

Product Safety Summary

Esterex™ Adipate Esters

This Product Safety Summary document is a high-level summary intended to provide the general public with an overview of product safety information on this chemical substance. It is not intended to provide emergency response, medical or treatment information, or to provide a discussion of all safety and health information. This document is not intended to replace the (Material) Safety Data Sheet. Warnings and handling precautions provided below are not intended to replace or supersede manufacturers' instructions and warning for their consumer products which may contain this chemical substance.

1. Chemical Identity

Esterex™ A32

Esterex™ A34

Esterex™ A41

Esterex™ A51

Esterex™ adipate esters are synthetic lubricant base-stocks produced from the reaction of an alcohols with acids.

CAS No: Various

Chemical Name: Adipate Esters

2. Product Uses

Esterex™ adipate esters are used in synthetic lubricant formulations either as a base-stocks or as base-stock modifiers. Esterex™ esters are sold to lubricant manufacturers that provide a variety of industrial and consumer products including synthetic and semi-synthetic lubricants. Applications include:

- Automobile and diesel engine lubricants
- Automatic transmission fluids
- Automotive gear lubricants
- Industrial fluids such as hydraulic fluids, gear and bearing lubricants
- Greases for automotive and industrial applications.

Esterex™ esters are not sold directly to the public for general consumer uses.

3. Physical / Chemical Properties

Esterex™ adipate esters are non-hazardous materials. These materials are classified as a static accumulators. Although these materials have relatively low vapor pressures, they should be handled only with adequate ventilation and in areas where ignition sources have been removed (e.g. open flames, static electricity sources, unprotected light switches). The flash points for these substances are greater than 350°F / 177°C.

4. Health Information

Esterex™ esters are generally recognized to have low acute toxicity if ingested, inhaled or after skin contact. These materials are expected to present a low risk for chronic toxicity. Excessive exposure can cause eye, skin or lung irritation. If prolonged or repeated skin contact is likely, the use of chemical

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resistant gloves is recommended. Esterex™ esters are not regarded as mutagens or carcinogens, and there is low concern for reproductive, developmental, or nervous system toxic effects.

5. Additional Hazard Information

In the unlikely event that these products are injected into or under the skin, or into any part of the body, the individual should be evaluated immediately by a physician as a surgical emergency regardless of the appearance of the wound or its size. When used in high pressure or hydraulic applications, the initial symptoms from high pressure injection may be minimal or absent. Early surgical treatment, i.e., within the first few hours, may significantly reduce the ultimate extent of injury. Wash contact areas with soap and water.

6. Food Contact Regulated Uses

These products are not claimed as compliant for food contact applications.

7. Environmental Information

Esterex™ adipate esters are expected to be inherently biodegradable and will not persist in the environment. These materials are not expected to cause short-term toxicity to fish or other aquatic organisms because of its low solubility in water. Long-term effects (chronic aquatic toxicity) are not expected because of low toxicity and biodegradation that results in a low potential for chronic exposure to aquatic organisms (following, for example, an accidental spill).

8. Exposure Potential

Based on the uses for Esterex™ adipate esters, the public could be exposed through:

- **Workplace exposure** – This refers to potential exposure to in a manufacturing facility or through evaporation in various industrial applications. Generally, exposure of personnel in manufacturing facilities is relatively low because the process, storage and handling operations are enclosed.
- **Consumer use of products containing Esterex™ adipate esters** – These chemicals are not sold directly to the public for general consumer uses. Exposure of the majority of consumers is not expected. If exposure does occur, it is likely to be infrequent and of short duration. The best way to prevent exposure to vapors is to work in well-ventilated areas.
- **Environmental releases** – As a chemical manufacturer, we are committed to operating in an environmentally responsible manner everywhere we do business. Our efforts are guided by in-depth scientific understanding of the environmental impact of our operations, as well as by the social and economic needs of the communities in which we operate. Industrial spills or releases are rare; however a spill may pose a significant flammability issue. Our operational improvement targets and plans are based on driving incidents with real environmental impact to zero and delivering superior environmental performance.

9. Manufacture of Product

- **Process** – Synthesized by esterifying adipic acid with C8-C13 branched alcohols in the presence of a catalyst.

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10. Risk Management

When using Esterex™ esters or products which contain Esterex™ esters, ensure that there is adequate ventilation. Always use chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles. Do not eat, drink, or smoke where Esterex™ esters are handled, processed, or stored. Wash hands and skin following contact. If Esterex™ esters gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention.

11. Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use and/or disposal of Esterex™ esters. These regulations may vary by city, state, country or geographic region. Additional helpful information may be found by consulting the relevant Material Safety Data Sheet at:

<http://www.msds.exxonmobil.com/psims/psims.aspx?brand=xomcc>

12. Conclusion Statements

Esterex™ adipate esters:

- Are low in toxicity.
- Do not cause adverse health or environmental effects at levels typically found in the workplace or environment.
- Should only be used with good ventilation; avoiding all ignition sources.

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