Fact bite #55

Food processing equipment

Food Packaging Forum

Most foods we eat, especially ultra-processed ones, have been in prolonged and repeated contact with food processing equipment – from being chopped using stainless steel pipes to flowing through plastic tubing (and often more).

Food Packaging Forum

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Under the mechanical, thermal, and chemical stresses of modern production, chemicals from that equipment can migrate into the food. Some of these can be hazardous chemicals of concern for public health.

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Food processing equipment

While chemical migration from food packaging has received a lot of attention, the potential for chemical migration from food processing has been largely overlooked despite that it can be even higher. This is because contact with food often occurs under conditions that increase chemical migration, such as high temperatures or pressure.

Examples of common food processing steps include milling, crushing, centrifuging, mixing, extruding, or molding. Each uses different machines under different conditions. Common ways chemicals can migrate into the food include direct leaching under aggressive conditions (e.g. high temperature or low pH), microplastic generation from mechanical abrasion and wear, or from cleaning and sanitizer residue.