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| **Chemical Hazards** | | | **Associated Foods** | **Control measures** |
| **Naturally Occurring:** | Scombrotoxin | | Primarily associated with tuna fish, mahi-mahi, blue fish, anchovies bonito, mackerel; Also found in cheese | Check temperatures at receiving; store at proper cold holding temperatures; buyer specifications: obtain verification from supplier that product has not been temperature abused prior to arrival in facility. |
| Ciguatoxin | | Reef fin fish from extreme SE US, Hawaii, and tropical areas; barracuda, jacks, king mackerel, large groupers, and snappers | Ensure fin fish have not been caught:   * + Purchase fish from approved sources.   + Fish should not be harvested from an area that is subject to an adverse advisory. |
| Tetrodoxin | | Puffer fish (Fugu; Blowfish) | Do not consume these fish. |
| Mycotoxins | Aflatoxin | Corn and corn products, peanuts and peanut products, cottonseed, milk, and tree nuts such as Brazil nuts, pecans, pistachio nuts, and walnuts. Other grains and nuts are susceptible but less prone to contamination. | Check condition at receiving; do not use moldy or decomposed food. |
| Patulin | Apple juice products | Buyer Specification: obtain verification from supplier or avoid the use of rotten apples in juice manufacturing. |

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| **Chemical Hazards** | | | **Associated Foods** | **Control measures** |
| **Naturally Occurring:** | Toxic mushroom species | | Numerous varieties of wild mushrooms | Do not eat unknown varieties or mushrooms from unapproved source. |
| Shellfish toxins | Paralytic shellfish poisoning (PSP) | Molluscan shellfish from NE and NW coastal regions; mackerel, viscera of lobsters and Dungeness, tanner, and red rock crabs | Ensure molluscan shellfish are:   * from an approved source; and * properly tagged and labeled. |
| Diarrhetic shellfish poisoning (DSP) | Molluscan shellfish in Japan, western Europe, Chile, NZ, eastern Canada |
| Neurotoxin shellfish poisoning (NSP) | Molluscan shellfish from Gulf of Mexico |
| Amnesic shellfish poisoning (ASP) | Molluscan shellfish from NE and NW coasts of NA; viscera of Dungeness, tanner, red rock crabs and anchovies. |
| Pyrrolizidine alkaloids | | Plants food containing these alkaloids. Most commonly found in members of the Borginaceae, Compositae, and Leguminosae families. | Do not consume food or medicinals contaminated with these alkaloids. |
| Phtyohaemmagglutinin | | Raw red kidney beans (Undercooked beans may be more toxic than raw beans) | Soak in water for at least 5 hours. Pour away the water. Boil briskly in fresh water, with occasional stirring, for at least 10 minutes. |

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| **Chemical Hazards** | | **Associated Foods** | **Control measures** |
| **Added Chemicals:** | Environmental contaminants: Pesticides, fungicides, fertilizers, insecticides, antibiotics, growth hormones | Any food may become contaminated. | Follow label instructions for use of environmental chemicals. Soil or water analysis may be used to verify safety. |
| PCBs | Fish | Comply with fish advisories. |
| Prohibited substances (21 CFR 189) | Numerous substances are prohibited from use in human food; no substance may be used in human food unless it meets all applicable requirements of the FD&C Act. | Do not use chemical substances that are not approved for use in human food. |
| Toxic elements/compounds Mercury | Fish exposed to organic mercury: shark, tilefish, king mackerel and swordfish. Grains treated with mercury based fungicides | Pregnant women/women of childbearing age/nursing mothers, and young children should not eat shark, swordfish, king mackerel or tilefish because they contain high levels of mercury.  Do not use mercury containing fungicides on grains or animals. |
| Copper | High acid foods and beverages | Do not store high acid foods in copper utensils; use backflow prevention device on beverage vending machines. |
| Lead | High acid food and beverages | Do not use vessels containing lead. |

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| **Chemical Hazards** | | **Associated Foods** | **Control measures** |
| **Added Chemicals:** | Preservatives and Food Additives:   * Sulfiting agents (sulfur dioxide, sodium and potassium bisulfite, sodium and potassium metabisulfite) * Nitrites/nitrates * Niacin | Fresh fruits and Vegetables Shrimp Lobster Wine  Cured meats, fish, any food exposed to accidental contamination, spinach  Meat and other foods to which sodium nicotinate is added | Sulfiting agents added to a product in a processing plant must be declared on labeling.  Do not use on raw produce in food establishments.  Do not use more than the prescribed amount of curing compound according to labeling instructions. Sodium nicotinate (niacin) is not currently approved for use in meat or poultry with or without nitrates or nitrates. |
| Flavor enhancers Monosodium glutamate (MSG) | Asian or Latin American food | Avoid using excessive amounts |
| Chemicals used in retail establishments (e.g., lubricants, cleaners, sanitizers, cleaning compounds, and paints | Any food could become contaminated | Address through SOPs for proper labeling, storage, handling, and use of chemicals; retain Material Safety Data Sheets for all chemicals. |
| Allergens | Foods containing or contacted by:   * Milk * Egg * Fish * Crustacean shellfish * Tree nuts * Wheat * Peanuts * Soybeans | Use a rigorous sanitation regime to prevent cross contact between allergenic and non-allergenic ingredients. |