

INTERNATIONAL
**ENVIRO
GUARD**

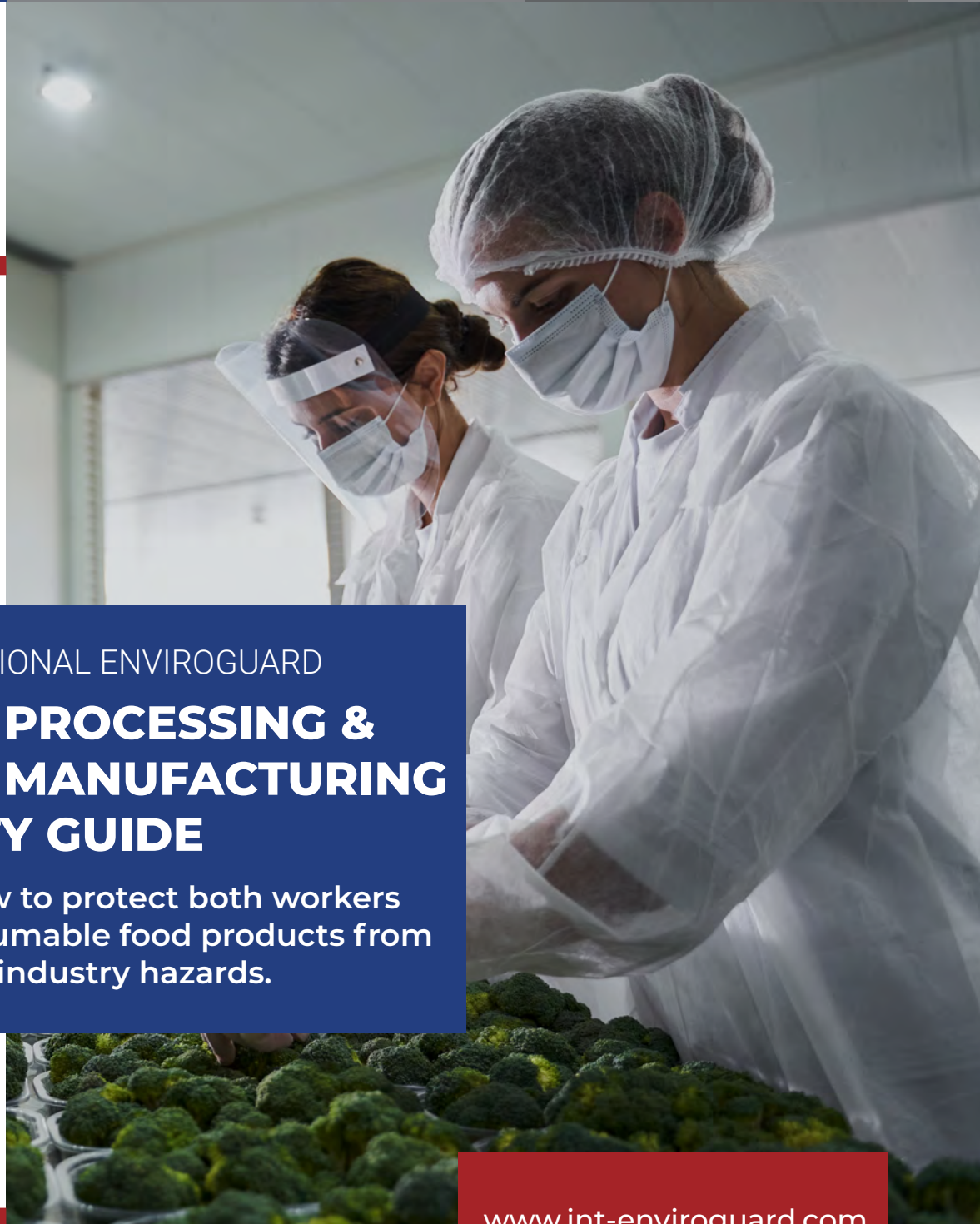
MANUFACTURER OF
DISPOSABLE PROTECTIVE
CLOTHING

2024

INTERNATIONAL ENVIROGUARD

**FOOD PROCESSING &
FOOD MANUFACTURING
SAFETY GUIDE**

Learn how to protect both workers
and consumable food products from
common industry hazards.



www.int-enviroguard.com

Contents:

Table of Contents

- 03** About International Enviroguard
- 04** Food Manufacturing Industry Overview
- 05** Shared Challenges for all Food Manufacturers

Food Industry Segments

- 06** Food Industry Segment Overview
- 07** Worker Hazards Overview
- 08** Industry Segment Descriptions

Hazard Mitigation

- 10** Hazard Mitigation Measures
- 13** Personal Protective Equipment (PPE)

Our Protective Clothing for Food Manufacturing

- 15** International Enviroguard Protective Clothing
- 20** Product Overview and Disclaimer

ABOUT OUR COMPANY

For over 30 years, International Enviroguard has designed and manufactured an extensive assortment of disposable protective clothing and surface protection for a wide array of industries such as oil and gas, pharmaceuticals, construction, controlled environments, food processing, healthcare, agriculture, environmental remediation, and more.

INTERNATIONAL ENVIROGUARD PRODUCTS

- Body Filter 95+®
- Carpet Guard™
- ChemSplash® 1
- ChemSplash® 2
- Enviromat®
- GammaGuard CE®
- MicroGuard MP®
- MicroGuard CE®
- Polypropylene
- PyroGuard FR®
- PyroGuard CRFR™
- SMS
- Soft Scrubs™
- ValuGuard MP™
- ViroGuard®
- ViroGuard® 2



WE KNOW PROTECTION

International Enviroguard is the go-to supplier after a crisis. Our expertise in assessing protective needs and our nimble ability to deliver, has kept several essential teams safe after natural and man-made disasters. We are called in to support teams as they work on hurricane clean-up, infectious disease outbreaks and oil spills. Our ability to quickly identify and deliver the best protection for the job extends beyond these disasters to our entire operation.



WE DELIVER AFFORDABLE CONFIDENCE

International Enviroguard delivers engineered protection for the best total cost. We safeguard your people with a comfortable fit, performance and quality that can reduce waste and increase safety. We deliver more than products, we give you the power to reduce total costs, while enhancing protection and productivity.

WE CREATE A MORE COMFORTABLE WORKDAY

Comfort matters in the workplace. We design garments that shield you from pathogens, contaminants and grime while giving you the comfortable dexterity you need to do your job with confidence. Our innovative materials keep you cool, while our thoughtful design and sizing improve fit, wearability and ultimately, protection.

WE INNOVATE A BETTER EXPERIENCE

We are passionate about safeguarding what matters through innovation. Design thinking, flexible operations and an empowered culture drive our team to continually identify and solve new challenges. From optimal fitting garments and cooler fabrics, to advanced protection and user-driven product features, we engineer comfort and productivity in every inch.

LEARN ABOUT THE FOOD PROCESSING INDUSTRY

Food Manufacturing Industry Overview

As technology continues to pave the way for safety enhancements, numerous industries are revising and updating regulations to keep pace and modernize. In 2011, US Congress amended the Food Drug & Cosmetic Act (FD&C) by passing the FDA Food Safety Modernization Act (FSMA).

This regulation aims to ensure the U.S. human and animal food supply chain is safe by shifting focus to preventing food contamination, instead of reacting to it. This proactive law provides specific actions that must be taken at each point in the supply chain to prevent contamination.

This is a shared responsibility among the numerous stakeholders in the global supply chain. This responsibility falls under “**traceability**”, meaning all parties must be able to track the product throughout all stages of the supply chain—from grower and producer to distributor and retailer. This allows for identification of all food inputs in order to take corrective actions. The law applies to human food and food for animals, including pet food.

Manufacturers’ Responsibilities

With this new regulation in effect, manufacturers are tasked with identifying all points in the supply chain where food contamination may occur, and addressing them. This may include tasks such as:

- Testing and sourcing safe raw materials
- Effective processing designed to destroy pathogens
- Pathogen monitoring to detect breaches in food safety
- Hygienic design and sanitization
- Temperature control and monitoring
- Moisture control and monitoring
- Providing adequate personal protective equipment (PPE) and clothing
- Record keeping

Governing Bodies and Regulations Applicable to all Segments of the Food Industry

- **The Food and Drug Administration (FDA):** The FDA is responsible for protecting public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation’s food supply, cosmetics, and products that emit radiation.
- **Federal Food Drug & Cosmetic Act (FFDC or FD&C):** Reviews and approves of food additives, ensures proper labeling, ensures production in sanitary conditions, and that food items are free of harmful substances. This act also requires manufacturers to set pesticide tolerances for all pesticides used in or on food, or in a manner that will result in a residue in or on food or animal feed. “Tolerance” refers to the maximum permissible level for pesticide residues allowed in or on human food and animal feed.
- **Food Safety Modernization Act (FSMA):** Focuses on preventing food supply contamination, instead of responding to it (proactive vs. reactive).
- **The Food Quality Protection Act (FQPA):** This regulation standardized the way the Environmental Protection Agency (EPA) manages pesticide use. This act mandates a health-based standard for pesticides used in foods, provides special protections for children and infants, streamlines the approval of safe pesticides, establishes incentives for the creation of safer pesticides, and requires that pesticide registrations remain current. The FQPA marks the first time the EPA was directly asked to address the risks pesticides pose toward infants and children who are smaller and therefore experience a proportionately greater impact.

LEARN ABOUT THE FOOD INDUSTRY

Shared Challenges for all Industry Segments



Perishability

Due to the perishable nature of food items, strict controls are in place to maintain food quality and freshness. Many food items are delicate with a short shelf-life, like fruits or vegetables. Therefore, temperature, humidity, handling, and transportation are regulated to prevent damage or premature spoilage.

Climate Change (including Natural Disasters)

Rising global temperatures have increased energy costs and water consumption around the globe. Longer periods of drought & extreme heat can kill animals, ruin soil systems, reduce food sources for grazing animals, kill or reduce crop outputs and quality, and shift demand to unaffected countries or areas. Extreme heat has also increased wildfires, which desecrate croplands and livestock. An uptick in severe weather events, like hurricanes, pose similar threats.

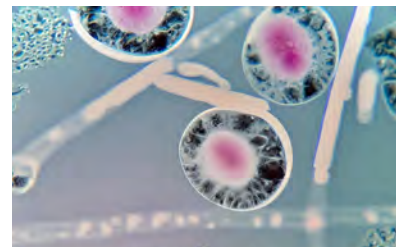


Sustainability

Environmental and sustainability issues are a constant threat to the food industry. The need to reduce greenhouse gas emissions, find plastic alternatives, reduce single-use plastic, and to implement sustainable packaging materials is an ongoing challenge.

Diseases & Pest Control

There are many zoonotic diseases that spread rapidly between animals, often leading to the culling of entire populations of livestock like chickens, cows, and pigs. Other pests, such as insects and rodents, can contaminate or consume food products like grains or crops. Global warming is also contributing to the spread of pests into new regions where soil temperatures have risen enough to support non-native species.



Supply Chain Disruption

The global supply chain is sensitive to events such as natural disasters, climate change, political upheaval, union strikes, new laws / regulations, and trade relations. Manufacturers are often forced to find new suppliers to cut costs, to source undamaged raw materials, or to avoid political conflicts of interest.

Consumer Dietary Trends

Numerous dietary trends shift product demand and often create new product categories. As consumers increasingly demand more healthy food options, categories such as "keto-friendly", dairy-free, sugar-free, low carb, and non-GMO are growing in popularity.



Alternative Products

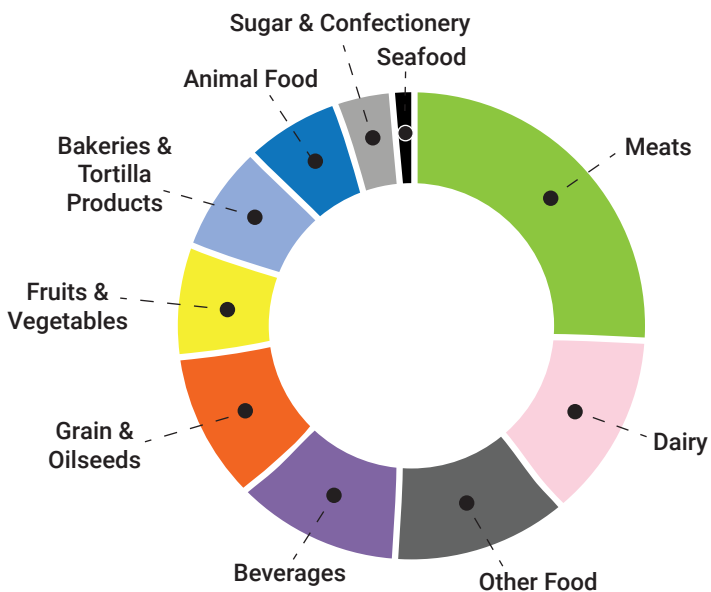
Consumer trends and the need for more allergy-sensitive foods has generated alternative products. In particular, the dairy sector has seen the emergence of non-dairy milks, yogurts, cheeses, & ice creams. Most of these products are plant or nut-based, derived from soy beans, almonds, oats, rice, cashews, coconuts, flax seeds, and more.

LEARN ABOUT THE FOOD INDUSTRY

Food Industry Segment Overview

The food manufacturing industry can be broken down into ten distinct segments. Meat processing (26%) and dairy product manufacturing (13%) are the largest segments in terms of sales.

Components of Food & Beverage Manufacturing: Sales, Value of Shipments, or Revenue by Industry



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Annual Survey of Manufacturers; data as of December 2022.

Foodborne Contaminants: The Shared Hazard and Responsibility of All Food Industry Segments

Preventing contamination from foodborne hazards is a shared responsibility across all sectors in the food manufacturing industry. There are three main categories of food hazards that can be introduced into the food supply at any time throughout harvesting, processing, storing, packaging, preparing, or serving.

Contaminants are either chemical, biological, or physical.

Foodborne Contaminants

Chemical Contaminants

- **Naturally occurring toxins** such as mycotoxins from mold, marine biotoxins, and mushroom toxins
- **Persistent organic pollutants (POPs)** are compounds that accumulate in the environment and human body and include dioxins & polychlorinated biphenyls (PCBs)
- **Heavy metals** such as lead, cadmium, and mercury
- **Chemicals** are commonly used throughout food manufacturing for pest control (chemical residue), to maintain freshness, to enhance flavor, and to sanitize food contact surfaces or equipment.

Biological Contaminants

- **Bacteria** such as Salmonella, Listeria, and E. Coli
- **Viruses** including Norovirus and Hepatitis A
- **Parasites** such as fish-borne trematodes, tapeworms, Giardia, and Trichinella
- **Prions**, like “Mad Cow Disease” or (vCJD) in humans, are an infectious agent composed of protein
- **Insects**

Physical Contaminants

- **Human-generated contaminants** such as hair, dander, saliva, skin cells, finger nails, false nails, nail polish flakes, or clothing fibers
- **Manufacturing materials** like glass shards, metal shavings, packaging materials, plastic fragments, wood splinters, or toothpicks
- **Dirt, stones, and sand** resulting from improper or inadequate washing
- **Bones, animal hair, and feather fragments**

UNDERSTANDING INDUSTRY SEGMENTS

Worker Hazard Overview

The food manufacturing industry is one of the most dangerous industries. Mechanization has increased the tempo of work, also increasing the number of repetitive tasks. This has led to the rise of musculo-skeletal disorders and hearing damage due to higher noise levels created by the machinery.

Common safety and health problems arise from sharp cutting tools, dust in the air, contact with infected animals, and the use of hazardous chemicals.

According to the U.S. Bureau of Labor Statistics, there are 5.1 recordable injuries for every 100 employees in food manufacturing. That's 43% higher than the average injury rate across all industries.

The following sub industries have injury rates (per 100 employees) that are even higher. These include: Seafood (6.8) and Animal Slaughtering and Processing (6.7).

Shared hazards across all industry segments include:

- **Slips, trips, and falls** due to wet or greasy floors, falls from a ladder or storage structure, and objects in the way.
- **Serious cut wounds** from knives, cutting tools, or machinery.
- **Elevated noise levels** from machinery, machinery components, and processes can damage hearing.
- **Chemical exposure** and/or chemical burns from cleaning chemicals, pesticides, additives, or for use in certain processes.
- **Lack of machine guarding:** Without proper safeguards, workers can get fingers, hands, arms, long hair, or clothing caught in machinery resulting in serious injury.
- **Improper handling, storage, and disposal of toxic materials** and/or hazardous waste.
- **Rapid, repetitive movements** can cause musculo-skeletal disorders, strains, and sprains.
- **Operating in extreme heat or extreme cold** can lead to heat stress, cold stress, frostbite, thermal burns, and more.
- **The presence of mold, fungus, and/or mycotoxins** due to moisture and organic materials.
- **High dust concentrations** from organic materials, or processes like grinding and sifting, can create allergies, sensitivities, and respiratory disorders like occupational asthma.
- **Volatile Organic Compounds (VOCs)** are toxic gases released from chemicals used in manufacturing processes, from heating up substances, to fuels, disinfectants, pesticides, fermentation processes, decaying produce, and more.

Top 10 Food Manufacturing Safety Violations

Based on the number of citations issued, OSHA deems the top ten safety violations contributing to high injury rates in food manufacturing as the following:

1. Lockout/tag-out
2. Machine requirements
3. Wiring methods
4. Processing hazardous chemicals
5. Powered industrial trucks, such as forklifts
6. Mechanical power transmission, such as conveyors
7. Fall protection and falling object protection
8. Hazard communication
9. OSHA general duty clause (requires use of personal protective equipment (PPE))
10. Respiratory protection

Many of the top 10 violations result from inadequate PPE or improper use of PPE. Based on the General Duty Clause, employers are required to provide PPE when hazards cannot be eliminated and remain a hazard.



UNDERSTANDING INDUSTRY SEGMENTS

Animal Slaughtering and Processing (Meat) | NAICS 3116

This segment performs one or more of the following: 1. Slaughtering animals; 2. Preparing processed meats & meat byproducts; and 3. Rendering and/or refining animal fat, bones, & meat scraps.

This includes businesses that assembly cut & pack meats (boxed meats) from purchased carcasses.



Dairy | NCAIS 3115

This industry group consists of businesses that manufacture dairy products from raw milk, processed milk, and dairy substitutes.

This also includes the production of cheese, yogurt, butter, and dry, condensed, and evaporated milk products.



Other | NCAIS 3119

This group includes facilities with different production processes including the manufacturing of snack foods like puddings and microwave popcorn, coffee and tea, concentrates, syrups, honey, frosting, seasonings, dressings, and spice manufacturing.



Beverages | NCAIS 3121

This segment produces non-alcoholic drinks, soft drinks, carbonated waters, bottled waters, juices, alcoholic beverages, and specialty drinks.

This also includes breweries, wineries, and distilleries.

Grain and Oilseed Milling | NCAIS 3112

This industry group primarily mills flour or meal from grains or vegetables, manufactures malt, wetmills corn and other vegetables, crushes oilseeds and tree nuts, and manufactures breakfast cereals.

This group also prepares flour mixes or doughs from flour milled in the same establishment; mills, cleans, and polishes rice; refines and/or blends vegetable oils; manufactures shortening and margarine; and blends animal fats with vegetable fats.



LEARN ABOUT INDUSTRY SEGMENTS

Fruit & Vegetable Preserving | NCAIS 3114

This group includes (1) facilities that freeze food and (2) those that use preservation processes, like pickling, canning, and dehydrating. Both types begin the production process with inputs of vegetable or animal origin.



Bakeries & Tortillas | NCAIS 3118

This group includes businesses engaged in (1) baking bread & other bakery products on site, not for immediate consumption, fresh or frozen; (2) manufacturing cookies, crackers, & dry pasta; and (3) manufacturing tortillas. Also included are manufacturers of frozen cakes, pies, donuts, & pastries; and flour & mixed dough.



Animal Food | NCAIS 3111

This industry group is primarily engaged in manufacturing food and animal feed from ingredients such as grains, oilseed mill products, and meat products. This also includes pet food.



Sugar & Confectionery | NCAIS 3113

This group consists of (1) establishments that process agricultural materials, such as sugarcane, beet, and cacao, to create a new product (sugar or chocolate), and (2) businesses that begin with sugar and chocolate and process these further.



Seafood | NCAIS 3117

This group primarily engages in (1) canning seafood (including soup); (2) smoking, salting, & drying seafood; (3) eviscerating fresh fish by removing heads, fins, scales, bones, & entrails; (4) shucking & packing shellfish; (5) processing marine fats & oils; and (6) freezing seafood.

"Floating factory ships" that gather & process seafood into canned goods are also included.



INDUSTRY SEGMENTS & HAZARD MITIGATION

Hazard Mitigation

Machinery Use and Machine Guarding

- Implement machinery to eliminate tasks that are rapid, repetitive, or require excessive force. This helps prevent workers from developing musculo-skeletal issues, sprains, and strains.
- Train on proper machine use including cleaning techniques, especially for new machinery.
- Always turn the power off before touching even the smallest moving part of any machine.
- Use machine guards to prevent body parts, limbs, or clothing from getting caught in machinery.
- Use feeding devices to protect fingers when operating slicers and grinders.
- For chains and V belts, ensure clothes, hair, and accessories are not worn in a way that can get caught in moving parts.
- Learn the proper methods for cleaning machinery: Before cleaning, electrical power must be switched off; be vigilant when using water - leaks onto electrical equipment can cause electrical shock; cleaners should wear the recommended PPE, such as gloves, goggles and aprons; after cleaning, it's critical to check that machinery is correctly reassembled with the appropriate guards in place.

Workplace Layout

- Ensure machines are firmly fixed on an even surface and that there is adequate space around them to perform tasks safely.
- Ensure the floor around machines and work stations is kept clean and free of grease.
- Place rubberized cushioned floor mats at work stations and install non-skid floor materials/coverings on staircases and ramps, which should also have guard-rails.
- It's recommended that doors should be either translucent or made partially of glass so it's possible to see through them clearly. This helps avoid collisions, especially when holding hot items like baking trays, heavy loads, or sharp knives.

Noise Control / Hearing Safety

- Select low-noise equipment when purchasing new machines.
- Install silencers at air valves and exhaust pipes.
- Enclose noise-producing machines when possible.
- Use sound barriers.
- Provide earplugs or noise-canceling headphones in environments with high noise levels like flour mills and bottling plants.
- Substitute machinery parts or materials used: Machinery with metal parts can be loud. Wherever possible, consider replacing metal parts with softer materials like rubber. The use of glass and glass bottles is also loud. Switching to alternative materials like aluminum, plastic, or cardboard helps reduce noise levels.



LEARN ABOUT HAZARD MITIGATION

Infectious Diseases

Meat, dairy, agricultural, and seafood workers have a higher risk of contracting infectious diseases due to encountering raw meat, blood, and bodily fluids of animals.

- Blood and blood-borne pathogen resistant protective clothing should be worn when handling, packaging, preparing, slaughtering, and cutting any raw meat or animal byproducts (blood, bodily fluids, fat trimmings, etc.).
- Non-disposable personal protective equipment and hand towels must be washed, or in certain cases sterilized, as frequently as possible.
- Any wounds, even minor ones, must be sterilized and protective equipment such as gloves should be worn over-top.
- Vaccination of animals and workers helps reduce infections and the spread of infections.
- Frequent sterilization of machinery, surface preparation areas, tools, and flooring helps reduce germs, bacteria, and bio burdens.

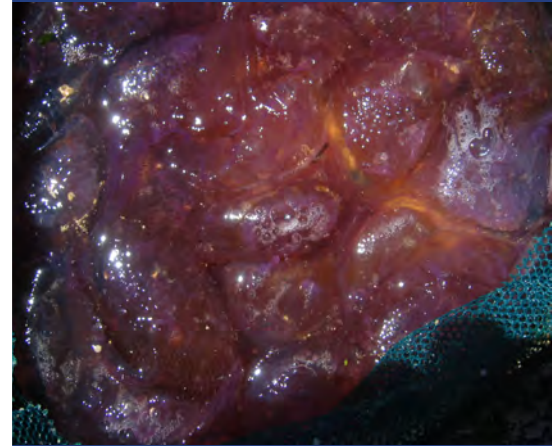
Blade and “Sharps” Injuries

Workers in the meat, marine products, and vegetable and fruit processing branches are at particular risk due to the sharp hand tools they use.

- Consider replacing manual tasks that require a blade with machines, where applicable. This can help reduce blade injuries from human error or fatigue.
- Use machine guards near blades and moving machine parts.
- Ensure cutting surfaces and cutting boards are securely in place and on a flat surface.
- Depending on the task, wear cut-resistant or puncture-resistant gloves to protect the hands.
- For broken glass: Use tongs and brushes when handling pieces that are large enough to see. Use a vacuum cleaner when cleaning up smaller glass particles. Bare hands should not be used at any time.

Ergonomics

- Set weight limits for certain tasks and / or increase the number of workers assigned to lifting heavy objects.
- Use machines for repetitive or strenuous tasks (heavy lifting, pulling, pushing, slicing).
- Modify workstation design: The ideal work surface height for light manual tasks is about 8 cm below the worker's elbow. The ideal work surface height for heavier jobs is where a worker's wrist bends. The height and size of worktables, or the chairs, must be adjustable to accommodate the worker's height and the nature of the task. Sufficient leg room is needed to work in comfortable postures, both for workers who stand or sit.
- Provide rest breaks to relieve fatigued muscles and tendons.
- Reduce line speeds or increase staffing levels / size.
- Reduce the weight of the manufactured items by reducing or substituting certain materials.
- Musculo-skeletal and repetitive strain disorders, such as tendonitis, can be reduced by using PPE such as braces, splints, and back belts.
- Rotate job tasks so that different movements and muscle groups are used.
- Reduce the need for excessive gripping strength or force—use fixtures to hold products, parts, or tools.



LEARN ABOUT HAZARD MITIGATION

Fires, Explosions, and Thermal Burns (Including Electrical Safety)

The widespread use of gas cooking equipment, boilers, autoclaves, and ovens increase the risk of fire. Routine inspections and maintenance help identify and fix fire or explosion hazards before disaster strikes.

- Boilers: A low water level or high pressure in the boiler may thin the boiler shell or deteriorate the metal, leading to an explosion. Routinely check water and pressure levels to ensure the boiler is not an explosion risk.
- Autoclaves: Similar to a boiler, water and pressure levels must be kept at the prescribed levels. Autoclave components, such as valves and rubber door gaskets, also require regular checking.
- The edible fats and vegetable oils branch is typically the most at risk of explosions and fires. Regular cleaning of machine components, such as filters and ducts, as well as cleaning around machines prevents the accumulation of grease which is flammable.
- The proper installation of all electrical equipment. This includes grounding; routine maintenance by an electrician; checking wires for cracking and fraying; using appropriate fuses; the use of splash-proof, hose-proof or watertight equipment where there is a risk of contact with water (while in operation or cleaning machinery); and installing the adequate number of outlets to reduce the need for trailing cables.
- Many segments use heat process for added value (roasting, drying, boiling, baking); however, these activities increase the risk of a burn. Some simple best practices should be followed to reduce risk:
 - When lifting a pot cover, the worker should tilt it away from the body in order to release the steam before opening it completely.
 - Never leave heated oven doors open.
 - Pour hot liquids away from the body.

Respiratory Safety (Including Ventilation)

Airborne dust is a common hazard in food processing facilities. In particular, spice factories and grain mills have some of the highest airborne dust concentrations. In other segments, many chemicals, cleaning agents, and food additives are supplied in powder form, which also pose inhalation risks.

- The use of a fit-tested respirator or a face mask may be needed in environments with high dust concentrations, chemical vapors, or noxious gases.
- Consider switching from solid or small-particle chemicals and food additives to liquid alternatives.
- Use a vacuum cleaner instead of an air gun for cleaning. Air guns increase dust concentrations in the air.
- For high-dust generating processes, install guards or barriers to trap and contain dust. Consider isolating dust-generating machines or processes to a designated room or area to prevent dust from spreading to other areas.
- The use of HEPA filters and other air filtration systems can help cut down on dust concentrations, especially when placed where the dust is generated.
- Ventilation helps reduce the risk of explosion if flammable gases are used on site. It can also prevent the inhalation of fungi, mycotoxins, chemical powders, and hazardous dusts.

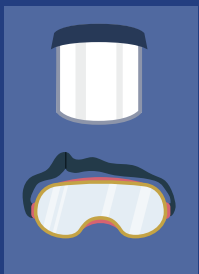


PROTECTIVE CLOTHING & PERSONAL PROTECTIVE EQUIPMENT

Chemical Protection

Frequent sanitization of surfaces and equipment requires chemicals to prevent the contamination of food items. Goggles, face shields and respirators are normally worn by workers who mix hazardous chemical substances. Other commonly used items include chemical-resistant sleeves, aprons, frocks, and coveralls.

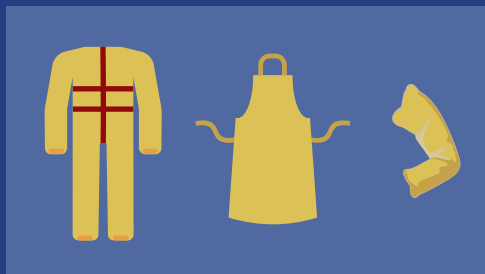
When working with chemicals, it's recommended to cover as much of the body as possible to protect against splashes and sprays. The hands and arms are typically the most at-risk and should be covered with chemical-resistant clothing.



Eyes and Face
Face shield or Safety Glasses/Goggles



Lungs
Fit-Tested Respirator or Face Mask



Exposed Skin
Chemical-resistant: Coverall, Apron, Frock, Long Sleeved Shirt, or Sleeves



Hands and Feet
Chemical-resistant Gloves and Non-Slip Rubber Boots

Slip-Resistant Footwear

Slippery floors are common in the food industry, especially in meat and poultry processing plants, commercial fishing, and shrimping facilities. Fats, oils, & greases that fall can make flooring especially slippery.

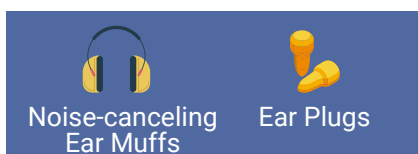
Slip-resistant footwear, such as PVC boots or using non-skid shoe or boot covers over-top of shoes, help enhance traction.



Non-Slip Boots or Anti-skid Shoe or Boot Covers

Hearing Safety

Machinery, machinery components, processes, and materials generate high noise levels. Noise-canceling headphones or ear plugs may be needed to protect hearing.



Noise-canceling Ear Muffs Ear Plugs

Respiratory Safety

Airborne hazards range from hazardous dusts to gases and chemical vapors. Depending on the hazards present and the task performed, a respirator or a face mask may be needed.



Fit-Tested Respirator or Face Mask

Infectious Diseases

Protection against infectious diseases requires protective clothing and equipment that safeguards against the penetration of blood, bodily fluids, and/or blood-borne pathogens.

Depending on the task performed and the hazards present, look for protective clothing that passes one or both of the following tests:

- **ASTM F1670 (Blood penetration)**
- **ASTM F1671 (Blood-borne pathogen penetration)**

Infectious Diseases (Continued)

Coveralls, aprons, sleeves, goggles/safety glasses, face shield, hoods, gloves, shoe and/or boot covers are commonly used.



Goggles or Safety Glasses
Coverall with or without Hood
Face Shield
Apron
Sleeves
Gloves
Non-Slip Boots or Anti-skid Shoe or Boot Covers

LEARN ABOUT HAND PROTECTION

The Importance of Hand Protection (Gloves)

Gloves are one of the most important and widely used forms of PPE across the food manufacturing industry. Gloves protect workers' hands from numerous hazards ranging from cuts and punctures to chemical exposure, extreme heat, freezing temperatures, blood, and more. Gloves also protect food items from human generated contaminants like skin cells, hair, bacteria, or contact with open wounds.

Glove Types for Food Manufacturing



Disposable

Workers who touch and handle food must wear gloves made with FDA-approved material(s). This includes workers who inspect, prepare, and package ready-to-eat foods. Wearing disposable gloves ensures that bacteria, skin cells, and any open wounds do not contaminate the food.



Reusable, Extended-Cuff

Gloves made of thicker polymers with extended cuffs should be worn when handling raw foods and non-food items like boxes or trash.



Chemical-Resistant

Activities like sterilizing vats, cleaning food preparation areas/sinks, sanitizing hand washing stations, & cleaning processing machinery use chemical detergents, soaps, & disinfectants require gloves. These harsh chemicals can cause chemical burns from direct exposure or from lingering chemicals on clothing. Industrial refrigeration units use ammonia to keep food products cold, so cold storage workers need chemical gloves. Individuals who transport cleaners & sanitizers are also prone to handling toxic materials and require chemical-resistant gloves.



Puncture-Proof

Workers need protection from cut and puncture hazards when handling sharp tools or sharp foods such as crustaceans or mollusks.



Cut-Resistant

A variety of knives and specialized cutting tools are used to prepare food products. Activities include cutting & trimming meat with knives, cleavers, meat saws, bandsaws, or other equipment. Equipment in food manufacturing has blades, pinch points, rolling parts, & other hazards that can cause permanent damage or disfigurement. Cut-resistant gloves that contain fiberglass aren't recommended for food contact. Fiberglass can cause injury to the intestinal tract if ingested.



Freezer Gloves

Workers who perform activities like warehousing food during and after production need thermal protection from cold rooms and freezers. Gloves should be flexible and well-fitting to ensure workers can easily grab items. Putting a pair of disposable gloves over freezer gloves helps the hands retain more heat, while also providing a waterproof barrier.



Heat Resistant

Individuals like bakers remove hot trays from ovens every day. These workers, and others who have exposure to hot equipment, need thermal protection. This includes workers who handle steam vacuums, processing cookers, and scalding water to clean animal carcasses.

INTERNATIONAL ENVIROGUARD PROTECTIVE CLOTHING

Particulate and/or Aerosol Protection

GOOD - POLYPROPYLENE

Basic dry particulate protection

Lightweight and breathable polypropylene garments are effective for protection against agricultural dust, powders, dirt, plant materials, and other dry particulates.

Possible applications:

- Cutting, grinding, & mixing of dry ingredients
- Processing and packaging
- General cleaning and disinfecting
- Produce handling
- Assembly line operations
- Retail stores

[VIEW SALES SHEET & TEST DATA](#)



BETTER - SMS

Particulate & light splash protection

SMS offers three layers of protection against particulates, sprays, and light splashes. Fabric is highly breathable, making it ideal for outdoor growing operations and humid conditions like an indoor grow house.

Possible applications:

- Cutting, grinding, & mixing of dry ingredients
- Produce handling
- Processing and packaging
- Assembly line operations
- General cleaning & disinfecting

[VIEW SALES SHEET & TEST DATA](#)

BEST - BODY FILTER 95+®

Ultra-fine particulate and overspray protection

Body Filter 95+® protects against noxious particulates down to 0.3-microns in the 95%-99% range. Garments protect wearers from ultra-fine particulates and aerosol particles.

Possible applications:

- Cutting, grinding, & mixing of dry ingredients
- Produce handling
- Overspray applications (spray tank use)
- Assembly line operations
- Processing & packaging

[VIEW SALES SHEET & TEST DATA](#)



INTERNATIONAL ENVIROGUARD PROTECTIVE CLOTHING

Chemical Protective Clothing for Food Processing

GOOD - CHEMICAL ACCESSORIES

Chemical splash sleeves & aprons

Possible applications:

- Mixing, loading, or applying chemicals, additives, or cleaning chemicals
- Preparing or handling solvents
- Handling, storing, or transporting chemicals
- General cleaning & sanitizing



CHEMSPLASH® 1 ACCESSORIES

#7065YT

#7065YS



#702846Y



BLUE PVC LONG SLEEVE APRON

#IT6CAB-C

[VIEW SALES SHEET & TEST DATA](#)



Serged Seams



Taped Seams

BETTER - CHEMSPLASH® 1

Light to medium-duty chemicals, acids, caustics, & blood

Garments are available in taped seam or serged seam styles. Fabric protects against less aggressive chemicals, acids, caustics, and blood.

[VIEW SALES SHEET & TEST DATA](#)

Possible applications:

- Mixing, loading, or applying chemicals, additives, or cleaning chemicals
- Preparing or handling solvents
- Handling, storing, or transporting chemicals
- General cleaning and sanitizing

BEST - CHEMSPLASH® 2

Heavy-duty chemicals, acids, caustics, blood, & blood-borne pathogens

Garments protect against a broad range of chemicals, caustics, acids, blood, and blood-borne pathogens making them ideal for a variety of applications.

Possible applications:

- Mixing, loading, or applying chemicals, additives, or cleaning chemicals
- Preparing or handling solvents
- Handling, storing, or transporting chemicals
- General cleaning and sanitizing

[VIEW SALES SHEET & TEST DATA](#)



INTERNATIONAL ENVIROGUARD PROTECTIVE CLOTHING

Protective Clothing for Blood, Blood-borne Pathogens, Grease, & Oils



GOOD - VALUGUARD MP

Lightweight microporous garments

Microporous fabric protects against common industrial chemicals, greases, oils, fats, liquids, and particulates for a wide variety of applications.

Possible applications:

- Produce handling
- Cutting, grinding, & mixing of dry ingredients
- Cleaning and sanitizing machinery and food preparation surfaces after raw meat was present
- Processing and packaging
- Assembly line operations

[VIEW SALES SHEET & TEST DATA](#)

BETTER - MICROGUARD MP®

Standard weight microporous garments

Microporous fabric protects against grease, fats, oils, blood, common industrial chemicals, and particulates for a wide variety of applications.

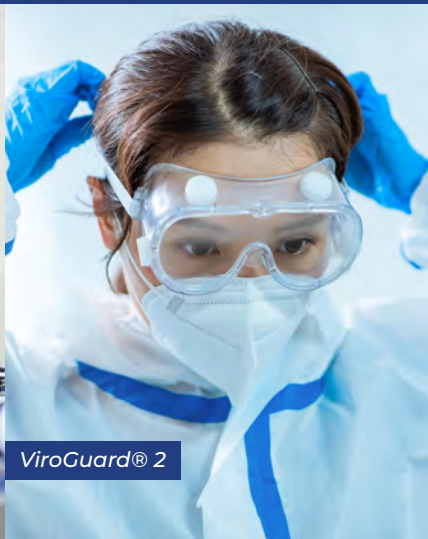
[VIEW SALES SHEET & TEST DATA](#)

Possible applications:

- Cutting, handling, and processing carcasses, meat, poultry, & seafood
- Receiving and packaging of raw meat products
- Cleaning and sanitizing machinery and food preparation surfaces after raw meat was present



ViroGuard®



ViroGuard® 2

BEST - VIROGUARD® & VIROGUARD® 2

Blood and blood-borne pathogen resistant garments

ViroGuard® fabric passes for blood & blood-borne pathogen penetration. ViroGuard® 2 fabric AND seams (taped seams) pass for blood and blood-borne pathogen penetration.

[VIROGUARD® SALES SHEET](#)

[VIROGUARD® 2 SALES SHEET](#)

Possible applications:

- Cutting, handling, and processing carcasses, meat, poultry, & seafood
- Receiving and packaging of raw meat products
- Sanitizing machinery and food preparation surfaces
- Handling and disposal of toxic waste/animal byproducts

INTERNATIONAL ENVIROGUARD PROTECTIVE CLOTHING

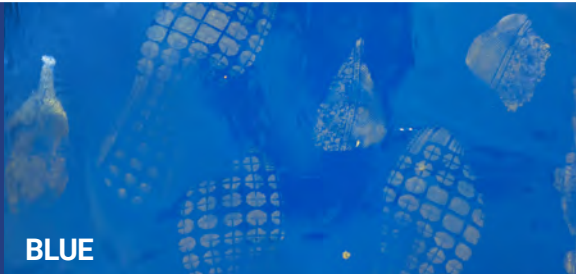
Contamination Control and Top Selling Accessories

ENVIROMAT TACKY MATS

Tacky mats for particulate & debris control

Tacky mats are available in six different sizes and three different colors (Blue, White, and Clear) to accommodate most applications. 30 Numbered layers per pad. No traction board or frame needed for installation. Made of a durable polyethylene film.

**VIEW SALES SHEET &
TEST DATA**



BLUE



CLEAR



WHITE

Blue

- EM1836R30B 18"x36"
- EM2430R30B 24" x 30"
- EM2436R30B 24" x 36"
- EM3645R30B 36"x45"

Clear

- EM1836R30C 18"x36"
- EM3636R30C 36"x36"

White

- EM2430R30W 24" x 30"
- EM2436R30W 24"x36"

**30-Layer Tacky Mat
4 pads/carton
10 cartons/case**

Hair Control - Bouffants, Beard Covers, Hoods, and Ninja Hoods



Flat Polypropylene Bouffants

White

- 19" #S110NW-19
- 21" #S110NW-21
- 24" #S110NW-24
- 28" #S110NW-28

Blue

- 21" #110NW-21B
 - 24" #110NW-24B
- 1,000 per case**

Pleated Polypropylene Bouffants

White

- 21" #S110NW-21PL
- 24" #S110NW-24PL

Blue

- 21" #110NW-21BPL
 - 24" #110NW-24BPL
- 1,000 per case**

Polypropylene Beard Restraint, White

- #S112NW
 - Size: Universal
- 1,000 per case**

White Polypropylene Head & Face Cover or "Ninja Hood"

- #NH2000
 - Size: Universal
- 1,000 per case**

Sleeves



Body Filter 95+® Sleeves, 18" Length, Elastic on Both Ends, White

- #4065
- 200 per case

MicroGuard MP® White Microporous Sleeves, 18" Length, Elastic On Both Ends

- #8065
- 200 per case

Blue PE Sleeves, 18" Length, Elastic On Both Ends

- #2185
- 2,000 per case

ChemSplash® 1 Sleeves, 18" Length, Elastic on Both Ends

- | | |
|--------------------|--------------------|
| #7065YT | #7065YS |
| Taped Seams | Serged Seams |
| 100 pairs per case | 100 pairs per case |

INTERNATIONAL ENVIROGUARD PROTECTIVE CLOTHING

Shoe Covers (Unassociated with a Product Line)

Non-Skid CPE Shoe Covers

Lightweight CPE Shoe Cover, XL

Fits up to mens' 12^{1/2}
#3602 - White
#3602B - Blue
1,000 per case



Heavy-Duty CPE Shoe Cover, Large

Fits up to mens' 12^{1/2}
#3607 - White
#3607B - Blue
300 per case



Heavy-Duty CPE Shoe Cover, XL

Fits up to mens' 12^{1/2}
#3407 - White
#3407B - Blue
300 per case



Super Heavy-Duty CPE Shoe Cover, XL

Fits up to mens' 12^{1/2}
#3417 - White
#3417B - Blue
300 per case



PE Shoe Covers

Lightweight PE Shoe Cover, XL

Fits up to mens' 12^{1/2}
#3209 - Blue
500 per case



Non-Skid, Laminated Shoe Covers

FirmGrip Shoe Cover, Large

Fits men's size 6-11
#3701 - White
#3701B - Blue
300 per case



FirmGrip Shoe Cover, XL

Fits men's size 12-16
#3703 - White
#3703B - Blue
300 per case



Non-Skid, Polypropylene Shoe Covers

Blue, Polypropylene Shoe Cover

#V3100 - Universal
#V3200-XL
300 per case



INTERNATIONAL ENVIROGUARD CLOTHING OVERVIEW & DISCLAIMER

BRAND	DRY PARTICULATE, DUST, DIRT, GRIME	OVERSPRAY	HEAVY SPLASH, LIQUIDS UNDER PRESSURE	BLOOD-BORNE PATHOGENS ASTM F1671	BLOOD ASTM F1670	CHEMICAL SPLASH	SPARKS, FLAMES	ANTI- STATIC EN 1149-5
Body Filter 95+®	✓	✓						
ChemSplash® 1	✓	✓	✓		✓	✓		✓
ChemSplash® 2	✓	✓	✓	✓ Fabric & Seams	✓ Fabric & Seams	✓		✓
MicroGuard MP®	✓	✓	✓		✓			✓
Polypropylene	✓							
SMS	✓	✓						
ValuGuard MP™	✓	✓	✓					
ViroGuard®	✓	✓	✓	✓ Fabric only	✓ Fabric only			
ViroGuard® 2	✓	✓	✓	✓ Fabric & Seams	✓ Fabric & Seams			

DISCLAIMER

The information provided is based on technical data and research that International Enviroguard believes to be reliable. All information is subject to revision as further knowledge becomes available. It is the user's responsibility to determine toxicity levels and the proper personal protective equipment needed. This information reflects the laboratory performance of fabrics under controlled conditions, not of complete "as-sold" garments. This information is intended for use by individuals with the technical expertise to evaluate their specific end-use conditions, at his or her own discretion and risk. Anyone using or intending to use this information should first check that a garment is suitable for the intended use.

Customers of International Enviroguard are solely responsible for conducting their own Hazard Risk Assessment to identify safety hazards in their work environment. Customers of International Enviroguard are solely responsible for selecting appropriate garments and personal protective equipment for their employees based upon known or potential hazards. Employers must ensure end-users properly use, care, and maintain their garments and personal protective equipment. An end-user should stop using a garment if the fabric becomes torn, punctured, or worn to avoid potential exposure to hazards.

As working conditions and other factors vary, International Enviroguard does not make or provide any warranties, expressed or implied, including but not limited to fitness for a particular use or purpose, and does not make any representation that these garments will protect end-users from injury. INTERNATIONAL ENVIROGUARD DOES NOT ASSUME ANY LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION OR ITS PERSONAL PROTECTIVE PRODUCTS AND GARMENTS.