



SAFETY DATA SHEET

NESTE AXLE LS 80W-90

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	NESTE AXLE LS 80W-90
Product number	ID 18864
Internal identification	2147
Synonyms; trade names	Previous product name: Neste Hypoidi LS 80W-90, product number 2428, ID 10834.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Transmission oil.
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1.3. Details of the supplier of the safety data sheet

Supplier	Neste Markkinointi Oy Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND Tel. +358 10 45811 lubetec@neste.com
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1.4. Emergency telephone number

National emergency telephone number +358-9-471 977, +358-9-4711, Poison Information Centre

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Not Classified
Environmental hazards	Not Classified

2.2. Label elements

Hazard statements EUH208 Contains Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs. May produce an allergic reaction.

Supplemental label information EUH210 Safety data sheet available on request.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

NESTE AXLE LS 80W-90

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	5 - < 10 %
CAS number: 72623-87-1 EC number: 276-738-4 REACH registration number: 01-2119474889-13-XXXX	
Classification Asp. Tox. 1 - H304	
Reaction Products of alcohols, C14-18, C18 unsat., esterified with phosphorus pentoxide and salted with amines, C12-14,-tert-alkyl	1 - < 2,5 %
CAS number: — EC number: 939-591-3 REACH registration number: 01-2119978530-33-XXXX	
Classification Aquatic Chronic 3 - H412	
Distillates (petroleum), solvent-dewaxed heavy paraffinic	1 - < 2,5 %
CAS number: 64742-65-0 EC number: 265-169-7 REACH registration number: 01-2119471299-27-XXXX	
Classification Asp. Tox. 1 - H304	
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)	1 - < 2,5 %
CAS number: — EC number: 931-384-6 REACH registration number: 01-2119493620-38-XXXX	
Classification Acute Tox. 4 - H302 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	
Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs	0,1 - < 0,25 %
CAS number: — EC number: 939-460-0 REACH registration number: 01-2119971727-23-XXXX	
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1B - H317 Aquatic Chronic 3 - H412	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

NESTE AXLE LS 80W-90

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms are severe or persist.
Ingestion	Rinse mouth. Do not induce vomiting unless under the direction of medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms are severe or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

4.2. Most important symptoms and effects, both acute and delayed

General information	The product contains a small amount of sensitising substance. May cause an allergic skin reaction.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	None known.
Hazardous combustion products	Carbon monoxide (CO). Carbon dioxide (CO ₂). Hydrocarbons. Aldehydes. Hydrogen sulphide (H ₂ S). Nitrous gases (NO _x). Sulphurous gases (SO _x). Oxides of phosphorus.

5.3. Advice for firefighters

Protective actions during firefighting	Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water. Avoid discharge into drains.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear suitable protective clothing as protection against splashing or contamination.
For emergency responders	Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions

Environmental precautions	Stop leak if safe to do so. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with sand or other inert absorbent. Place waste in labelled, sealed containers. Dispose of waste via a licensed waste disposal contractor.
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NESTE AXLE LS 80W-90

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid inhalation of vapours and spray/mists. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. All handling should only take place in well-ventilated areas. Take precautionary measures against static discharges. For personal protection, see Section 8.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep containers upright. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Specific end use(s) Not known.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based (CAS: 72623-87-1)

DNEL Workers - Inhalation; Long term local effects: 5,4 mg/m³, (8h), Aerosol
Consumer - Inhalation; Long term local effects: 1,2 mg/m³, (24h), Aerosol
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
Available hazard data do not support the need for a DNEL to be established for other health effects.

8.2. Exposure controls

Appropriate engineering controls All handling should only take place in well-ventilated areas. Avoid the formation of mists. Provide eyewash station and safety shower.

Eye/face protection Tight-fitting safety glasses.

Hand protection Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. Butyl rubber.

Other skin and body protection Wear suitable protective clothing as protection against splashing or contamination.

Respiratory protection No specific recommendations.

Environmental exposure controls Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Liquid.

Colour Tan.

Odour Petroleum.

Odour threshold -

pH -

NESTE AXLE LS 80W-90

Melting point	< -24°C Pour point
Initial boiling point and range	-
Flash point	214°C Cleveland open cup.
Flammability (solid, gas)	-
Upper/lower flammability or explosive limits	-
Vapour pressure	-
Vapour density	-
Relative density	~ 0,889 @ 15°C
Solubility(ies)	Insoluble in water.
Partition coefficient	-
Auto-ignition temperature	-
Decomposition Temperature	-
Viscosity	~ 125 mm ² /s @ 40°C
Explosive properties	-
Oxidising properties	-

9.2. Other information

Other information Not known.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Materials to avoid Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Based on available data the classification criteria are not met.

Acute toxicity - oral

NESTE AXLE LS 80W-90

Notes (oral LD₅₀)	> 2000 mg/kg Calculation method.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Based on available data the classification criteria are not met. May cause eye and respiratory system irritation. May cause skin irritation.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Based on available data the classification criteria are not met.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	The product contains a small amount of sensitising substance. Based on available data the classification criteria are not met.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vivo	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
<u>Toxicological information on ingredients.</u>	

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 5000 mg/kg, Oral, Rat (OECD 401)

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 5000 mg/kg, Dermal, Rabbit (OECD 402)

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 5,58 mg/l, Inhalation, Rat (OECD 403)

Distillates (petroleum), solvent-dewaxed heavy paraffinic

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 5000 mg/kg, Dermal, Rabbit

NESTE AXLE LS 80W-90

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

Acute toxicity - oral

Notes (oral LD ₅₀)	LD ₅₀ ~ 2000 mg/kg, Oral, Rat (OECD TG 401)
ATE oral (mg/kg)	500.0

SECTION 12: Ecological information

12.1. Toxicity

Toxicity The product is not expected to be hazardous to the environment. Based on available data the classification criteria are not met. Supplier's information.

Ecological information on ingredients.

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow)
NOEL, 96 hours: ≥ 100 mg/l,
WAF (OECD 203)

Acute toxicity - aquatic invertebrates EL50, 48 hours: > 10000 mg/l, Daphnia magna
NOEL, 48 - 96 hours: ≥ 10000 mg/l,
LL₅₀, 24 - 96 hours: > 10000 mg/l,
WAF (OECD 202)

Acute toxicity - aquatic plants NOEL, 72 hours: ≥ 100 mg/l, Pseudokirchneriella subcapitata
WAF (OECD 201)

Acute toxicity - microorganisms NOEL, 10 minutes: > 1,93 mg/l, Micro-organisms (wastewater sludge)
(DIN 38412, DIN38409)

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOELR, 14 days: >= 1000 mg/l, Oncorhynchus mykiss (Rainbow trout)

Chronic toxicity - aquatic invertebrates NOEL, 21 days: 10 mg/l, Daphnia magna
WAF (OECD 211)

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: ~ 24 mg/l, Oncorhynchus mykiss (Rainbow trout)
WAF (OECD TG 203)

Acute toxicity - aquatic invertebrates EL50, 48 hours: ~ 91,4 mg/l, Daphnia magna
WAF (OECD TG 202)

Acute toxicity - aquatic plants ErC50, 96 hours: 15 mg/l, Pseudokirchneriella subcapitata
(OECD TG 201)
NOEC, 96 hours: 3,3 mg/l, Pseudokirchneriella subcapitata
(OECD TG 201)

Chronic aquatic toxicity

NESTE AXLE LS 80W-90

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 0,12 mg/l, Daphnia magna WAF (OECD TG 211)

12.2. Persistence and degradability

Persistence and degradability No data available.

Biodegradation No data available.

Ecological information on ingredients.

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based

Persistence and degradability 2 - 4 %, 28d

Reaction Products of alcohols, C14-18, C18 unsat., esterified with phosphorus pentoxide and salted with amines, C12-14,-tert-alkyl

Biodegradation - Degradation 0 %: 28 days

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

Biodegradation Not readily biodegradable.
- Degradation 7,4 %: 28 days

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient -

Ecological information on ingredients.

Reaction Products of alcohols, C14-18, C18 unsat., esterified with phosphorus pentoxide and salted with amines, C12-14,-tert-alkyl

Partition coefficient log Pow: 8

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No data available.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Do not reuse empty containers.

SECTION 14: Transport information

NESTE AXLE LS 80W-90

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

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UN No. (ADR/RID) -

14.2. UN proper shipping name

Proper shipping name (ADR/RID) -

14.3. Transport hazard class(es)

ADR/RID class -

14.4. Packing group

ADR/RID packing group -

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Authorisations (Annex XIV Regulation 1907/2006) This product contains a substance that is included in the Candidate List of Substances of Very High Concern (SVHC) (Regulation Nr 1907/2006, REACH): Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs

15.2. Chemical safety assessment

No data available.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet ATE = Acute Toxicity Estimate
DNEL = Derived No-Effect Level
NOEL = No Observed Effect Level
WAF = Water Accommodated Fraction

NESTE AXLE LS 80W-90

Key literature references and sources for data	The manufacturer's SDS. 18.3.2019
Revision comments	Revised formulation. NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	13/06/2019
Supersedes date	12/09/2018
SDS number	5171
Hazard statements in full	H226 Flammable liquid and vapour. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects. EUH208 Contains Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched), Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs. May produce an allergic reaction.