

# What Every Company Should Know About Industrial Hygiene

**Industrial hygiene (IH) is the science devoted to anticipating, identifying, analyzing, and controlling environmental factors in the workplace that may negatively impact worker safety and health.** Industrial hygiene reveals the extent of worker exposure to harmful agents so proper engineering controls, work practices, and other protective measure can be implemented.

Almost half of the compliance officers employed by the Occupational Safety and Health Administration (OSHA) are industrial hygienists. These industrial hygienists are tasked with inspecting workplaces, assisting with developing OSHA standards, and issuing technical interpretation of OSHA regulations. Countless other industrial hygienists work in laboratories, chemical processing plants, or are contracted by many employers in various industries.

## Which regulations apply to workplace IH?

Employers are required to implement some element of an industrial hygiene or occupational health program. Compliance with OSHA regulations can be tricky, especially if you aren't sure where to look first.

To start, the OSH Act establishes the criteria the employer will use in protecting employees against health hazards and harmful materials. Duties of employers and employees are found in 29 USC 654 (including Pub. L. 91-596 "OSH Act of 1970" 5(a)(1), the "General Duty Clause (GDC)").

In addition to the GDC, occupational health and environmental control requirements are dependent upon the type of work and associated hazards. These requirements are scattered throughout 1910 Subpart G for general industry and 1926 Subpart D and include mandates for:

- Combustible dusts;
- Gases, vapors, fumes, dusts, aerosols, mists;
- Illumination (lighting);
- Ionizing and non-ionizing radiation;
- Lead;
- Occupational noise exposure; and
- Ventilation



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continued

While OSHA doesn't explicitly list "industrial hygiene" as a standard, here are other regulations that cover the hazards that industrial hygienists are looking for:

GENERAL INDUSTRY (1910)	CONSTRUCTION (1926)
1910.1001 – Asbestos	1926.1101 – Asbestos
1910.1017 – Vinyl chloride	1926.1117 – Vinyl chloride
1910.1025 – Lead	1926.1126 – Hexavalent chromium (Chrom VI)
1910.1025 – Hexavalent chromium (Chrom VI)	1926.1127 – Cadmium
1910.1027 – Cadmium	1926.1128 – Benzene
1910.1028 – Benzene	1926.1148 – Formaldehyde
1910.1030 – Bloodborne pathogens	1926.1153 – Respiratory crystalline silica
1910.1043 – Cotton dusts	
1910.1048 – Formaldehyde	
1910.1096 – Ionizing radiation	

## What are IH services?

Not every company has the resources to employ an industrial hygienist. There are alternative options available, however. **Industrial hygiene (IH) services assist employers in identifying, evaluating, and addressing workplace hazards that could potentially lead to employee illness or injury.** Often overlooked, IH plays a crucial role in ensuring the safety and well-being of workers, working diligently behind the scenes. Furthermore, these services aid employers in meeting federal, state, and local compliance requirements.

Those providing IH services maintain an objective attitude toward workplace hazards and may counsel employees regarding those hazards and associated precautions necessary to protect themselves.

Here are some ways IH services enhance an organization's health and safety program:

<b>IDENTIFICATION</b>	
Hazards are identified through the careful assessment of tasks, processes, and employee work areas. These hazards can take various forms, including airborne hazards from chemicals, physical hazards, and ergonomic hazards.	
HAZARD TYPE	EXAMPLES
Air contaminants (particulate or gas/vapor)	Dusts, fumes, mists, aerosols, and fibers.
Biological	Bacteria, viruses, mold, and tuberculosis.
Chemical (solids, liquids, or gases inhaled, absorbed, or ingested)	Flammable liquids, compressed gases, lead, asbestos, respirable crystalline silica, liquid petroleum gas, and anhydrous ammonia.
Physical (involves energy transfer)	Equipment and vehicles, noise, temperature, lighting, radiation, and vibration.
Ergonomics (applied science that adapts the work environment to the worker)	Tasks that involve repetition, awkward or static body posture or positioning, physical force or lifting, continuous contact with an object, extreme temperatures, poor lighting, and vibration.

## EDUCATIONAL/ANALYSIS

Workplace hazards are evaluated and analyzed so risks can be reduced to as low as reasonably achievable (ALARA). Analytics may also include monitoring or surveying specific hazards including:

- Permissible exposure limits (PELs) in the air, on surfaces, and from radiation or noise;
- Employee exposure to lead, silica, asbestos, and hexavalent chromium;
- Occupational health concerns like tuberculosis, bloodborne pathogens, and musculoskeletal disorders (MSDs).

## CORRECTIVE ACTIONS

Identification and analysis of hazards can be in vain unless strategies are implemented to control and minimize risks. IH services are a valuable part of an overall health and safety program that aligns with operational, financial, and corporate goals and objectives. To meet these expectations, IH services may result in recommended controls that should be implemented.

CONTROL TYPE	EXAMPLES
Engineering (separating workers from hazards)	Ventilation systems, noise dampening materials, machine guarding, use of robots, radiation shields, and ergo-friendly workstations.
Elimination or substitution	Removing old or noisy equipment, replacing chemicals with less hazardous versions, or changing work processes, eliminate working at heights or with heavy objects.
Work practices	Inspections, housekeeping policies, and encouraging employee breaks to reduce ergonomic stressors.
Administrative	Shift rotations, assigning tasks during cooler (or warmer) parts of the day, and adjusting assignments to protect workers from hazards.
Personal protective equipment (PPE) (additional, last line of defense)	Hard hats, safe eyewear, respiratory protection, hearing protection, aprons, chaps, safety shoes, proximity and lone worker sensors, and weather-appropriate and high visibility clothing.

## RECORDKEEPING

IH services don't stop after corrective actions are recommended. The process is wrapped up with documentation and reporting on:

- Identified hazards,
- Worker exposure profiles,
- Sampling, monitoring and laboratory results,
- Recommended corrective actions for workplace hazards,
- Potential citations from OSHA if issues aren't corrected; and
- Information helpful in determining future corporate objectives for safety management and training.



## Benefits of third-party industrial hygiene services

Engaging third-party industrial hygiene services, while not required by regulation, can help support a positive safety culture that encompasses the values, expectations, and attitudes toward safety for your organization.

**Third-party industrial hygiene services provide organizations with an outside, unbiased assessment of potential safety and health issues in the workplace.** This not only can boost employee morale but

also enhances workplace safety. A strong safety culture encourages workers to report unsafe conditions, incidents, and near misses without retaliation. It also promotes the sharing of workable solutions to management.



Investing in industrial hygiene also demonstrates the company's commitment to the well-being of its workers, which directly impacts the overall safety in the company. A focus on safety leads to fewer injuries, illnesses, workers' compensation claims, and leaves of absence. Many companies find that the safety, efficiency, and productivity that industrial hygiene provides for an organization yields a strong return on investment.

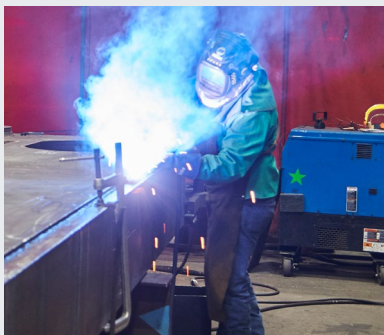
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