



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	+358 800 147 111, +358 9 471 977, Poison Information Centre
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

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

2.2. Label elements

Hazard statements	EUH208 Contains Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14-tert-alkyl, Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs. May produce an allergic reaction.
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Supplemental label information	EUH210 Safety data sheet available on request.
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2.3. Other hazards

Other hazards	This product does not contain any substances classified as PBT or vPvB. Substances considered to have endocrine disrupting properties (environment) are present in this product in quantities of 0,1% or higher. CAS 1471311-26-8
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SECTION 3: Composition/information on ingredients

3.2. Mixtures

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Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	5 - < 10 %
CAS number: 72623-87-1 EC number: 276-738-4	
Classification Asp. Tox. 1 - H304	
Distillates (petroleum), solvent-dewaxed heavy paraffinic	1 - < 2,5 %
CAS number: 64742-65-0 EC number: 265-169-7	
Classification Asp. Tox. 1 - H304	
Distillates (petroleum), hydrotreated heavy paraffinic	1 - < 2,5 %
CAS number: 64742-54-7 EC number: 265-157-1	
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: Proprietary	
Classification Aquatic Chronic 3 - H412	
Distillates (petroleum), solvent - dewaxed light paraffinic	1 - < 2,5 %
CAS number: 64742-56-9 EC number: 265-159-2	
Classification Asp. Tox. 1 - H304	
Distillates (petroleum), hydrotreated light paraffinic	1 - < 2,5 %
CAS number: 64742-55-8 EC number: 265-158-7	
Classification Asp. Tox. 1 - H304	

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Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentaoxide, and salted by amines, C12-14-tert-alkyl 1 - < 2,5 % *

CAS number: — EC number: 931-384-6

Classification

Acute Tox. 4 - H302
Eye Dam. 1 - H318
Skin Sens. 1B - 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: 1471311-26-8 EC number: Proprietary

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.

Ingredient notes Special concentration limit:
* EC 931-384-6
Eye Dam. 1 - H318; 50 - 100 %, Skin Sens. 1B - H317; 9,39 - 100 %

Other information A petroleum product., DMSO < 3% (IP 346).

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information Keep affected person under observation.

Inhalation Remove person to fresh air and keep comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention if symptoms are severe or persist.

Ingestion Maintain an open airway. 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.

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 (CO₂).

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).

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.

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

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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	-
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.
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SECTION 10: Stability and reactivity

10.1. Reactivity

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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

Notes (oral LD₅₀) > 2000 mg/kg (calculated)

Skin corrosion/irritation

Skin corrosion/irritation Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation The product contains a small amount of sensitising substance. May cause an allergic skin reaction. Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

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.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

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Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Toxicological information on ingredients.

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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 5,58 mg/l, 4 hours, Dust/Mist Rat

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

Distillates (petroleum), hydrotreated heavy paraffinic

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 15000 mg/kg, Oral, Rat

Acute toxicity - dermal

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

Distillates (petroleum), solvent - dewaxed light 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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 5,53 mg/l, 4 hours, Dust/Mist Rat

Distillates (petroleum), hydrotreated light 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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 5,58 mg/l, Inhalation, Rat (4h)

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14-tert-alkyl

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Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ ~2000 mg/kg, Oral, Rat (OECD TG 401)

ATE oral (mg/kg) 500.0

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Based on available data the classification criteria are not met. Low acute toxicity to aquatic organisms. 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)

Distillates (petroleum), hydrotreated heavy paraffinic

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: > 100 mg/l, Fish

Acute toxicity - aquatic invertebrates EL50, 48 hours: > 10000 mg/l, Marinewater invertebrates, Freshwater invertebrates

Acute toxicity - aquatic plants EL50, 72 hours: > 100 mg/l, Algae

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, : 10 mg/l, Fish

Chronic toxicity - aquatic invertebrates NOEC, : 10 mg/l, Marinewater invertebrates, Freshwater invertebrates

Distillates (petroleum), solvent - dewaxed light paraffinic

Acute aquatic toxicity

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Acute toxicity - fish	LL50, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow) WAF (OECD TG 203)
Acute toxicity - aquatic invertebrates	EL50, 48 hours: > 10000 mg/l, Daphnia magna WAF (OECD TG 202)
Acute toxicity - aquatic plants	NOEL, 72 hours: >= 100 mg/l, Pseudokirchneriella subcapitata WAF (OECD TG 201)
<u>Chronic aquatic toxicity</u>	
Chronic toxicity - aquatic invertebrates	NOEL, 21 days: 10 mg/l, Daphnia magna WAF (OECD TG 211)

Distillates (petroleum), hydrotreated light paraffinic

<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LL50, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow) WAF (OECD TG 203)
Acute toxicity - aquatic invertebrates	EL50, 48 hours: > 10 000 mg/l, Daphnia magna WAF (OECD TG 202)
Acute toxicity - aquatic plants	NOEL, 72 hours: ≥ 100 mg/l, Pseudokirchneriella subcapitata WAF (OECD TG 201)
<u>Chronic aquatic toxicity</u>	
Chronic toxicity - fish early life stage	NOELR, 14 days: ≥ 1000 mg/l, Oncorhynchus mykiss (Rainbow trout) (calculated)
Chronic toxicity - aquatic invertebrates	NOEL, 21 days: 10 mg/l, Daphnia magna WAF (OECD TG 211)

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14-tert-alkyl

<u>Acute aquatic toxicity</u>	
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)
<u>Chronic aquatic toxicity</u>	
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

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Biodegradation 2 - 4 %, 28 d (OECD TG 301B)

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

Biodegradation 0%, 28 d (Modified Sturm test)

Distillates (petroleum), solvent - dewaxed light paraffinic

Biodegradation Inherently biodegradable.
31 %, 28 d (OECD TG 301 B)

Distillates (petroleum), hydrotreated light paraffinic

Biodegradation 2 - 4 %, 28 d (OECD TG 301B)

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14-tert-alkyl

Biodegradation Not readily biodegradable.
7,4 %, 28 d (Modified Sturm-test)

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient -

Ecological information on ingredients.

Distillates (petroleum), hydrotreated heavy paraffinic

Partition coefficient log Pow > 7

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

Distillates (petroleum), hydrotreated light paraffinic

Bioaccumulative potential log Pow > 3

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Substances considered to have endocrine disrupting properties (environment) are present in this product in quantities of 0,1% or higher. CAS 1471311-26-8

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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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. Do not discharge into drains or watercourses or onto the ground.

SECTION 14: Transport information

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

National regulations EU regulatory references for the safety data sheet:
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).

EU legislation

Max. content of Volatile Organic Compounds (VOC):
32,36 %

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Authorisations (SI 2020 No. 1577 Annex XIV) 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
 This product is/contains a substance that is included in The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 (as amended) Annex XIV - List of substances subject to authorisation. 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

Key literature references and sources for data The manufacturer's SDS. 10.10.2022

Revision comments Revised formulation. NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date 21/10/2022

Supersedes date 13/06/2019

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 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14-tert-alkyl, Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs. May produce an allergic reaction.