

PRODUCT STEWARDSHIP SUMMARY

GEAR OIL & MANUAL TRANSMISSION FLUID ADDITIVES**Introduction**

Afton Chemical Corporation's axle and manual transmission additives are designed to formulate fluids that meet the needs of the hardware used in modern commercial and passenger vehicles. Our gear oils, used extensively in both factory fill and service fill applications, are designed to meet the very latest OEM specifications. They are formulated to meet specific needs, ranging from improved fuel economy and increased drain intervals to increased power density and cost-effective multifunctional solutions.

Uses and Advantages

Afton's additives protect the gears in axles and transmissions against extreme pressure and wear under severely loaded operating conditions. Sludge and varnish formation are reduced to keep the moving parts clean in the presence of elevated temperatures and during severe, long-term operation. The additives are also designed to eliminate rust, corrosion, and the formation of deposits that may compromise the performance of the axle or transmission. Our products help to protect parts for longevity and maximize up-time on the road.

- Gear protection under extreme pressure
- Excellent antiwear performance
- Optimized friction characteristics required for shifting clutches and synchronizers, and limited slip differentials
- Cooling and heat dispersion
- Prevents deposit formation and breakdown from heat and oxidation
- Bearing and seals protection
- Pitting protection
- Anti-corrosion / rust inhibition
- Good foam suppression

Health Effects

Gear oil additive packages can cause adverse health effects through skin contact or inhalation from breathing vapors or mists. Health effects vary depending on the specific components in the additive but primarily include irritation, skin sensitization, and skin and eye corrosion. Some of the additive packages contain components that cause reproductive or developmental effects following exposure to high doses or for extended periods of time. A few additive packages contain components that may be harmful after short-term exposure to high doses; or that may cause organ toxicity after prolonged exposure to high doses, with the primary effects occurring in the gastrointestinal tract, immune system, and liver in animals. A small number of additive packages are classified as carcinogenic due to impurities present in certain components. However, the majority of additive packages are not classified for carcinogenicity. These additive packages are not expected to be mutagenic.

Environmental Effects

Because of the long-chain alkyl amines present in some of these additives, many are considered toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Some of Afton's gear additives 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 and consumer use, the primary route of exposure is via skin contact with finished oils, which can occur during fluid changes or when adding oil to vehicles. Inhalation is not generally a concern for professional or consumer use. Exposure to the additives is less in the finished lubricant due to their reduced concentration. Many gear oils 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

Gear oil and manual transmission additives are formulated to meet various performance requirements. 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

Afton's additives deliver superior performance across driveline applications by reducing end-user costs, enhancing reliability, and increasing durability of their gear oil additives. 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:

Afton Chemical Corporation • 500 Spring Street • Richmond VA 23219 • 804-788-5800



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