

PRODUCT STEWARDSHIP SUMMARY

GREASE ADDITIVES

Introduction

Afton has a range of multipurpose industrial grease additive packages that provide differentiation and defined performance. Our Grease Additives are designed to provide excellent corrosion protection and antioxidant performance, along with extreme pressure (EP) and anti-wear protection. They are formulated to resist the degradation of critical grease properties such as dropping points and stability in the presence of water.

Uses and Advantages

Greases are used to lubricate components where conventional lubricants are unsuitable or impractical, such as plain bearings, roller bearings, gears, and couplings. The advantages of using Grease Additives in these lubricating greases are:

- Excellent Extreme Pressure and load-carrying properties
- Long-term rust and wear protection
- Maintains thickener integrity
- High thermal and oxidative stability

Health Effects

Grease Additives can cause adverse health effects through skin contact or inhalation from breathing sprays, mist, fumes, or aerosols. Health effects vary depending on the specific components in the additive package but may include irritation or corrosion of eyes, skin, and respiratory tract. A few additive packages contain components that may cause skin sensitization or that may cause reproductive or developmental effects following exposure to high doses or for extended periods of time. A small number of packages can contain components that may be carcinogenic due to the impurities present, or that may cause organ toxicity after prolonged exposure to high doses, with the primary effects occurring to the liver, blood, and kidneys in animals. However, the majority of Grease Additive packages are not classified for skin sensitization, reproduction/development, carcinogenicity or for causing organ effects after chronic exposure. These additive packages are not expected to be mutagenic.

Environmental Effects

Because of the long-chain alkyl amine, alkyl phenol, and Zinc Dialkyl Dithiophosphates (ZDDP) present in certain additives, some are considered toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Some may contain components that may be persistent in the environment. However, they are not expected to be PBT (Persistent, Bioaccumulative and Toxic), or vPvB (very Persistent very Bioaccumulative).

Exposure

For industrial workers, the most common route of exposure is via skin contact during manufacturing and processing. The extent of exposure can depend on the type of manufacturing system (open or enclosed), adequacy of engineering controls, material handling practices, and use of personal protective equipment. Handling at elevated temperatures or generating vapors or mists can increase inhalation exposure which is otherwise not considered a significant route of exposure.

For professional use, the primary route of exposure is via skin contact with the finished grease during maintenance and use. Exposure to the additives is less in the finished grease due to their reduced concentration. Many greases are either not classified as hazardous according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) or have relatively low hazard classifications compared to the additive package.

Risk Management

Afton's grease additives are mainly targeted at the commercial sector. These are generally used as finished greases. The health and environmental risks of these products can vary depending on the product as well as the conditions encountered during their use. Information on the safe handling of these products is provided to users through the safety data sheets. Appropriate engineering, administrative controls (work practices), and personal protective equipment are recommended to control exposures during manufacture and use.

Conclusion

Grease manufacturing and application combine chemistry, physics, rheology, and tribology into a product that is a lubricant, a pump, and a seal from contaminants, all in one. Afton's environmentally responsible chemistry means that modern greases can confidently handle the latest requirements for EP, wear protection, corrosion inhibition, and extended grease life without losing thickener compatibility or cost-effectiveness. Afton is committed to providing its customers with the information they need to responsibly manage any safety, health, and environmental risks associated with the intended use of Afton products.

For additional information, contact us at:

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