

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

SAFETY DATA SHEET



ESTEREX™ NP451

Section 1. Identification

Product name	: ESTEREX™ NP451
Product description	: synthetic ester
<u>Relevant identified uses of the substance or mixture and uses advised against</u>	
Identified uses	: Aviation lubricating oil, Base oil
Uses advised against	: This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above.
Supplier	: EXXONMOBIL CHEMICAL SERVICES (SHANGHAI) CO., LTD Correspondence address: 1099 Zixing Road Minhang District SHANGHAI China
24 Hour Emergency Telephone	: (+86)0532-83889090 (NRCC)
Supplier General Contact	: (+86) 021-23515000
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Supplier	: ExxonMobil Chemical Asia Pacific (Regn. No. 52893724C) (A Division Of ExxonMobil Asia Pacific Pte Ltd - Regn. No. 196800312N) 1 HarbourFront Place #06-00 HarbourFront Tower One 098633 Singapore
Supplier General Contact	: +65 6885 8000
SDS Internet Address	: www.sds.exxonmobil.com

Section 2. Hazards identification

Classification of the substance or mixture is in accordance with national standard GB30000 series of Specification/Rules for classification and labeling of chemicals	
<u>Emergency overview</u>	
Physical state	: Liquid.
Colour	: Yellow
Odour	: Mild
Readily biodegradable	
Classification of the substance or mixture	: Not classified.
Physical and chemical hazards	: No known significant effects or critical hazards.
Health hazards	: No known significant effects or critical hazards.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 2. Hazards identification

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection.
Ingestion	: No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Environmental hazards	: No known significant effects or critical hazards.
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Contains	: ESTEREX NP451 <C>
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Other hazards which do not result in classification	: None known.
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Nota	: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.
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Section 3. Composition/information on ingredients

Substance/mixture	: Substance
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There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

First aid

Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.
Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 4. First-aid measures

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Eye contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.
Skin contact : Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection.
Eye contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.
Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : Incomplete combustion products, Oxides of carbon, Smoke, Fume

Special protective actions for fire-fighters : Use standard firefighting procedures and consider the hazards of other involved materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Assure an extended cooling down period to prevent re-ignition. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 6. Accidental release measures

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Confine the spill immediately with booms. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants. Warn other shipping. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

- Precautionary measures to prevent the occurrence of secondary disasters** : Prevent entry into sewers, water courses, basements or confined areas.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Section 7. Handling and storage

Precautions for safe handling

- Precautions for operating** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Static Accumulator** : This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 7. Handling and storage

Conditions for safe storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 9. Physical and chemical properties

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance and physical state

Physical state	: Liquid.
Colour	: Yellow
Odour	: Mild
Odour threshold	: Not available.
pH	: Not applicable.
Melting point/freezing point	: Not available.
Boiling point or initial boiling point and boiling range	: >300°C (>572°F) [In-house method ,]
Flash point	: Closed cup: 230°C (446°F) [ASTM D-93]
Evaporation rate	: Not available.
Flammability	: Ignitable
Lower and upper explosion limit/flammability limit	: Not available.
Vapour pressure	: 0.009 mm Hg [20 °C] [In-house method ,]
Relative vapour density	: >2 [Air = 1] [In-house method ,]
Relative density	: 0.99 [In-house method ,]
Solubility in water	: Negligible
Partition coefficient: n-octanol/water	: >6 [In-house method ,]
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: 5 cSt [100 °C]
Particle characteristics	
Median particle size	: Not applicable.
Pour point	: -57.22°C [In-house method ,]

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: High energy sources of ignition. Excessive heat.
Incompatible materials	: Strong oxidisers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
ESTEREX NP451 <C>	Rat - Oral - LD50 >2000 mg/kg Rat - Dermal - LD50 >2000 mg/kg Rat - Inhalation - LC50 Dusts and mists >5100 mg/m³ [4 hours]

Conclusion/Summary

Inhalation	: Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Dermal	: Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Oral	: Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 423

Irritation/Corrosion

Conclusion/Summary

Skin	: Negligible irritation to skin at ambient temperatures. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eyes	: May cause mild, short-lasting discomfort to eyes. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Respiratory	: Negligible hazard at ambient/normal handling temperatures. No end point data for material.

Respiratory or skin sensitization

Conclusion/Summary

Skin	: Not expected to be a skin sensitizer. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Respiratory	: Not expected to be a respiratory sensitizer. No end point data for material.

Germ Cell Mutagenicity

Conclusion/Summary

	: Not expected to be a germ cell mutagen. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 473 474 476
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Carcinogenicity

Conclusion/Summary

	: Not expected to cause cancer. No end point data for material.
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Reproductive toxicity

Conclusion/Summary

	: Not expected to be a reproductive toxicant. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414
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Specific target organ toxicity (single exposure)

Conclusion/Summary	: Not expected to cause organ damage from a single exposure. No end point data for material.
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Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Target organs
ESTEREX™ NP451	Not applicable.	-

Conclusion/Summary	: Not expected to cause organ damage from prolonged or repeated exposure. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 407
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Aspiration hazard

Product name

Date of revision

First issue date

ESTEREX™ NP451

29 July 2025

26 February 2024

SDS Number:

Version

1151988_13815558

3

Section 11. Toxicological information

Conclusion/Summary

: Not expected to be an aspiration hazard. Based on physico-chemical properties of the material. Data available.

Other information

Product

: Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

Section 12. Ecological information

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

Toxicity

Product/ingredient name	Result
ESTEREX NP451 <C>	Acute - NOEL Algae - <i>Alga</i> 100 mg/l - data for similar materials [72 hours] Acute - ErL0 Algae - <i>Alga</i> 100 mg/l - data for similar materials [72 hours] Acute - EL0 daphnia - <i>Daphnia magna</i> 100 mg/l - data for similar materials [48 hours] Acute - LL0 Fish - <i>Oncorhynchus mykiss</i> 1000 mg/l - data for similar materials [96 hours]

Conclusion/Summary

Acute toxicity

: Not expected to be harmful to aquatic organisms.

Chronic toxicity

: Not expected to demonstrate chronic toxicity to aquatic organisms

Persistence and degradability

Product/ingredient name	Result
ESTEREX NP451 <C>	Ready Biodegradability - Manometric Respirometry Test 83.58% [28 days]

Photolysis

: 0.815 day (s)

Biodegradability

: Material -- Expected to be readily biodegradable.

Hydrolysis

: Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis

: Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation

: Material -- Expected to degrade rapidly in air

Bioaccumulation/Accumulation

Not determined.

Mobility in soil

Soil/water partition coefficient

: 4 to 7 Koc Media:Multimedia (2 or more media)

Mobility

: Material -- Expected to partition to sediment and wastewater solids. Low solubility and floats and is expected to migrate from water to the land.

Date of issue/Date of revision

: 29 July 2025

Date of previous issue

: 29 July 2025

Version

: 3

8/11

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 12. Ecological information

Other ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14. Transport information

	JT/T617	IMDG	IATA
UN number	Not available.	Not regulated.	Not regulated.
UN proper shipping name	Not available.	-	-
Transport hazard class(es)	Not available.	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Incompatible materials : Strong oxidisers

Transport in bulk according to IMO instruments : Not available.

Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 15. Regulatory information

This material is not considered hazardous according to national standard GB30000 series of Specification/ Rules for classification and labeling of chemicals

Refer to below China regulations (if applicable):

The General Rules for preparation of precautionary label for Chemicals (GB 15258-2009)
Regulations on the Safe Management of Hazardous Chemicals
Measures for the Environmental Management Registration of New Chemical Substances

Inventory list

Australia inventory (AIC)	: All components are listed or exempted.
Canada inventory (DSL-NDSL)	: All components are listed or exempted.
China inventory (IECSC)	: All components are listed or exempted.
Japan inventory (CSCL)	: All components are listed or exempted.
Japan inventory (Industrial Safety and Health Act)	: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC)	: At least one component is not listed.
Philippines inventory (PICCS)	: All components are listed or exempted.
Korea inventory (KECI)	: All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI)	: All components are listed or exempted.
United States inventory (TSCA 8b)	: All components are active or exempted.

Section 16. Other information

History

Date of issue/Date of revision	: 29 July 2025
Date of previous issue	: 29 July 2025
Version	: 3
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Product code : 1151988_13815558

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Product name	ESTEREX™ NP451	SDS Number:	1151988_13815558
Date of revision	29 July 2025	Version	3
First issue date	26 February 2024		

Section 16. Other information

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