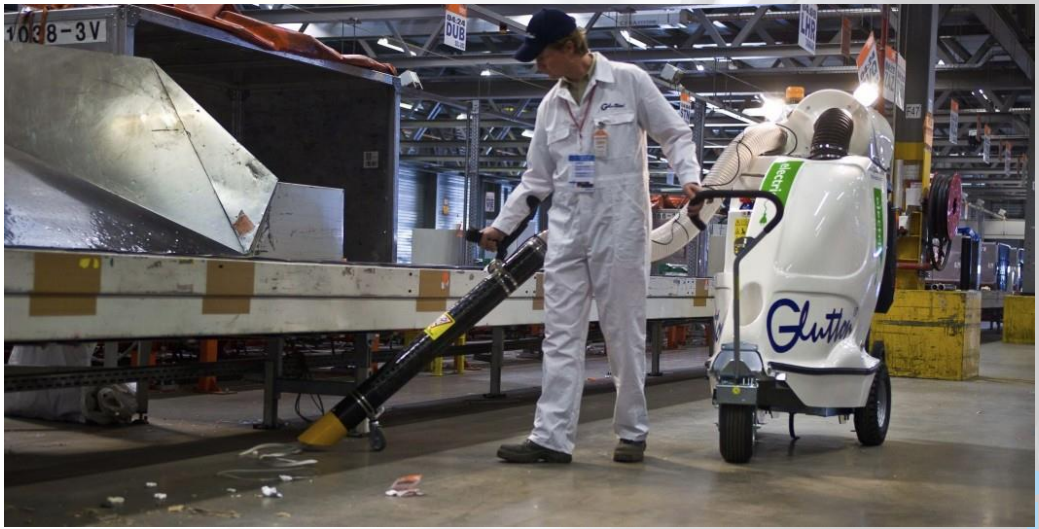
5 BE READY WITH CONTROLS

5 BE READY WITH CONTROLS

Smell, smoke, dust? Have fans, water, and appropriate controls ready for quick use.

It’s getting dirty in here!

- Do we have a housekeeping schedule?
- Safe (HEPA) Vacuum, wet methods, process changes.



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5 BE READY WITH CONTROLS

What it means to YOU:

- Can you smell chemicals, smoke, see dust?
- Are there fans, suction systems (ventilation), practices like spraying water to help reduce it?
- Can you find ways to make it safer?

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6 USE APPROPRIATE EQUIPMENT

Working with regulated or unique chemicals may require special equipment.

- Documenting equipment, use conditions, maintenance and material mapping can help control hazards.
- New technology in controls includes:
  - Wet blasting
  - Bag in bag out HEPA vacuums
  - Ventilated hand and power tools

6 USE APPROPRIATE EQUIPMENT

Working with regulated or unique chemicals may require special equipment.

- Lead Styphnate Example

3. HAZARDS IDENTIFICATION

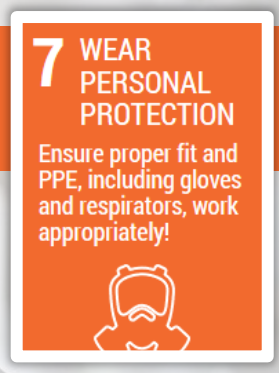
DANGER!
EXPLOSIVE. DO NOT SUBJECT TO MECHANICAL SHOCK OR HEAT. HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN. CAN CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. CONTAINS A MATERIAL WHICH MAY CAUSE KIDNEY, BLOOD, DEVELOPMENTAL, REPRODUCTIVE AND NERVOUS SYSTEM EFFECTS. CONTAINS A MATERIAL WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA. USE ONLY WITH ADEQUATE VENTILATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. WASH THOROUGHLY AFTER HANDLING.

6 USE APPROPRIATE EQUIPMENT

What it means to YOU:

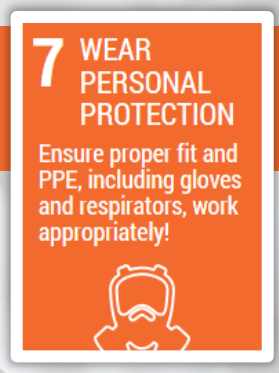
- More dangerous chemicals often have special handling and equipment requirements.
- It’s better to find less toxic or hazardous chemical by substituting something safer.
- Limit who can work with highest risk chemicals and provide extra training.

7 WEAR PERSONAL PROTECTION



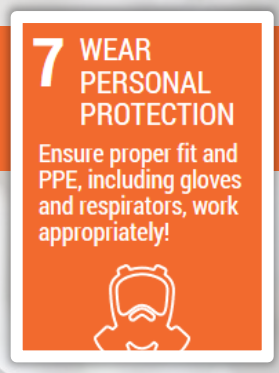
- Common errors include improper selection, poor fit, poor storage or condition, not used.
- Skin protection often requires understanding permeability (Can it get through the glove?)
  - Use manufacturer's chart plus SDS or chemical manufacturer's information.
  - Your distributor or representative can help.

7 WEAR PERSONAL PROTECTION



- OSHA expects certification of some type for jobs that require PPE .
  - This needs to be updated periodically and when changes occur.

7 WEAR PERSONAL PROTECTION



What it means to YOU:

- The protection has to fit properly or:
  - It won't work
  - It won't be used
- Protection also has to actually work!
  - Extra important with gloves and respirators.
- Inventory equipment and approve annually.

8 STORE CHEMICALS PROPERLY

Common mistakes storing chemicals include:

- Flammables not in approved cabinets
- Flammable Waste not in closed metal containers.
- Oxidizers must be segregated from:
  - Organic material
  - Flammables
  - Combustibles
  - Strong reducing agents such as zinc, alkaline metals and formic acid

8 STORE CHEMICALS PROPERLY

Common mistakes storing chemicals include:

- Store acids in a dedicated acid cabinets.
- Simple housekeeping and warehouse stacking safety issues (Dangerous locations etc.)

8 STORE CHEMICALS PROPERLY

- Use chemical manufacturer's or sellers guides:
  - https://www.graco.com/content/dam/graco/ipd/literature/misc/chemical-compatibility-guide/Graco_ChemCompGuideEN-B.pdf
- OSHA Flammable Liquid Standard specifies:
  - Quantities and storage methods.
  - Dispensing safety including grounding and bonding.
  - Wiring Means for hazard class.

8 STORE CHEMICALS PROPERLY

- NFPA 30 is great reference for Flammable and Combustible Liquids Code.
  - Published by National Fire Protection Association.
  - Provides safeguards to reduce hazards associated with storage, handling and use of flammable and combustible liquids.

8 STORE CHEMICALS PROPERLY

What it means to YOU:

- If you put the wrong chemicals together they can explode, burn, or make poisonous smoke.
- Topic is complicated - get help from your supplier.
- There are many references to learn more!

9 BE AWARE OF REGULATED CHEMICALS

OSHA Substance Specific Standards = Regulated Chemicals

- Current list of substance specific standards also chemicals OSHA regulates as carcinogens or potential carcinogens:

Asbestos 4-Nitrobiphenyl alpha-Naphthylamine Methyl chloromethyl ether 3,3'-Dichlorobenzidine (and its salts) bis-Chloromethyl ether beta-Naphthylamine Benzidine 4-Aminodiphenyl Ethyleneimine beta-Propiolactone 2-Acetylaminofluorene 4-Dimethylaminoazobenzene N-Nitrosodimethylamine Vinyl chloride Inorganic arsenic Cadmium Benzene Coke oven emissions 1,2-dibromo-3-chloropropane Acrylonitrile Ethylene oxide Formaldehyde Methylenedianiline 1,3-Butadiene Methylene Chloride

9 BE AWARE OF REGULATED CHEMICALS

OSHA Substance Specific Standards = Regulated Chemicals

- Regulated Chemicals typically have an action level and permissible exposure limit.
- Labeling, control of access, training, and exposure monitoring requirements.
- May be medical monitoring and specific blood, urine, or other testing mandated.
- Housekeeping, control of clothing and laundering is another common provision.

9 BE AWARE OF REGULATED CHEMICALS

What it means to YOU:

- Chemicals with higher danger are often regulated by OSHA or others.
- They have their own standards or procedures.
- Standards contain specifics on safely working with chemical.

10 KNOW WHAT'S IN THE AIR

OSHA wants employers to evaluate and ID respiratory hazards.

"Reasonable Estimate"

C) 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.*

(A) The employer shall provide a respirator *that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.*

1. Assigned Protection Factors *(APFs) Employers must use the assigned protection factors listed in Table 1 to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.*

2. Maximum Use Concentration *(MUC)*

a. The employer must select a respirator for employee use that maintains the employee's exposure to the hazardous substance, when measured outside the respirator, at or below the MUC.

https://www.red-on-line.com/hse/2019/09/24/us-ninth-circuit-holds-osha-respiratory-protection-standard-requires-employers-evaluate-workplace-respiratory-hazards-determine-whether-respirators-necessary-005606

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10 KNOW WHAT'S IN THE AIR

What it means to YOU:

- What can you breathe?
  - OSHA requires 'a reasonable estimate' of exposures to respiratory hazards.
- How much is in the air?
  - Technically, if respirators are required, you need to know what the chemical exposure level is.

Respirators have ability to protect to certain levels.
Technically, you can't select until you know what's in the air!

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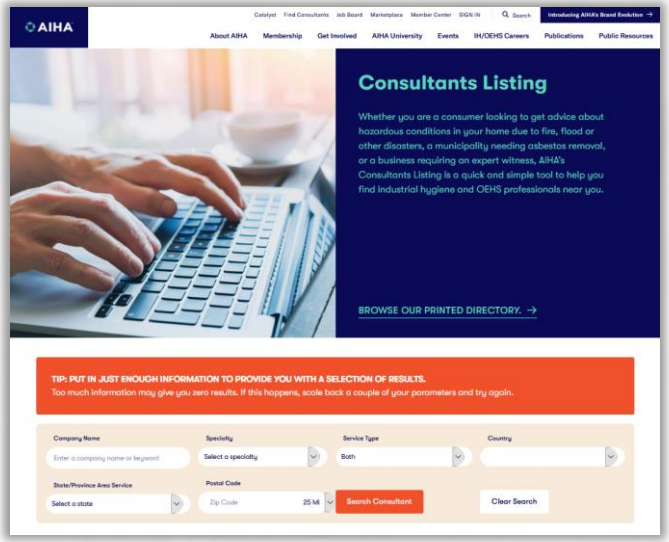
TOPICS:

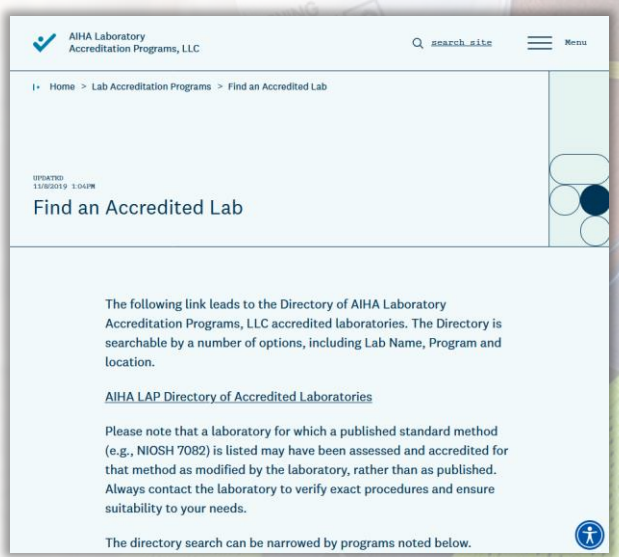
- Chemical Safety: 10 Ways to Simplify Risks
- **Industrial Hygiene Resources**
- ICW Group Resources

Industrial Hygiene Resources

All links will be made available after webinar!

- https://www.aiha.org/consultants-directory
- https://www.aihaaccreditedlabs.org/lab-accreditation-programs/find-an-accredited-lab





Industrial Hygiene Resources

What it means to YOU:

- You can search for and bid with Industrial Hygiene resources.
  - Help you perform compliance based air sampling when needed.
- ICW Group is able to help
  - With basic chemical risk assessment before you sample
  - In select cases, can do more detailed risk assessment when warranted

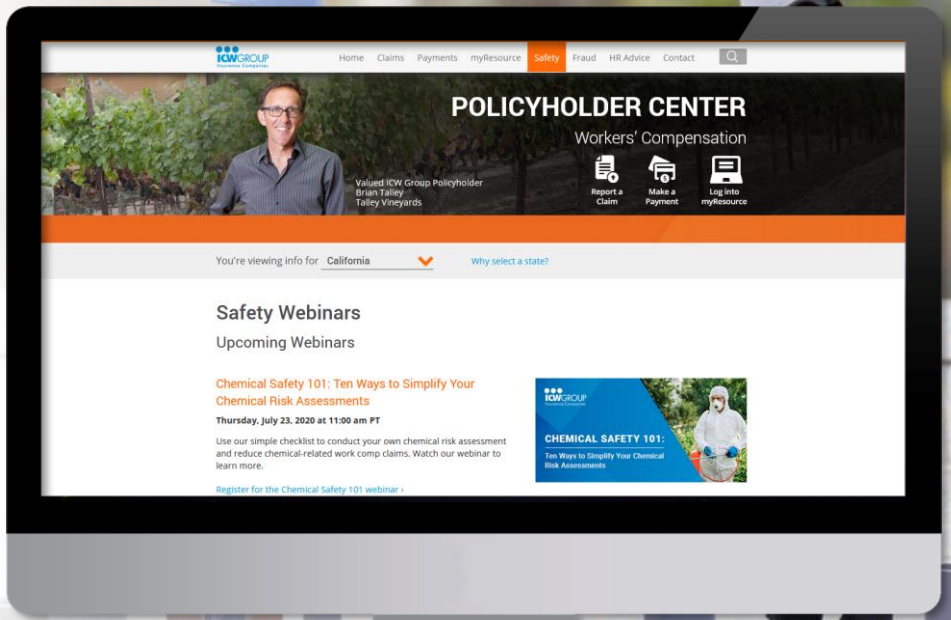
TOPICS:

- Chemical Safety: 10 Ways to Simplify Risks
- Industrial Hygiene Resources
- **ICW Group Resources**

ICW Group Policyholder Website!

Find all resources!

- Safety and Risk Management area
- Safety Webinars
- 10 EASY Ways to Simplify Your Chemical Risk Assessments



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ICW Group Policyholder Website!

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Find all resources!

- 10 Easy Ways poster
- GHS At a Glance
- Chemical Safety Poster
- Safe 10 Tool

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ICW Group Policyholder Website!

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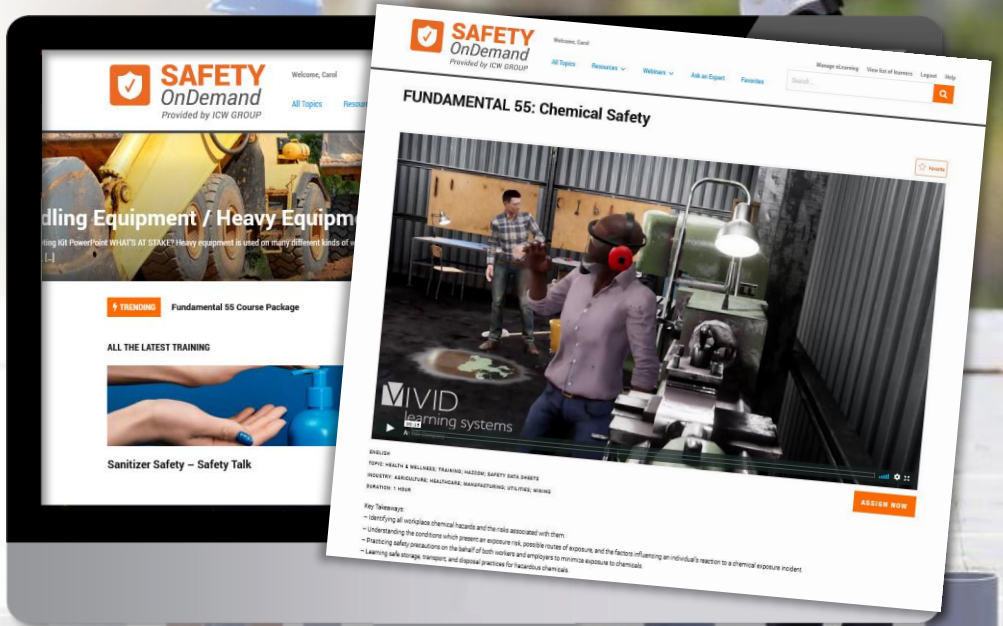
Log into myResource

- Open Safety OnDemand
- Search for GHS, Chemical, to find relevant meeting materials and training



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10 EASY WAYS to Simplify Your Chemical Risk Assessments

QUESTIONS?

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THANK YOU!

ALL SAFETY MATERIALS:

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