The perils of ignoring lubrication in the food industry

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*Aaron Crichton**

If a food manufacturer was to ask me what the greatest risk that lubricants could have on my business, my answer would be the potential for food and beverage to reach the market place containing undetected non-food-grade lubricant. While there are other negative impacts lubricant can pose on a food manufacturer this is clearly the most substantial and potentially damaging.

What role do lubricants play?

Every food plant requires lubrication. Various greases and oils lubricate processing equipment, allowing moving parts to function as designed and hopefully ensuring thousands of hours of trouble-free operation. However, unique to food manufacturer and other clean industries are the potentially damaging consequences from lubricants inadvertently finding their way into food and beverages which reach the marketplace and an unsuspecting consumer.

Costly consequences

Now, in all fairness, lubricant-related food recalls are quite rare and I suggest there are very few in the food industry who could remember the last time a food manufacturer fell victim to a non-food-grade lubricant contamination or recalled their product from the marketplace. However, it has happened and to some of the largest food and beverage companies on the planet. Below are some documented case histories where the unforeseeable has occurred.

Sliced turkey meat:

A US firm recalled 36,000 kg of sliced turkey inadvertently exposed to a non-food-grade lubricant during processing. The problem was discovered by the consumer complaint analysis of complaints and a follow-up investigation where consumers complained of off-colour, off-odour turkey while some consumers reported intestinal discomfort.

Source: www.fsis.usda.gov/OA/recalls/rnrfiles/rnr038-

Smoked boneless hams:

A US firm recalled 222,658 kg of smoked ham after some were contaminated with gear lubricants. Several customers reported a "bad taste" and "burning" in the throat for up to three hours after eating the ham.

Source: www.fsis.usda.gov/OA/recalls/rnrfiles/rnr008-

Cans of baby food:

A mother in the UK alerted the environmental officer, claiming that a tin of baby food "smelled of tar". Upon further investigation it was found that the tin contained mineral-oil lubricant possibly from a machine during the manufacturing process or the can-manufacturing process.

Source: *The Sentinel*, 1 September 2000.

Now I can only speculate as to how non-food-grade lubricants came to be used in areas that would appear to be critical control points where food-grade lubricants should have been used. Did these companies have any policy on lubrication usage, had a risk assessment been conducted, or was it simply human error? I guess we may never know.

An interesting point I like to consider is: would the alarm have been raised by the consumer if food-grade lubricants had been used, even though our undeniable objective is to ensure that no lubricants come in contact with our food product?

How often could this happen?

Recalls caused by lubricant contamination are quite rare; however I have strong reason to believe that minor instances of contamination go on unnoticed where food manufacturers have not undertaken due diligence and identified their lubricant hazards. Simply put: how do you detect the risk if you don't identify the hazard?

Is my business at risk?

Depending on the type of manufacturing process, some companies are more exposed to the potential of lubricants contamination than others. Ask yourself the question: has our business adequately identified the locations within our plant where food contact can occur and, if so, can we detect an incident where lubricant comes into contact with food before it reaches the market place? If the answer is 'no' then your business may have some risk, however minor, of an undetected lubricant contamination.

Key indicators

From personal experience, I have found the companies I would most consider at risk from lubricant contamination often display several defining characteristics. These characteristics are my key indicators which I use when visiting food manufacturers to determine the risk that lubricants may pose to their business and the required solutions to address these risks.

- **Policy** - The absence of a company policy for lubrication - determining the type of lubricants accepted for site use.
- **Hazard analysis** - The absence of a documented lubricant hazard analysis within the food safety program.
- **Documentation** - A food manufacturer's inability to provide sufficient documentation to determine where lubricants are required for use.
- **Management** - Difficulty managing lubricant usage and the introduction of non-approved lubricants.
- **Housekeeping** - Poor lubricants storage and handling practices, suggesting that lubricant contamination, misapplication and operator confusion is a possible occurrence.

Now I don't suggest that food manufacturers who have not addressed my key indicators are unknowingly contaminating their product, however, they may be considerably more exposed to the risks of lubrication contamination if they haven't.

The underlying message is that some of the largest companies on the planet have been the victim of an undetected non-food-grade lubricant contamination reaching the consumer. Dedicate time to your companies' lubrication requirements, ensuring the hazards are identified and monitored before the undetectable happens.

What can you do?

Develop a comprehensive report containing your plant's total lubrication requirements with particular focus on the obvious lubricant applications which are above or adjacent to food production where spills, leaks or human error may result in food contact. This information will determine your policy which is, basically: will I use only food-grade lubricants or a combination of food-grade and non-food grade?

Technological advances of food grade lubricants is such that they can be used in almost every application without compromising machine life or production so total food-grade implementation within food processing areas should seriously be considered.

Your report will also determine a finite number of lubricants required for your plant to operate efficiently which, in addition, will allow you to develop the most appropriate lubricants' storage facilities to effectively manage the use and transportation of lubricants within your processing facilities.

Document and communicate your lubricants policy ensuring all staff are aware of safe manufacturing procedures.

Aaron Crichton is Managing Director at Superior Lubricants Pty Ltd (www.superiorlubricants.com.au).

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