

Reduce Downtime and Maintain Food Safety



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Why a plant should consider switching from Aluminum Complex Grease to Overbased Calcium Sulfonate.

Food processing plants are mandating that only H1 lubricants are used for the lubrication of equipment as part of the Hazard Analysis and Critical Control Point (HACCP) plan. H1 lubricants have been reviewed by NSF and are approved for incidental food contact. Most H1 lubricants are oils, but like in any industry, there are also areas where the usage of grease is required. The most common H1 grease in the food industry is Aluminum Complex grease, which often does not meet the stringent requirements of the equipment. There is a need for higher performance level greases, without compromising safety; as a result H1 Overbased Calcium Sulfonate grease was introduced to the food industry. OBCS outperforms the old Aluminum Complex technology and is currently the highest performing H1 grease on the market.

HOW? LESS DOWNTIME FEWER FAILURES

Over Based Calcium Sulfonate (OBCS) grease lasts longer in machinery and therefore reduces downtime reapplication. OBCS also does not cake and reduces downtime by minimizing preventive maintenance with clean outs. The extended life you will see with OBCS lubricants means longer relubrication intervals, less maintenance, and improved cleanliness. The overall superior stability of OBCS lubricants also result in less downtime and fewer failures due to lubricant carbonization, evaporation, or other deterioration. Water washout and steam cleaning will not affect OBCS lubricants. In addition, because OBCS lubricants can be used in many applications and lasts so long, total lubricant inventory can be reduced, as well as the need for frequent movement of drums around your facility. The combination of all of these factors translates to long-term cost savings for your business. For an example... on sterilization equipment relubrication intervals are doubled with an OBCS and re-lubricating less often saving downtime and money.

Overbased Calcium Sulfonate (OBCS) vs. Aluminum Complex (AC)

	Water Resistance	Temperature Resistance	Corrosion Protection	Mechanical Stability	Oxidation Stability
Overbased Calcium Sulfonate	●●●	●●●	●●●	●●●	●●●
Aluminum Complex	●●	●●	●●	●	●●

Overbased Calcium sulfonate greases are formed through conversion of amorphous calcium carbonate into calcite, thus creating a Non-Newtonian fluid with excellent Extreme Pressure (EP). How is EP relevant to the Food Industry properties? This EP phenomenon is provided by the Calcite platelets, which bond horizontally to the metal surface and enhance the EP characteristics. The resulting OBCS grease has good EP and AW (Anti-wear) properties, mechanical stability, water resistance, corrosion protection, high dropping point, pumpability, oxidation stability and oil separation.

OBCS brings the following advantages:

- EP (Extreme Pressure) and AW (Anti-wear) are an intricate part of the thickener, other grease thickeners require EP and AW additives, which not only complicate the formulation but can compromise performance criteria in other areas such as corrosion and oxidation stability.
- Superior corrosion resistance from the sulfonate micelles of the thickener. The grease can be used in corrosive and aggressive environments, the protection is increased by a factor of four compared to Aluminum Complex.
- The mechanical stability is unsurpassed, even in the presence of water and at high temperature. If 50% of water is mixed into the grease, no major loss of consistency is observed.
- Low oil separation, reducing chances of food contamination.
- The oxidation resistance is very good. This results increased bearing life and longer relubrication intervals.
- Good performance at low temperature – for refrigerated or freezer applications.
- The OBCS can be used in centralized delivery systems because it does not harden.
- Can be used in water immersed applications, since modifications can be made to have a specific gravity greater than one. As a result, the grease stays in place and will not float on top of the water.
- Resistance to inconsistency during long periods of inactivity at elevated temperatures thus increasing the coefficient of friction, no age hardening occurs because of elevated temperature which is a major flaw of Aluminum complex greases.
- The thickener provides the major performance characteristics, no further additives are required. Improves the safety and reproducibility of the product.