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# FOOD *in* CANADA

Canada's food & beverage processing magazine

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Molded-Oil grease is suitable for corrosive and dust-contaminated environments, and offers a consistent supply of lubricant within the rolling element surface without requiring re-greasing, also preventing leakage from the bearings — perfect for facilities requiring high levels of hygiene and sanitation.

NSK says that engineers should look for suppliers that manufacture bearing units that are sealed-for-life with lubrication to ensure no further reapplication of grease is needed.

SKF's food line Y-bearing technology uses the SRF multiple seal design to keep cleaning materials out, while keeping lubricant in.

NTN Americas offers its Sentinel Series of stainless steel bearings and bearings units with food-grade solid lube covers, providing maintenance-free, wash-down-resistant product lines.

The line products are manufactured with 100 per cent stainless steel inserts and ball bearings filled with H1 food-grade solid lube that helps prevent lubricant washout. The lube is maintained within a porous solid material similar to a sponge, releasing the grease to lubricate components as it rotates.

NTN also offers an Ultra-Class Sentinel line for food-grade equipment options that do not require washdown.

Cortec Corporation recently released a new bio-based general-purpose lubricant — EcoLine ELP (extreme lubricant penetrant). The product is a high-performance biodegradable soy-based lubricant and penetrant manufactured from natural seed oils and select additives that provide excellent performance with low environmental impact.

Equally important for anyone purchasing equipment is determining where it will be used: preparation area; used within a heat or cold application zone, or within post-processing and packaging.

Within any preparation area, for example, excessive moisture and contamination can be troublesome, and along with caustic cleaning agents et al, bearing seals can crack and cause corrosion issues.

Food engineers look for bearings that can withstand hot and cold temperatures, water and chemicals without corroding or allowing contamination to take place. They also want bearings that require relatively zero maintenance.



photo: Courtesy of Cortec Corporation

Boca Bearing Company — a one-stop shop supplier of bearings, lubricants and more from prototyping to production — told *Food in Canada* magazine that ceramic bearings are a good option as there is no corrosion or leaching of materials.

As well, the ceramic bearings are considered by some to be a better choice than stainless steel options in hot and cold applications, as they do not expand or contract with temperature changes.

NSK offers its Aqua-Bearings, a self-lubricating fluoro-resin that provides five times the corrosion resistance of conventional resin bearings in strong acid environments.

A very recent discovery from engineers at the U.S.-based Sandia National Laboratories revolves around the re-examination of the platinum-gold alloy, made up of 90 per cent platinum, which has about 100 times more wear-resistance than high-strength steel.

While the alloy isn't a new creation, scientists had ignored it in the past, figuring these two "weaker" elements would lack combined durability. However, when combined as an alloy and allowed to react under heat, it resists damage from friction for a long time, putting it in the same class as diamonds. Plus, the alloy seems to come with its own built-in lubrication.

While not being used within the bearings industry just yet, possibilities do exist — if the cost of materials isn't a debilitating factor.

Discussing your company's unique processing and packaging needs with an engineer is the best way to find the solutions that fit. Depending upon the needs of the food and beverage processor, asking the right questions and presenting all of the available data to a machine manufacturer before purchase, can help prevent expensive headaches later on.

Most bearing manufacturers are more than willing to visit your facility to measure and monitor equipment efficiency and discuss options. ●