I'm not a bot

Those responsible for workplaces and other buildings to which the public have access can avoid them by taking responsibility for and adopting the right behaviours and procedures. This section covers general advice on fire safety and also provides guidance on substances that cause fire and explosion. General fire safety hazardsFires need three things to start – a source of ignition (heat), a source of fuel (something that burns) and oxygen:sources of ignition include heaters, lighting, naked flames, electrical equipment, smokers' materials (cigarettes, matches etc.), and anything else that can get very hot or cause sparks;sources of fuel include wood, paper, plastic, rubber or foam, loose packaging materials, waste rubbish and furniture;sources of oxygen include the air around us.What should employers do?Employers (and/or building owners or occupiers) should carry out a fire safety risk assessment and keep it up to date. This shares the same approach as safety and health risk assessments and can be carried out either as part of an overall risk assessment or as a separate exercise. Based on the findings of the assessment, employers need to ensure that adequate and appropriate fire safety measures are in place to minimize the risk of injury or loss of life in the event of a fire. To help prevent fire in the workplace, their risk assessment should identify what could cause a fire to start, i.e. sources of ignition (heat or sparks) and substances that burn, and the people who may be at risk. Once they have identified the risks, they can take appropriate action to control them. They should consider whether they can avoid them altogether or, if this is not possible, how they can reduce the risks and manage them. They should also consider how they will protect people if there is a fire.Employers should:Carry out a fire safety risk assessment.Keep sources of ignition and flammable substances apart.Avoid accidental fires, e.g. make sure heaters cannot be knocked over.Ensure good housekeeping at all times, e.g. avoid build-up of rubbish that could burn.Consider how to detect fires and how to warn people quickly if they start, e.g. installing smoke alarms and fire alarms or bells.Have the correct fire-fighting equipment for putting a fire out quickly.Keep fire exits and escape routes clearly marked and unobstructed at all times.Ensure their workers receive appropriate training on procedures they need to follow, including fire drills.Review and update their risk assessment regularly.Case studyA shopkeeper regularly threw packing waste by the back door of his shop as he quickly stocked the shelves after a delivery. His workers sometimes opened the back door to have a cigarette break outside. One week he'd left the pile of rubbish for several days and a discarded cigarette butt caused it to catch fire. By the time the fire was spotted and put out, it had caused substantial damage to his back door and his shelving units. There was a significant cost in damaged stock and repairs.How the fire could have been prevented?This fire could have been easily prevented if the shopkeeper had completed his risk assessment and taken simple steps to control the risks.Find out more Dangerous substances that cause fire and explosionWork which involves the storage, use or creation of chemicals, vapours, dusts etc. that can readily burn or explode is hazardous. Each year people are injured at work by flammable substances accidentally catching fire or exploding. What are the hazards?In addition to explosives which are not covered in this section many other substances found in the workplace can cause fires or explosions. These range from the obvious, such as flammable chemicals, petrol, cellulose paint thinners and welding gases, to the less obvious – engine oil, grease, packaging materials, dusts from wood, flour and sugar. It is important to be aware of the risks and to control or get rid of them to prevent accidents. What should employers do? To help prevent accidental fires or explosions, employers first need to identify:what substances, materials, processes etc. have the potential to cause such an event, i.e. substances that burn or can explode and what might set them alight;the people who may be at risk/harmed.Once they have identified the risks, they must consider what measures are needed to reduce or remove the risk of people being harmed. This will include measures to prevent these incidents happening in the first place, as well as precautions that will protect people from harm if there is a fire or explosion. Key points to rememberThink about the risks of fire and explosions from the substances used or created in the business and consider how they might remove or reduce the risks.Use supplier safety data sheets as a source of information about which substances might be flammable.Consider reducing the amount of flammable/explosive substances stored on site.Keep sources of ignition (e.g. naked flames, sparks) and substances that burn (e.g. vapour, dusts) apart.Dispose of flammable/explosive substances safely.Review the risk assessment regularly.Maintain good housekeeping, e.g. avoid build-up of rubbish, dust or grease that could start a fire or make one worse.Employers need to consider the presence of dangerous substances that can result in fires or explosions as part of their fire safety risk assessment. Case studyA worker was using highly flammable cellulose thinners in an open-topped container to wash paint-spraying equipment. He knocked the container over, splashing the thinners over his trouser leg and shoe.He went into a nearby room to clean himself up, but the room happened to contain drying ovens. These ignited the flammable vapours coming from the thinners, which set his trouser leg and shoe on fire, causing serious burns to his leg and foot.How this incident could have been avoidedIt could have been easily prevented if the employer had carried out a risk assessment to identify that cellulose thinners should not have been used in this way, and instructed the worker accordingly.Find out more Guidance on fire and explosion A safe and healthy working environment is a fundamental principle and right at work. Thus, all Members have an obligation arising from the very fact of membership in the ILO to respect, to promote and to realize, in good faith and in accordance with the ILO Constitution, the principles concerning this fundamental principle and right.Despite this important decision and the significant progress in occupational safety and health (OSH), work-related accidents and diseases still occur too frequently, with devastating impacts on workers, enterprises and entire communities and economies. Occupational safety and health (OSH) deals with all aspects of health and safety in the workplace. Its goal is to prevent the occurrence of occupational accidents and diseases. A safe and healthy working environment is one where risks are eliminated or when all reasonably practicable actions have been taken to reduce risks to an acceptable level and where prevention has been integrated as part of the organizations culture.Since its creation the ILO has been promoting occupational safety and health, and over the years has adopted about 40 Conventions and Recommendations specifically dealing with these issues.Employers have to comply with OSH laws and regulations. But management of occupational safety and health is not only a question of legal compliance. There is a business case for safety and health at work. Good OSH performance can help ensure business continuity, preventing high levels of absence and avoiding losses of skilled workers. It can raise productivity and competitiveness as well as lead to reductions of insurance premiums. Additionally, health and safety investments can be justified on strategic grounds such as maintaining strong reputation to attract talent and preferred supply chain relationships. Finally, managing OSH issues can be an opportunity to improve workplace cooperation and dialogue, boosting employee engagement.To manage OSH efficiently companies focus on building a safety culture within the organisation, employing risk management and control principles, aligning OSH management systems with other business operations, and involving workers in OSH management issues.At the same time, employers are not the only ones involved in securing safety and health in the workplace. Workers and their representatives should cooperate with employers by taking reasonable care of their own safety, complying with the instructions given regarding safety and health, using protective equipment correctly and reporting any hazardous conditions or events and accidents. To promote compliance and good OSH performance, it is also key that employers are provided with support and guidance from relevant authorities. This is emphasised in the ILO Conventions 155 and 187. Micro and SMEs in particular may need help in complying with legal obligations and in developing OSH management processes.In the context of the COVID-19 pandemic, occupational safety and health took on even greater importance. ACT/EMP supports employers and business organisations in setting up OSH services such as trainings, information and advice, as well as in engaging in effective advocacy activities in the area of OSH. Please note: Information in some QuickTakes may be out of date or not reflect current policies. Scott Ketcham is OSHA's new Deputy Assistant Secretary. Previously, Ketcham led the agency's Directorates of Enforcement and Construction. Learn about avian influenza (bird flu) risks, transmission and symptoms, and proper use of personal protective equipment with OSHA's resources. OSHA Assistant Secretary Doug Parker was honored with the VPPPA Chair's Award of Excellence for his leadership and support of OSHA's Voluntary Protection Programs, and all his work to advance health and safety excellence. Employers must post their 2024 Summary of Work-Related Injuries and Illnesses (Form 300A) in their workplace from February 1 through April 30, in a location where employees can see it. Meet Kristina, a regional supervisory investigator who appreciates helping populations that are unaware of their rights or afraid to act on them. Visit I Am OSHA and meet more members of our team. QuickTakes subscribers occasionally receive DYK? bulletins about a single timely topic, resource or upcoming event. Motor vehicle accidents are the leading cause of worker injuries and death.1 Driver safety training is a protective measure against crashes and helps protect drivers and other people on the road, resulting in fewer lives lost and reduced lost time on the job. Driver safety training is included in any commercial driver's license (CDL) training program. However, drivers operating trucks weighing less than 26,000 are not required to obtain a CDL. Additionally, a truck driver without a CDL may also tow a single-axle trailer with a gross vehicle weight rating (GVWR) of up to 10,000 pounds. These are substantially larger vehicles than the average driver is accustomed to operating and therefore potentially hazardous, and driver safety training can be beneficial even if not required. For drivers that are new to an organization and whose primary job responsibilities are driving on public roadways, a structured drivers training program should be in place. Also, anytime new vehicles are introduced into the fleet, drivers training specific to the new vehicles should be conducted. Additionally, driver refresher training should be conducted at regular intervals. Driver safety training is a continuous process and keeps drivers from becoming complacent when it comes to safety. Driver's training should include components such as: Vehicle characteristics, capabilities, and limitations Vehicle instruments, controls, and safety components Vehicle preventative maintenance checks and services Company driving policies and procedures - seat belts, distractions (including drowsy and impaired driving), aggressive driving and speeding Defensive Driving Vehicle Backing For drivers who drive occasionally for work in their privately owned vehicle (POV), a less structured approach may be sufficient. Driver's training programs should be scalable to meet the organization's needs. An electric arc is a type of electrical explosion. The electric arc produces a bright flash of hot gas, where temperatures can exceed 35,000 °F (19,400 °C), nearly four times the heat of the sun's surface. The energy released in the arc rapidly heats and vaporizes the metal conducting the electricity, producing an explosive arc blast resulting in deafening noises, supersonic concussive forces, and super-heated shrapnel. Most arc flash burn injuries are a result of the arc igniting flammable clothing and not from the arc itself. Flammable Clothing vs Appropriate Arc Rated PPE (AR PPE) Special thanks to KEMA Laboratories and the Partnership for Electrical Safety for this testing footage OSHA has produced the following guides to assist employers and employees in understanding and protecting against arc flash hazards: For Employers For Employees Additional Resources NFPA 70E. NFPA 70E requirements for safe work practices to protect personnel by reducing exposure to major electrical hazards. Originally developed at OSHA's request, NFPA 70E helps companies and employees avoid workplace injuries and fatalities due to shock, electrocution, arc flash, and arc blast, and assists in complying with OSHA 1910 Subpart S and OSHA 1926 Subpart K. (viewable for free with NFPA account registration) Partnership for Electrical Safety. The Partnership for Electrical Safety (PES) believes that every American working on or near energized electrical equipment deserves equal protection from arc flash, including the appropriate arc rated clothing and associated personal protective equipment (PPE). PES seeks to educate those at risk and to make plain to relevant oversight entities the need for use of PPE when doing industrial electrical work, and the extreme human and financial costs of non-compliance. One of the "root causes" of workplace injuries, illnesses, and incidents is the failure to identify or recognize hazards that are present, or that could have been anticipated. A critical element of any effective safety and health program is a proactive, ongoing process to identify and assess such hazards. To identify and assess hazards, employers and workers: Collect and review information about the hazards present or likely to be present in the workplace. Conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards. Investigate injuries, illnesses, incidents, and close calls/near misses to determine the underlying hazards, their causes, and safety and health program shortcomings. Group similar incidents and identify trends in injuries, illnesses, and hazards reported. Consider hazards associated with emergency or nonroutine situations. Determine the severity and likelihood of incidents that could result for each hazard identified, and use this information to prioritize corrective actions. Some hazards, such as housekeeping and tripping hazards, can and should be fixed as they are found. Fixing hazards on the spot emphasizes the importance of safety and health and takes advantage of a safety leadership opportunity. To learn more about fixing other hazards identified using the processes described here, see "Hazard Prevention and Control." Action item 1: Collect existing information about workplace hazards Action item 2: Inspect the workplace for safety hazards Action item 3: Identify health hazards Action item 4: Conduct incident investigations Action item 5: Identify hazards associated with emergency and nonroutine situations Action item 6: Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control Action item 1: Collect existing information about workplace hazards Information on workplace hazards may already be available to employers and workers, from both internal and external sources. How to accomplish it Collect, organize, and review information with workers to determine what types of hazards may be present and which workers may be exposed or potentially exposed. Information available in the workplace may include: Equipment and machinery operating manuals. Safety Data Sheets (SDS) provided by chemical manufacturers. Self-inspection reports and inspection reports from insurance carriers, government agencies, and consultants. Records of previous injuries and illnesses, such as OSHA 300 and 301 logs and reports of incident investigations. Workers' compensation records and reports. Patterns of frequently-occurring injuries and illnesses. Exposure monitoring results, industrial hygiene assessments, and medical records (appropriately redacted to ensure patient/worker privacy). Existing safety and health programs (lockout/tagout, confined spaces, process safety management, personal protective equipment, etc.). Input from workers, including surveys or minutes from safety and health committee meetings. Results of job hazard analyses, also known as job safety analyses. Information about hazards may be available from outside sources, such as: OSHA, National Institute for Occupational Safety and Health (NIOSH), and Centers for Disease Control and Prevention (CDC) websites, publications, and alerts. Trade associations. Labor unions, state and local occupational safety and health committees/coalitions ("COSH groups"), and worker advocacy groups. Safety and health consultants. Action item 2: Inspect the workplace for safety hazards Hazards can be introduced over time as workstations and processes change, equipment or tools become worn, maintenance is neglected, or housekeeping practices decline. Setting aside time to regularly inspect the workplace for hazards can help identify shortcomings so that they can be addressed before an incident occurs. How to accomplish it Conduct regular inspections of all operations, equipment, work areas and facilities. Have workers participate on the inspection team and talk to them about hazards that they see or report. Be sure to document inspections so you can later verify that hazardous conditions are corrected. Take photos or video of problem areas to facilitate later discussion and brainstorming about how to control them, and for use as learning aids. Include all areas and activities in these inspections, such as storage and warehousing, facility and equipment maintenance, purchasing and office functions, and the activities of on-site contractors, subcontractors, and temporary employees. Regularly inspect both plant vehicles (e.g., forklifts, powered industrial trucks) and transportation vehicles (e.g., cars, trucks). Use checklists that highlight things to look for. Typical hazards fall into several major categories, such as those listed below; each workplace will have its own list: General housekeeping Slip, trip, and fall hazards Electrical hazards Equipment operation Equipment maintenance Fire protection Work organization and process flow (including staffing and scheduling) Work practices Workplace violence Ergonomic problems Lack of emergency procedures Before changing operations, workstations, or workflow; making major organizational changes; or introducing new equipment, materials, or processes, seek the input of workers and evaluate the planned changes for potential hazards and related risks. Note: Many hazards can be identified using common knowledge and available tools. For example, you can easily identify and correct hazards associated with broken stair rails and frayed electrical cords. Workers can be a very useful internal resource, especially if they are trained in how to identify and assess risks. Action item 3: Identify health hazards Identifying workers' exposure to health hazards is typically more complex than identifying physical safety hazards. For example, gases and vapors may be invisible, often have no odor, and may not have an immediately noticeable harmful health effect. Health hazards include chemical hazards (solvents, adhesives, paints, toxic dusts, etc.), physical hazards (noise, radiation, heat, etc.), biological hazards (infectious diseases), and ergonomic risk factors (heavy lifting, repetitive motions, vibration). Reviewing workers' medical records (appropriately redacted to ensure patient/worker privacy) can be useful in identifying health hazards associated with workplace exposures. How to accomplish it Identify chemical hazards –review SDS and product labels to identify chemicals in your workplace that have low exposure limits, are highly volatile, or are used in large quantities or in unventilated spaces. Identify activities that may result in skin exposure to chemicals. Identify physical hazards –identify any exposures to excessive noise (areas where you must raise your voice to be heard by others), elevated heat (indoor and outdoor), or sources of radiation (radioactive materials, X-rays, or radiofrequency radiation). Identify biological hazards –determine whether workers may be exposed to sources of infectious diseases, molds, toxic or poisonous plants, or animal materials (fur or scat) capable of causing allergic reactions or occupational asthma. Identify ergonomic risk factors –examine work activities that require heavy lifting, work above shoulder height, repetitive motions, or tasks with significant vibration. Conduct quantitative exposure assessments –when possible, using air sampling or direct reading instruments. Review medical records –to identify cases of musculoskeletal injuries, skin irritation or dermatitis, hearing loss, or lung disease that may be related to workplace exposures. Note: Identifying and assessing health hazards may require specialized knowledge. Small businesses can obtain free and confidential occupational safety and health advice services, including help identifying and assessing workplace hazards, through OSHA's On-site Consultation Program. Action item 4: Conduct incident investigations Workplace incidents –including injuries, illnesses, close calls/near misses, and reports of other concerns– provide a clear indication of where hazards exist. By thoroughly investigating incidents and reports, you will identify hazards that are likely to cause future harm. The purpose of an investigation must always be to identify the root causes (and there is often more than one) of the incident or concern, in order to prevent future occurrences. How to accomplish it Develop a clear plan and procedure for conducting incident investigations, so that an investigation can begin immediately when an incident occurs. The plan should cover items such as: Who will be involved Lines of communication Materials, equipment, and supplies needed Reporting forms and templates Train investigative teams on incident investigation techniques, emphasizing objectivity and open-mindedness throughout the investigation process. Conduct investigations with a trained team that includes representatives of both management and workers. Investigate close calls/near misses. Identify and analyze root causes to address underlying program shortcomings that allowed the incidents to happen. Communicate the results of the investigation to managers, supervisors, and workers to prevent recurrence. Effective incident investigations do not stop at identifying a single factor that triggered an incident. They ask the questions "Why?" and "What led to the failure?" For example, if a piece of equipment fails, a good investigation asks: "Why did it fail?" "Was it maintained properly?" "Was it beyond its service life?" and "How could this failure have been prevented?" Similarly, a good incident investigation does not stop when it concludes that a worker made an error. It asks such questions as: "Was the worker provided with appropriate tools and time to do the work?" "Was the worker adequately trained?" and "Was the worker properly supervised?" Note: OSHA has special reporting requirements for work-related incidents that lead to serious injury or a fatality (29 CFR 1904.39). OSHA must be notified within 8 hours of a work-related fatality, and within 24 hours of an amputation, loss of an eye, or inpatient hospitalization. Action item 5: Identify hazards associated with emergency and nonroutine situations Emergencies present hazards that need to be recognized and understood. Nonroutine or infrequent tasks, including maintenance and startup/shutdown activities, also present potential hazards. Plans and procedures need to be developed for responding appropriately and safely to hazards associated with foreseeable emergency scenarios and nonroutine situations. How to accomplish it Identify foreseeable emergency scenarios and nonroutine tasks, taking into account the types of material and equipment in use and the location within the facility. Scenarios such as the following may be foreseeable: Fires and explosions Chemical releases Hazardous material spills Startups after planned or unplanned equipment shutdowns Nonroutine tasks, such as infrequently performed maintenance activities Structural collapse Disease outbreaks Weather emergencies and natural disasters Medical emergencies Workplace violence Action item 6: Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control The next step is to assess and understand the hazards identified and the types of incidents that could result from worker exposure to those hazards. This information can be used to develop interim controls and to prioritize hazards for permanent control. How to accomplish it Evaluate each hazard by considering the severity of potential outcomes, the likelihood that an event or exposure will occur, and the number of workers who might be exposed. Use interim control measures to protect workers until more permanent solutions can be implemented. Prioritize the hazards so that those presenting the greatest risk are addressed first. Note, however, that employers have an ongoing obligation to control all serious recognized hazards and to protect workers. Note: "Risk" is the product of hazard and exposure. Thus, risk can be reduced by controlling or eliminating the hazard or by reducing workers' exposure to hazards. An assessment of risk helps employers understand hazards in the context of their own workplace and prioritize hazards for permanent control.