

iMIS Food - Physical Hazards Table

Component	Origin	Characteristics	Severity	Control	Prevention
Glass	Raw materials (agricultural, horticultural), packaging materials (jars, bottles), light fixtures, utensils, gauge covers, thermometers.	Sharp, brittle, transparent or colored, various sizes.	Medium to High. Can cause cuts, internal bleeding, dental damage. Small fragments may pose a choking hazard. Consumer aversion, brand damage.	Visual inspection of raw materials and finished products, glass breakage policies, sieves, X-ray inspection, metal detection (for some glass types with metallic content).	Use alternatives to glass where possible (e.g., plastic). Protective coverings for lights. Regular inspection of glass containers. Staff training on handling glass. Keep glass out of production areas.
Metal	Machinery (blades, sieves, wires, nuts, bolts), agricultural sources (wire, bullets), packaging (staples, cans), staff (jewelry, pens), cleaning equipment (scourers).	Sharp, hard, various shapes and sizes (fragments, shavings, wires).	Medium to High. Can cause cuts, choking, internal injury, dental damage. Magnetic or non-magnetic.	Metal detectors, X-ray inspection, magnets, sieves, visual inspection. Regular maintenance of equipment.	Proper equipment maintenance and pre-start up checks. Staff training on foreign object control and personal hygiene (no jewelry). Controlled use of staples and metal clips.
Wood	Pallets, crates, boxes, field debris, building materials, utensils, cleaning equipment (brushes).	Splintery, various sizes, can be hard or soft.	Low to Medium. Can cause choking, cuts, mouth or throat irritation. May harbor microorganisms.	Visual inspection, sieves, X-ray inspection (density dependent), wood control programs.	Use food-grade plastic or metal pallets/containers. Regular inspection and maintenance of wooden structures and equipment. Avoid using wood in direct food contact areas if possible.
Stones/Minerals	Agricultural raw materials (fields, soil), building materials (concrete, pebbles), processing aids.	Hard, various shapes and sizes, abrasive.	Medium. Can cause choking, dental damage, internal injury.	Stone traps, de-stoners, flotation washers, sieves, X-ray inspection, visual inspection.	Sourcing from approved suppliers with good agricultural practices. Effective cleaning of raw materials. Building maintenance to prevent crumbling concrete.
Plastic	Packaging materials (films, fragments, ties), equipment (worn parts, utensils), staff (pens, PPE fragments), raw material containers.	Flexible or rigid, various shapes, sizes, and colors. Can be sharp if broken.	Low to Medium. Can cause choking, internal blockage. May leach chemicals.	Visual inspection, sieves, X-ray inspection (density dependent), color sorting equipment.	Use detectable plastics where possible. Proper maintenance of plastic equipment. Control of packaging materials. Staff training on handling plastics.
Personal Effects	Staff (jewelry, buttons, pens, hair clips, false nails, band-aids).	Various materials (metal, plastic, fabric, glass), shapes, and sizes.	Low to Medium. Can cause choking, cuts, or internal injury. May introduce microbiological contamination.	Strict personal hygiene policies (e.g., no jewelry, secure band-aids), metal detectors, X-ray inspection.	Staff training and enforcement of GMPs, including policies on jewelry, hair coverings, and personal items in production areas. Use of detectable band-aids.
Pests/Insects	Fields, storage areas, processing environment, raw materials.	Whole insects, insect fragments, larvae, eggs, rodent droppings, hair.	Low to High. Can cause disgust, allergic reactions, transmit pathogens, introduce filth.	Pest control programs (traps, bait stations), sieves, filters, visual inspection, insect light traps, fumigation (where appropriate).	Integrated Pest Management (IPM) program, proper sanitation, sealing of building entry points, inspection of incoming raw materials, good storage practices.
Bone Fragments	Meat, poultry, fish raw materials.	Hard, sharp, brittle, various sizes.	Medium. Can cause choking, cuts in mouth/throat, internal injury.	X-ray inspection, visual inspection, bone removal systems (e.g., grinders with bone eliminators), sieves.	Sourcing from reputable suppliers with good deboning practices. Careful trimming and inspection of meat/fish. Staff training in handling and processing.
Unwanted Natural Components	Raw agricultural materials (e.g., fruit pits/stones, seeds, stems, shells from nuts or seafood, hard pieces of produce).	Hard, potentially sharp, or cause unpleasant texture; varies in size and density depending on the source.	Low to Medium. Can cause choking (especially in children or elderly), dental damage, or discomfort. Reduces product quality and acceptability.	Sorting (manual, mechanical, optical), sieving, destoning/pitting machinery, shelling equipment, X-ray inspection (for denser items like pits), filtration, specific gravity separators.	Sourcing high-quality raw materials with fewer defects. Using specific varieties (e.g., "seedless"). Effective primary processing techniques (e.g., efficient pitting, shelling, destemming). Supplier controls.