

Food manufacturing safety with UL Solutions



Safety. Science. Transformation.™

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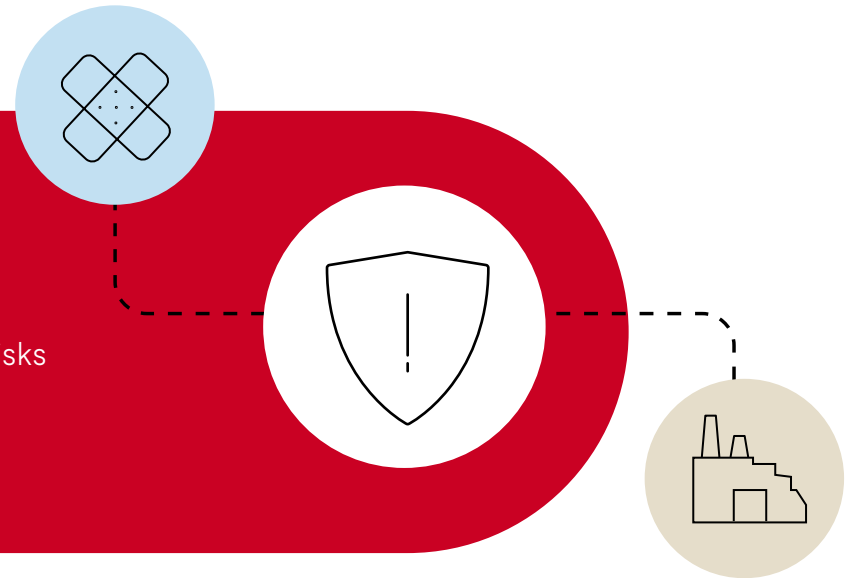


All employees in every part of the manufacturing industry deserve to have the knowledge and confidence to work safely. Food manufacturers need an in-depth understanding of complex safety issues — and this knowledge needs to be cascade throughout organizations. UL Solutions can help with its flexible, cost-effective, standards-driven online training courses.

As a global safety leader with decades of dedicated experience in manufacturing safety, UL Solutions is uniquely qualified to assist the food manufacturing industry in its efforts to take its safety programs to the next level and enhance the performance of frontline workers and managers. Our [Environmental Health and Safety \(EHS\) Online Safety Training Courses](#) provide the tools needed across organizations to help reduce risks and reap the many benefits that come with safer workplaces for everyone.

Examining the risks

Those tasked with employee safety understand the associated hazards and risks that, if not addressed, can contribute to incidents (injuries, property damage, equipment damage, fatalities).



The main safety risks affecting food manufacturers and their employees include:

- Noise
- Ergonomic issues
- Slips, trips and falls
- Strains and sprains
- Lacerations
- Fractures
- Burns
- Contact hazards
- Extreme hot and cold temperatures
- Dust
- Confined space issues
- Poor lockout/tagout (LOTO) procedures

This reflects the findings of a 2022 [Occupational Safety and Health Administration \(OSHA\) Local Emphasis Program](#) for the state of Wisconsin that aims to improve employee safety and reduce injuries across all food manufacturing plants.

Food manufacturing emphasis programs, such as those found in Wisconsin and, similarly, in North Carolina, emphasize training plan effectiveness. North Carolina's food manufacturing emphasis program directs compliance officers to interview machine operators about commonly violated lockout, tagout and machine safety rules.

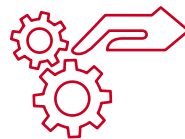
Inspectors will routinely ask about methods for clearing jammed equipment, the use of emergency stops and circuit control devices. They will also seek to understand if employees have worked under the protection of another employee's lock. Such interviews aim to establish the effectiveness of training and ensure awareness at the point of need. These interviews need not cause anxiety, but they often do because organizations know they could have done more to reinforce classroom training.

UL Solutions helps food manufacturers extend the reach of classroom training with software, training and advisory services to level up daily health and safety reinforcement through workplace observation and inspection, giving supervisors the tools they need to observe, coach and provide feedback.

Equipment introduced to automate processes and reduce ergonomic risk factors elevates the importance of machine guarding and safety. Routine production issues related to force, posture and repetition are being replaced by less routine, potentially more severe risks related to equipment cleaning and maintenance tasks. The fundamental shift in the nature of risk associated with automation and non-routine equipment tasks makes job readiness paramount.



Automated processes, factory equipment and conveyances produce noise that can damage hearing, especially if the proper protective equipment is unavailable. In addition, ineffective or incorrectly used equipment can present further risks. Many food organizations have the right equipment for operations but struggle to keep up with maintenance schedules or fully utilize the equipment at optimal levels. The constant cleaning and decontamination essential to hygienic food production can create fall hazards through slippery surfaces.



The risk of serious injury increases when safety is neglected during higher-risk activities involving confined space entry, LOTO, and machine adjustment and repair. For example, using conveyors to move materials is often quick and effective, but hand and wrist injuries can occur when employees are caught in machinery or fingers are crushed by heavy objects.

Routine maintenance is essential for effective food manufacturing, but these procedures can present additional safety challenges, especially when combined with confined spaces, complex machinery and temperature extremes. Freezers and ovens are integral to many operations, but the risks must be assessed and mitigated. Food manufacturers need to ensure corners are not cut during maintenance to save time or money, while ensuring all maintenance procedures are conducted with employee safety as the top priority.

Food manufacturers must move beyond simply understanding the risks and take a proactive, risk management-based approach to preventing injuries and deaths. Such an approach, with engaging and interactive training as a key pillar, means manufacturers can avoid government penalties for safety breaches and make good decisions that protect employees while still operating efficiently.



Moving beyond standards for everyone

As part of the production process, not only must multiple regulatory standards be accounted for and followed, but it is also imperative that all employees understand the complexity of the work and the associated hazards and risks they face.

The Occupational Safety and Health Administration (OSHA) addresses many hazards and risks present in the food manufacturing industry.

OSHA standards that commonly apply in the food manufacturing industry include:

- Walking-Working Surfaces OSHA 29 CFR 1910.22: General Requirements
- Walking-Working Surfaces OSHA 29 CFR 1910.28: Duty to have Fall Protection
- Occupational Health and Environmental Control OSHA 29 CFR 1910.95: Occupational Noise Exposure
- Material Handling and Storage OSHA 29 CFR 1910.178: Powered Industrial Trucks
- Machinery and Machine Guarding OSHA 29 CFR 1910.212: General Requirements
- Special Industries OSHA 29 CFR 1910.263: Bakery Equipment
- Toxic and Hazardous Substances OSHA 29 CFR 1910.1200: Hazard Communication



Food and Drug Administration (FDA) and ISO standards are also relevant to food manufacturers.

The FDA provides comprehensive guidance for food manufacturers across all operations. This includes requirements for the registration of food manufacturing facilities, standards for the condition of all equipment, hygiene standards to prevent contamination and the spread of disease in workplaces, and the wearing of appropriate protective equipment.



ISO standards, such as ISO 45001, play an important role in maintaining safety at food manufacturing plants, particularly in regard to internal and external auditing procedures. Regular independent third-party verification is an important part of being a mature, responsible food manufacturer, as well as introducing internal audits to maintain safety standards.

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Risk prevention

Risk prevention is central to all workplace safety strategies, and food manufacturing is no exception. There are multiple steps that food manufacturers can take to drive a prevention-focused approach, with training being an essential pillar.



UL Solutions and the courses we provide support the food industry by reinforcing classroom training so knowledge can be applied on the floor, where many of the risks and hazardous locations can be found. For example, food manufacturing sites may contain combustible organic dust, including, but not limited to, flour, sugar, grains and animal feeds. Understanding the risks associated with these materials is the first step to preventing accidents resulting from the hazards they pose.



A holistic approach to training

Initial training when onboarding new employees is important, but refresher training should not be neglected. As well as keeping the initial training information foremost in the minds of employees, refresher training is an opportunity to update everyone on safety innovations and updates to standards.

Training that can be adapted to fit the needs of new and longer-serving workers represents an excellent return on investment — especially when managers are under pressure to get the most out of budgets — as well as being engaging for employees. Harnessing the skills of different team members to lead the training also helps with employee engagement.

Involving employees at every step of the training process is empowering and helps build a culture of risk prevention. It is crucial that this training is engaging and interactive — this keeps employees interested and is an effective way to ensure all key safety messages are clearly communicated and applied at work every day.

It is also critical that training goes beyond the classroom and that knowledge is applied in practical situations. To be effective, every employee must be aware of the risks present in an area, know how to prevent potential risks and understand how to apply this knowledge in a practical setting.

Cross-functional audits

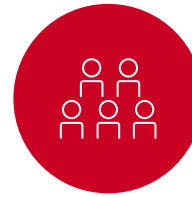
A detailed and flexible training strategy is bolstered by cross-functional audits. Such audits need to involve a range of people from different functions in the company. This diversity means systems can be examined with fresh eyes for a thorough, collaborative approach instead of simply involving a manager or a single employee.

Cross-functional audits help foster a proactive approach to risk assessment and management, as well as provide up-to-date information when new equipment or processes are added. However, it is important to always ask how to prevent risks in operating areas in the first place. This links in with high-quality training, which allows knowledge to be applied whenever there is a change in the workplace.

To understand how these cross-functional audits promote safety in a practical setting, combustible organic dust can be used as an example. It is essential to contain and capture dust; perform routine housekeeping to limit dust accumulation in all areas, including inner recesses of equipment and overhead areas; prohibit activities that loft dust, such as the use of compressed air; and prevent static buildup, discharge, and other ignition sources. UL Solutions offers worker training on combustible dust hazards and precautions, inspections, tests, and also lists equipment used in hazardous classified locations with the potential for ignitable concentrations of dust.



Structured cross-functional audits provide an opportunity for multiple employees or teams to review and report on the same potential risks, helping organizations to increase safety through a collaborative approach.



Management commitment

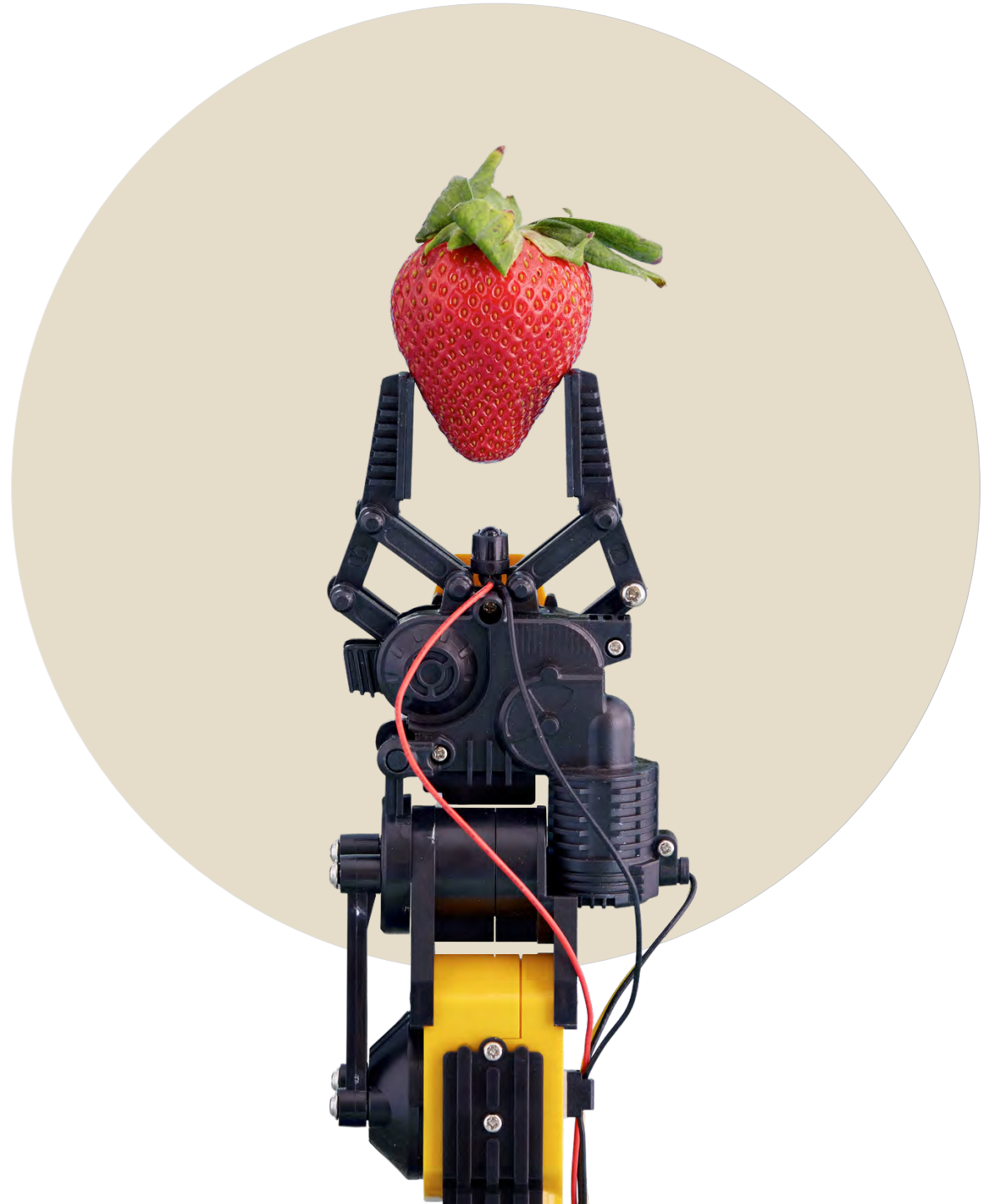
Developing a proactive risk prevention strategy requires the commitment of management at every level. That commitment to workplace safety needs to be public and enthusiastic — it is vital to set a positive example for employees so they know their safety is paramount and that managers are committed to staying up to date with all relevant developments. UL Solutions can adapt training sessions to empower managers take the lead, armed with the latest knowledge.

When employees are empowered and properly trained, they are better able to speak up if they identify hazards and can feel confident they will be taken seriously by management when they raise concerns. Informed involvement throughout the organization at different levels creates a with a strong focus on risk prevention.

UL Solutions' food manufacturing training courses are suitable for all levels of an organization and can play an integral part in developing the EHS risk prevention strategies that can help save lives, avert injuries and contribute to bottom-line benefits.

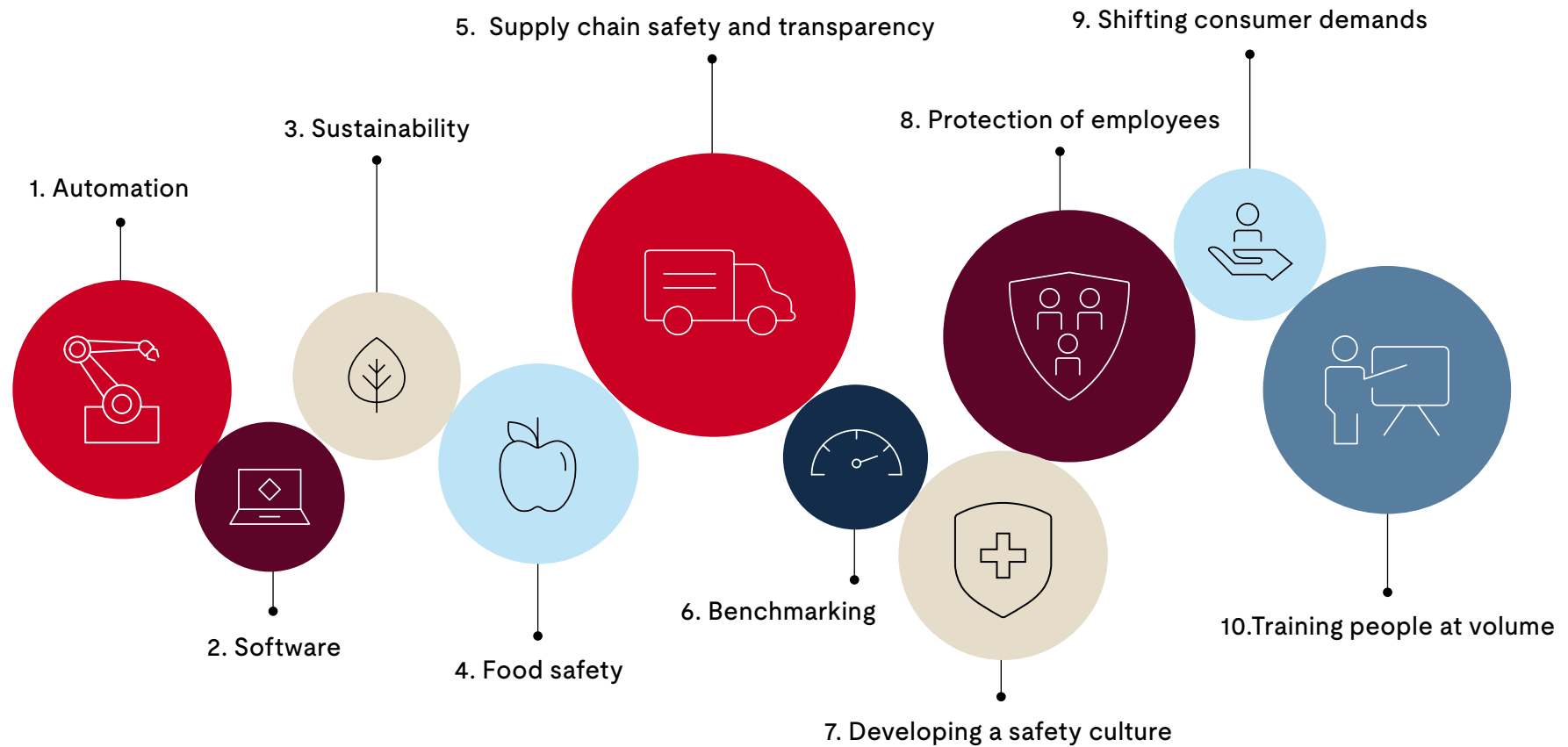
Innovations in an evolving industry

Changes to food manufacturing processes, safety technologies and industry trends make it more important than ever for management and employees to undertake regular EHS training. An overarching benefit of creating an up-to-date work force is increased employee engagement, which leads to a strong culture of safety and shared responsibility.



Ten key trends

Innovations in the food manufacturing industry take many forms, from tangible improvements to factory equipment to less tangible but equally important shifts in consumer demand and workplace culture.



Ten key trends

1 Automation

Automation has made many food manufacturing processes easier and more cost-effective, but new equipment can present new risks that must be identified and mitigated. In addition, automation has found its way to other parts of the value chain, such as self-driving vehicles for materials handling.

2 Software

Similar to automation — and often in conjunction with automation and the rise of Industrial Internet of Things technology — software has transformed many food manufacturing functions. However, human intervention is still required, particularly if automation is used to alert workers of safety issues.

3 Sustainability

Sustainability has become more than a buzzword. To meet increasingly stringent regulatory requirements and become more responsible manufacturers, introducing sustainability strategies has become commonplace across almost all markets. Manufacturing in a more environmentally sustainable way should ideally come with benefits in terms of employee health and safety, such as reducing pollution and the use of dangerous chemicals.

4 Food safety

Food safety and sanitation are essential priorities for the food manufacturing industry. Companies often have a short window of time for manufacturing and distributing products before spoilage and health issues become significant. Beyond the safety of workers at food production facilities, there is an additional safety responsibility that manufacturers have toward consumers. A [Clear Seas Research](#) report concluded that operators that invested in food safety and sanitation initiatives are reaping the benefits today.

Ten key trends

5

Supply chain safety and transparency

During the first year of the COVID-19 pandemic, stress on supply chains exacerbated the challenges of distributing fresh products for food manufacturers — and in some cases, supply chains still face difficulties. However, safety must remain a priority, which means speed needs to be balanced with safety along entire supply chains. Often, supply chains involve multiple external contractors. This requires manufacturers to ensure safety is a priority for these partners — to achieve this, transparency is vital, including evaluating partners' safety training programs.

6

Benchmarking

Benchmarking is vital at every stage of the production process. This includes involving supply chain partners, as well as evaluating the performance within a company's manufacturing facilities. Consistency in benchmarking, with measurable standards, is essential for every stakeholder. Certifications, such as those based on ISO safety and sustainability standards, should be a priority for all partners and monitored with regular audits. Ensuring training is an ongoing process, rather than a one-off when employees join a company, is a key part of maintaining these high standards.

7

Developing a safety culture

Alongside practical training, it is beneficial for managers and supervisors to develop their soft skills when it comes to executing safety strategies. A holistic approach to training is required to develop employees to maximize their leadership potential in this important field. Our training content goes beyond being a regulatory training exercise — our learning management systems can deliver safety leadership training that helps promote improved multi-level collaboration, which, in turn, helps to improve safety culture.

Ten key trends

8

Protection of employees

Many changes that were deemed essential during the early days of the COVID-19 pandemic have become permanent, including the protection of employees from infectious diseases. While economies have reopened and government-mandated restrictions have been lifted, many manufacturers are still committed to protecting employees from COVID-19 and similar infections, creating a healthier work force and reducing the costs of other illnesses.

9

Shifting consumer demands

Changes in consumer demands affect what products food manufacturers bring to market, and how they are made. If changes in demand mean manufacturers must pivot to new products or adjust existing products, this can change the operations processes and equipment required to manufacture in-demand goods. Consumer demands can change quickly, ranging from flavor trends to an increased focus on nutrition by a more health-conscious population to products that are easy to prepare at home. Food manufacturers are agile and adapted incredibly quickly when pandemic-related restrictions were first introduced. As equipment and processes change, employee training needs to be updated.

10

Training people in large organizations

Many food manufacturers have a large work force — and the rise in the use of contractors and subcontractors can increase numbers — so training multiple people in a timely manner is becoming more important across the industry. To provide safety training on a large scale, especially when employees work across a range of work shifts, a cost-effective, accessible and consistent approach is needed. Consistency, in particular, is crucial, so everyone receives the same information. When training is rolled out in an e-learning format, it is even easier to achieve that consistency in a user-friendly manner. Our interactive online training programs are designed to engage employees and develop knowledge effectively.



Benefits of online training

UL Solutions is a pioneer of online learning, and organizations will continue to reap the many benefits for years to come. EHS training is no exception, and our EHS [PureSafety® platform](#) has the flexibility to meet the complex safety training needs of food manufacturers. When costs are high and profit margins are tight, training can be one of the first investments to be reduced in the food manufacturing industry — especially when there is high staff turnover — but online training helps eliminate the budget risks. During the COVID-19 pandemic, online training became even more popular and this is a trend that is here to stay.

Key benefits of EHS online training courses for customers:

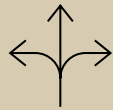
- Engaging, interactive courses that encourage learner focus and retention.
- Globally relevant training on the most important topics.
- A learning experience based on adult learning principles and up-to-date information from certified EHS advisors and industry experts who monitor content for regulatory changes and best practices.
- Post-course tests that give learners the chance to show what they learned.
- Job aids that summarize the key points of training, for learners to save and share.
- Consistency of training materials.
- Large volume of content in the library, with 400+ courses in English, 200+ in Spanish and 75 of the most critical safety topics translated into seven of the top global languages.
- Flexibility to adapt content to meet the specific needs of different companies.
- Flexibility for employees to take the courses at any time.
- Easily repeated training courses for multiple employees and refresher purposes.
- Courses available on a range of devices.
- Self-paced training options, so employees can train in a way that works for them.
- Constantly updated training content to keep up with new technologies and regulations.
- More cost-effective than classroom-based training.
- No travel costs.
- Reduction of carbon footprint for companies.

The advantages of the PureSafety® platform

With all UL Solutions EHS training courses, customers can be confident that employees will take courses based on decades of industry experience in best-practice online safety training. The user-friendly interfaces mean employees can interact with integrated instructional design elements specially created for effective adult learning.



The advantages of the PureSafety® platform



Flexibility

Online EHS training from UL Solutions is more cost-effective and flexible than a 100% instructor-led approach. It means training times are more flexible, making it easy for employees to refresh their understanding of hazards and precautions, especially for infrequently performed tasks. The courses can be completed at a pace that suits every individual.

On-demand approaches are especially helpful for supporting workers according to need. Providing training needs when and where it is needed and wanted makes it relevant, memorable, and reinforceable through immediate application in the workplace.

The flexibility of the PureSafety® platform means that managing, tracking and reporting on a safety training program is so much easier, especially for food manufacturers with operations across multiple facilities. It is also beneficial for companies that use external contractors and those leading organizations that want to create a strong safety culture with all stakeholders along value chains– the platform is a quickly way to roll out vital safety training at scale, especially when time is at a premium.

The advantages of the PureSafety® platform



Smart pricing

Flexible pricing is another advantage of the UL Solutions EHS online training courses. UL Solutions offers a subscription service that gives companies a choice of one-, three- or five-year terms, with updates to the content during the life of the subscription. The comprehensive library of material can be used at any time, which represents a much better value per employee and return on investment than instructor-led training.



Customization

Customization is another major advantage of our online EHS training. The platform allows companies to select the most relevant training material for their needs and build on the content, so it is specific to each customer.

Companies can take an existing course and customize it to their needs—or they can use UL Solutions services to build a custom-made course for their company. Genuinely bespoke training programs mean every aspect of the training will be relevant to every employee.

Training courses by UL Solutions go beyond regulatory updates and basic hazard information — every employee is empowered with a deep understanding of EHS principles and prevention that relates directly to their workplace.

Companies can add their own internal content, so training materials are always applicable and based on foundational and quality safety practices that are backed by UL Solutions expertise.

The advantages of the PureSafety® platform



Transparency and easy assessment

EHS online training courses by UL Solutions give employees, contractors and subcontractors easy access to material, and it is simple for HR and management teams to track everyone's progress. Complete online training programs and curriculum paths with measurement and completion reports can be set up quickly and easily.

The dynamic and engaging courses are highly interactive, with pauses along the way for learners to complete activities and answer questions, allowing them to apply their knowledge immediately. Post-training tests then allow effective measurement of employee training. The flexibility of the packages means that content can also be used for refresher training without requiring a formal assessment.



Global languages

The food manufacturing industry has a diverse workforce. People learn, understand, and retain information best if it is taught in their native language. UL Solutions understands the demographics of this industry and offers safety programs in widely spoken global languages. This is essential because the Occupational Safety and Health Administration (OSHA) requires all of training content to be provided in a language and vocabulary that employees understand.

Employers who fail to properly train their employees are subject to citation and penalties. If employees do not speak or comprehend English language training materials, instruction must be provided in a relevant language — this is where UL Solutions can step up to these language obligations to assist employers in meeting

Misinterpretation of training content can lead to lower productivity, lost revenue and, more seriously, injury and loss of life. This is especially true in food manufacturing. OSHA estimates that language barriers are a contributing factor in 25% of job-related accidents.

Additionally, UL Solutions Advisory Services has a team of certified industrial hygienists that can support organizations with e-learning that includes:

- Ergonomics evaluations
- Noise
- Ultraviolet radiation
- Dust/particulates
- Indoor air quality (IAQ), including ventilation
- Legionella/water sampling
- Chemical, especially corrosives used for cleaning and sanitization
- Temperature (heat/cold)

A team effort

UL Solutions provides comprehensive food manufacturing safety training based on decades of experience and industry expertise and is constantly keeping up with new technologies, regulatory changes and trends, and best safety practices. This will help promote an educated, proactive, motivated workforces where everyone looks out for safety together.





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