SDS(Safety Data Sheet)

Product	HMC PCDO C5 0W-20		
MSDS Number	List No.	Issuing date	Last revised date
-	LB2811	2017-09-15	2026-02-23

1. IDENTIFICATION

1) Product name

HMC PCDO C5 0W-20

2) Recommended use of the chemical and restriction on use

- Recommended use: Lubricants
  Diesel engine oil
- Restrictions on use: Do not use for any other purpose.

3) Details of the supplier of the safety data sheet

○ **Manufacturer**

- Company name: GS Caltex Corporation
- Address: GS Tower, 508, Nonhyeon-ro, Gangnam-gu, Seoul, Korea
- Emergency telephone number: +82-1899-5145

2. HAZARDS IDENTIFICATION

1) Classification of the product

- Not applicable

2) Label elements

○ **Hazard pictograms**

- Not applicable

○ **Signal word**

- Not applicable

○ **Hazard statements**

- Not applicable

○ **Precautionary statements**

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

3) Other hazards

○ **Product NFPA Level**

(※ 0-Lack, 1-Low, 2-Moderate, 3-High, 4-Very High)

Product name	Health	Flammable	Reaction
HMC PCDO C5 0W-20	0	1	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Trade names and Synonyms	CAS No.	EC No.	Contain Ratio(%)
Distillates (petroleum), hydrotreated heavy paraffinic	Emulsifiable oil	64742-54-7	265-157-1	65 ~ 75
Trade secret				5 ~ 15
1-Dodecene homopolymer, hydrogenated	CSR160805-24366	151006-63-2		10 ~ 20
Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based	Factory Supply Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	276-737-9	1 ~ 5
Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based		72623-87-1	276-738-4	1 ~ 5
Distillates (petroleum), solvent-dewaxed light paraffinic	Solventdewaxed light paraffinic distillate (petroleum)	64742-56-9	265-159-2	0.4 ~ 3
ar-Nonyl-N-(nonylphenyl)benzenamine	DINONYL DIPHENYLAMINE	36878-20-3	253-249-4	0.3 ~ 2
Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts		134759-18-5		0.2 ~ 2
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Adriatic spindle oil; Mineral oil, petroleum distillates, solvent dewaxed heavy paraffinic (severe solvent-refining and/or hydrotreatment) ; Solvent dewaxed heavy paraffinic distillate	64742-65-0	265-169-7	0.1 ~ 2
3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester	Octyl-3,5-di-tert-butyl-4-hydroxy-hydrocinnamate	125643-61-0	406-040-9	0.1 ~ 1
Paraffin oils (petroleum), catalytic dewaxed heavy	MINERAL OIL, PETROLEUM DISTILLATES CATALYTIC DEWAXED HEAVY PARAFFINIC (mild or no solvent-refining or hydrotreatment)	64742-70-7	265-174-4	0.1 ~ 1
1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)		799241-27-3		0.1 ~ 0.3

Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched		253873-84-6		0.1 ~ 0.3
Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched		253873-83-5		0.1 ~ 0.3
Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi-		90901-24-9		0.1 ~ 0.3

※ Except for the above components, all components are not listed as they do not meet the criteria for hazardous risk classification in Article 104 (Classification of Hazardous Factors) of Regulated Acts and Occupational Safety and Health Act.

※ This product has less than 3% DMSO extract as measured by the IP346 method.

4. FIRST AID MEASURES

1) Eye contact
- In case of contact with material, immediately flush eyes with running water for at least 15 minutes.
- If eye irritation persists: Get medical advice/attention.

2) Skin contact
- In case of contact with material, immediately flush skin with running water for at least 15 minutes.
- Remove and isolate contaminated clothing and shoes.
- Launder contaminated clothing and shoes before re-use.
- If skin irritation occurs: Get medical advice/attention.

3) Inhalation
- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

4) Ingestion
- If unconscious but breathing, never give anything by mouth
- If swallowed do not induce vomiting, seek medical advice immediat.
- Get immediate medical advice/attention.
- Rinse mouth.

5) Indication of any immediate medical attention and special treatment needed
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

1) Suitable (and unsuitable) extinguishing media
- Small fire: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO2 (Suitable extinguishing media)
- Large fire: Water spray/fog, regular foam (Suitable extinguishing media)
- High-pressure water (Unsuitable extinguishing media)

2) Special hazards arising from the substance or
- May be ignited by heat, sparks or flames.
- Fire may produce irritating and/or toxic gases.

mixture	- May cause toxic effects if inhaled.
3) Special protective equipment and precautions for firefighters	- Substance may be transported hot. - Runoff may cause pollution. - Contact may cause burns to skin and eyes. - Dike fire-control water for later disposal; do not scatter the material. - Move containers from fire area if you can do it without risk. - Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out. - Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. - Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.

6. ACCIDENTAL RELEASE MEASURES

1) Health considerations and protective equipment	- Do not touch or walk through spilled material. - ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). - Ventilate the contaminated area. - Stop leak if you can do it without risk. - Prevent dust cloud. - Please note that materials and conditions to be avoided.
2) Environmental precautions	- Prevent entry into waterways, sewers, basements or confined areas.
3) Methods and material for containment and cleaning up	- Small Spill: Flush area with flooding quantities of water. - Large Spill: Dike far ahead of liquid spill for later disposal. - With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. - Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. - Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

7. HANDLING AND STORAGE

1) Precautions for safe handling	- Wash ... thoroughly after handling. - Please note that materials and conditions to be avoided. - Handling refer to engineering control/personal protection section. - Cuation: High temperature
2) Conditions for safe storage (including any incompatibilities)	- Store in a dry place. Store in a closed container. - Please note that materials and conditions to be avoided. - Store in a closed container.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Control parameters

Chemical name	Exposure limits	ACGIH TLV	OSHA PEL	Biological limit values(BLV
Distillates (petroleum), hydrotreated heavy paraffinic	TWA : 0.8 mg/m3	TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)	Not available	Not available
Trade secret	Not available	Not available	Not available	Not available
1-Dodecene homopolymer, hydrogenated	Not available	Not available	Not available	Not available
Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based	Not available	TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)	Not available	Not available
Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based	TWA : 0.8 mg/m3	Not available	Not available	Not available
Distillates (petroleum), solvent-dewaxed light paraffinic	TWA : 0.8 mg/m3	TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)	Not available	Not available
ar-Nonyl-N-(nonylphenyl)benzenamine	Not available	Not available	Not available	Not available
Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts	Not available	Not available	Not available	Not available

Distillates (petroleum), solvent-dewaxed heavy paraffinic	TWA : 0.8 mg/m3	TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)	Not available	Not available
3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester	Not available	Not available	Not available	Not available
Paraffin oils (petroleum), catalytic dewaxed heavy	Not available	TWA 5 mg/m3, Inhalable particulate matter(Mineral oil, Pure, highly and severely refined)	Not available	Not available
1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)	Not available	Not available	Not available	Not available
Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched	TWA : 0.5 mg/m3	Not available	PEL: 5 mg/m3 (Soluble compounds), 15 mg/m3 (Insoluble compounds - Total dust) mg/m3	Not available
Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched	Not available	Not available	Not available	Not available
Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi-	Not available	Not available	Not available	Not available

2) Appropriate engineering controls

- Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
- Adjust the ventilation rate to suit the condition.

3) Personal protection equipment

○ **Respiratory protection**
- Wear a adequate respiratory protection equipment with certificate by considering physicochemical properties of exposured particulate material.
- In case exposured to particulate material, the respiratory protective equipments as follow are recommended. - facepiece filtering respirator or air-putifying respirator, high-efficiency particulate air(HEPA) filter media or resporator equipped with power
- In lack of oxigan(<19.6%), wear the supplied-air respiratior or self-contained breathing

apparatus.
- Consider the warning characteristics beforehand.

○ **Eye protection**
- Wear breathable safety goggles to protect from material causing eye irritation or other disord
- An eye wash unit and safety shower station should be available nearby work place.
- In case of direct exposure or potential exposure to the substance, wear safety glasses for chemicals approved in the country.

○ **Hand protection**
- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.
- In case of direct exposure or potential exposure to the substance, wear safety gloves for chemicals approved in the country.

○ **Body protection**
- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.
- In case of direct exposure or potential exposure to the substance, wear protective clothing fo chemicals approved in the country.

9. PHYSICAL AND CHEMICAL PROPERTIES

Item	Input Value
Apperance	Liquid
Color	Light yellow
Smell	a specific smell of hydrocarbon
Smell Threshold	No Data
pH (Numerical value)	No Data
Melting/Freezing Point	No Data
Boilling Point	No Data
Flash Point	220 ℃
Evaporating Rate	No Data
Flammability(Solid, Gas)	No Data
Explosibility Range	No Data
Steam Pressure	No Data
Solubility	No Data
Vapor Density	No Data
Specific Gravity	0.845
Distribution Coefficient	No Data
SelfIgnition Temperature	No Data
Pyrolysis Temperature	No Data
Viscosity	8.1 mm2/s (at 100℃)
Molecular Weight	No Data

10. STABILITY AND REACTIVITY

1) Chemical Stability and hazardous reactivity
- Stable under normal temperatures and pressures.
- Containers may explode when heated.
- Some may burn but none ignite readily.

2) Conditions to avoid
- Ignition source(heat, spark, flame)

3) Incompatible materials
- Combustibles
- Irritating and/or toxic gas

4) Hazardous decomposition products
- Not available

11. TOXICOLOGICAL INFORMATION

1) Information on the likely routes of exposures

○ **Inhalation**

- No inhalation effects through respiratory system.

○ **Skin contact**

- No effect on skin contact.

○ **Eye contact**

- No effect on eye contact.

○ **Ingestion**

- No ingestion effect through mouth.

2) Health hazard information

○ **Acute toxicity**

*** Oral - Not classified (ATEmix > 2000 mg/kg)**

- Distillates (petroleum), hydrotreated heavy paraffinic : rat(male/female), LD50 > 5,000 mg/kg bw, no deaths (read-across: 64742-56-9) (OECD TG 401, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rat(male/female); LD50 > 5000 ㎎/kg(OECD TG 401, GLP, read across: Alkane 4)(ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : rat(male/female); no deaths; LD50 > 5000 mg/kg bw; (read-across: CAS No. 64742-56-9) (OECD TG 401, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : rat(male/female); LD50 > 5000 ㎎/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : rat; LD50 > 5000 mg/kg bw, no deaths (OECD TG 401, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : rat(male/female); LD50 > 5000 ㎎/kg bw, no deaths (OECD TG 401) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : rat(male/female); LD50 > 5000 ㎎/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : rat(male/female); LD50 > 2000 mg/kg bw, no deaths (OECD TG 401, GLP) ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : rat(male/female); LD50 > 5000 ㎎/kg bw, no deaths

(OECD TG 401, GLP) (read across: 64742-56-9) (ECHA)

- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

*** Dermal - Not classified (ATEmix > 2000 mg/kg)**

- Distillates (petroleum), hydrotreated heavy paraffinic : rabbit(male/female), LD50 > 5,000 mg/kg bw, no deaths (read-across: 64742-56-9) (OECD TG 402, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rat(male/female); LD50 >2000 mg/kg, no deaths(OECD TG 402, GLP, read across; Alkane 4)(ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : rabbit; no deaths; LD50 > 2000 mg/kg bw (read-across: CAS No. 64742-53-6) (OECD TG 402, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : rabbit(male/female); LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : rabbit; LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : rat(male/female); LD50 > 2000 mg/kg bw (OECD TG 402) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : rabbit(male/female); LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : rat(male/female); LD50 > 2000 mg/kg bw, no deaths (OECD TG 402, GLP) ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : rabbit(male/female); LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

*** Inhalation(Gas) - Not applicable**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-

hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

*** Inhalation(Vapour) - Not classified (ATEmix > 20 mg/L)**
- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not available
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not available
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

*** Inhalation(Dust, mist) - Not classified (ATEmix > 5 mg/L)**
- Distillates (petroleum), hydrotreated heavy paraffinic : inhalation: aerosol; rat(male/female); 4h-LC50 > 5.53 mg/L. No deaths (read-across: MRD-87-102) (OECD TG 403)(ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rat(male/female); inhalation: aerosol; LC50 > 5.06 mg/L /4h, no deaths (OECD TG 403, GLP) (read across; Poly Alpha Olefin (1-dodecene trimer, hydrogenated)) ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : rat; inhalation: aerosol; no deaths; LC50 > 5.53 mg/L air 4hrs (read-across: CAS No. 64741-88-4) (OECD TG 403) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : rat(male/female); inhalation: aerosol; LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : rat; inhalation: aerosol; LC50 > 5.53 mg/L air/4h, no deaths (OECD TG 403) (read across : MRD-87-102) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : rat(male/female); inhalation: aerosol; LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not available
- Paraffin oils (petroleum), catalytic dewaxed heavy : rat(male/female); inhalation: aerosol; LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available

- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Skin corrosion/Irritation : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic	:	Solvent dewaxed light paraffinic oil is not considered to be irritating to the skin of rabbits. (read across : 64742-56-9) (GLP) (ECHA)
- Trade secret	:	Not available
- 1-Dodecene homopolymer, hydrogenated	:	rabbit; not irritating(OECD TG 404, GLP)(read across; Linealene dimer A-30H) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based	:	rabbit; not irritating (read-across: CAS No. 64742-53-6) (OECD TG 404, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based	:	rabbit; not irritating (GLP) (read across: 64742-56-9) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic	:	rabbit; not irritating (GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine	:	rabbit; slightly irritating (OECD TG 404, GLP) (read across: TK12340) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts	:	Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic	:	rabbit; not irritating (GLP) (read across: 64742-56-9) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester	:	rabbit; not irritating (OECD TG 404, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy	:	rabbit; not irritating (GLP) (read across: 64742-56-9) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)	:	Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum,	:	Not available

branched

- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Serious eye damage/irritation : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : Solvent dewaxed light paraffinic oil is not considered to be an ocular irritant. (read-aross: 64742-56-9) (equivalent or similar to guideline OECD TG 405, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rabbit; not irritating(OECD TG 405, GLP)(read across; Oronite XS 101)(ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : rabbit; not irritaing (read-across: CAS No. 64742-56-9) (OECD TG 405, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : rabbit; not irritating (OECD TG 405, GLP) (read across: 64742-56-9) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : rabbit; not irritating (GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : rabbit; not irritating (OECD TG 405, GLP) (read across: TK12340) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : rabbit; not irritating (OECD TG 405, GLP) (read across: 64742-56-9) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Rabbit; not irritating (OECD TG 405, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : rabbit; not irritating (OECD TG 405, GLP) (read across: 64742-56-9) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide : Not available

(MoO3)

- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Respiratory sensitization : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not available
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not available
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with : Not available

carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)

- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ Skin sensitization : Not classified

- Distillates (petroleum), hydrotreated heavy paraffinic : Under the conditions of the test, Solvent dewaxed light paraffinic oil is considered non-sensitizing for guinea-pigs. (read-aross: 64742-56-9) (OECD TG 406, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : guinea pig(male/female); not sensitising (OECD TG 406, GLP) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : guinea pig; not sensitising (read-across: CAS No. 64742-53-6) (OECD TG 406, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : guinea pig; not sensitising (OECD TG 406, GLP) (read across: 64742-53-6) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : guinea pig; not sensitising (OECD TG 406, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : guinea pig; not sensitising (OECD TG 406, GLP) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : guinea pig; not sensitising (OECD TG 406, GLP) (read across: 64742-53-6) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : guinea pig; not sensitising (OECD TG 406, GLP) (ECHA)
- Paraffin oils (petroleum), : guinea pig; not sensitising (OECD TG 406, GLP) (read across: 64742-53-6) (ECHA)

catalytic dewaxed heavy

- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Carcinogenicity : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : EU CLP 1272/2008 : Carc. 1B (Note L : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : EU CLP 1272/2008: Carc. 1B (Note L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : EU CLP 1272/2008 : Carc. 1B (Note L : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346)
- Distillates (petroleum), solvent-dewaxed light paraffinic : EU CLP 1272/2008 : Carc. 1B (Note L : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346)
- ar-Nonyl-N-(nonylphenyl)benzenamine : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : EU CLP 1272/2008 : Carc. 1B (Note L : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346)
- 3,5-Bis(1,1- : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed

Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester

- Paraffin oils (petroleum), catalytic dewaxed heavy : EU CLP 1272/2008: Carc. 1B (Note L: Lubricant base oils are non-carcinogenic if DMSO extract as measured by IP346 is less than 3% and are considered sufficiently refined.)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed

○ **Germ cell mutagenicity : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : In vitro bacterial reverse mutation assay: negative (equivalent or similar to guideline OECD TG 471) (ECHA)
  In vitro mammalian chromosome aberration test: negative (read-aross : 64742-53-6) (equivalent or similar to guideline OECD TG 473, GLP) (ECHA)
  In vivo micronucleus assay : negative (read-across : 64741-62-4, 64741-53-3) (equivalent or similar to guideline OECD TG 474) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : in vitro Mammalian Cell Gene Mutation Test; negative(OECD TG 476, GLP)(Read across; Alkane 4)(ECHA)
  In vivo Mammalian Erythrocyte Micronucleus Test; negative (OECD TG 474, GLP) (read across : 1-Dodecene dimer with 1-decene, hydrogenated) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : in vitro mammalian chromosome aberration test: negative (read-across: CAS No. 64741-52-2) (OECD TG 473) (ECHA)
  in vitro bacterial reverse mutation assay: negative (read-across: CAS No. 64742-54-7 and 64742-52-5) (OECD TG 471) (ECHA)
  in vitro mammalian cell gene mutation assay: negative (read-across: CAS No. 64742-52-5) (OECD TG 476, GLP) (ECHA)
  in vivo mammalian erythrocyte micronucleus assay: negative (read-across: solvent-extracted, dewaxed paraffin oils, sufficiently refined, IP 346 < 3%) (OECD TG 474) (ECHA)
- Lubricating oils : In vitro Bacterial Reverse Mutation Assay : positive (OECD TG 471) (read across:

(petroleum), (C=20-50) hydrotreated neutral oil-based		64741-50-0) (ECHA), In Vitro Mammalian Chromosome Aberration Test : negative (OECD TG 473) (read across: L-06 Light Hydrotreated Feedstock) (ECHA) In vivo Mammalian Erythrocyte Micronucleus Test : negative (OECD TG 474) (read across: solvent-extracted, dewaxed paraffin oil) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic	:	in vitro; Mammalian Chromosome Aberration Test : Negative (OECD TG 473, GLP) (ECHA) in vitro; Mammalian Cell Gene Mutation Test : Positive (OECD TG 476) (ECHA) in vitro; Bacterial Reverse Mutation Assay : Positive (OECD TG 471, GLP) (ECHA) in vivo; Mammalian Erythrocyte Micronucleus Test : Negative (OECD TG 474) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine	:	In vitro Bacterial Reverse Mutation Assay : negative (OECD TG 471) (read across: TK12340) (ECHA), In Vitro Mammalian Cell Gene Mutation Test : negative (OECD TG 476) (read across: 4,4-dioctyldiphenylamine) (ECHA) In vivo rodent dominant lethal assay : negative (OECD TG 478) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts	:	Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic	:	In vitro Bacterial Reverse Mutation Assay : positive (OECD TG 471) (read across: 64741-50-0) (ECHA), In Vitro Mammalian Chromosome Aberration Test : negative (OECD TG 473) (read across: L-06 Light Hydrotreated Feedstock) (ECHA) In vivo Mammalian Erythrocyte Micronucleus Test : negative (OECD TG 474) (read across: solvent-extracted, dewaxed paraffin oil) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester	:	In vitro Bacterial Reverse Mutation Assay; negative (OECD TG 471, GLP) (ECHA) In vivo Mammalian Erythrocyte Micronucleus Test; negative (OECD TG 474, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy	:	In vitro Bacterial Reverse Mutation Assay : positive (OECD TG 471) (read across: 64741-50-0) (ECHA), In Vitro Mammalian Chromosome Aberration Test : negative (OECD TG 473) (read across: L-06 Light Hydrotreated Feedstock) (ECHA) In vivo Mammalian Erythrocyte Micronucleus Test : negative (OECD TG 474) (read across: solvent-extracted, dewaxed paraffin oil) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)	:	Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched	:	Not available
- Molybdenum, [N,N-bis(2-	:	Not available

ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched

- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Reproductive toxicity : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : rat; screening for reproductive / developmental toxicity; Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity between either of the dose formulations. (read-aross : Chevron 100 Neutral) (OECD TG 421, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rat(male/female); one-generation reproductive toxicity study; no effects(OECD TG 415, GLP)(Read across; Ethylflo 166 poly alpha olefin)(ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : rat; screening for reproductive/developmental toxicity; Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity between either of the dose formulations (read-across: CAS No. 64742-54-7) (OECD TG 421, GLP) (ECHA)
  rat; developmental toxicity; There was no evidence of teratogenicity. There were no treatment-related changes observed during the external, skeletal, or visceral evaluations (read-across: CAS No. 64741-88-4) (OECD TG 414) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : rat(male/female); 1000 mg/kg/day; Reproduction / Developmental Toxicity Screening Test; Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity between either of the dose formulations. (OECD TG 421, GLP) (read across: Chevron 100 Neutral) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : rat; Does not adversely affect reproductive function (OECD TG 421, GLP)
  rat; Not toxic to offspring and parents (OECD TG 414) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : rat; 50, 150 and 500 mg/kg bw; The substance is not teratogenic and not embryotoxic in rats. It causes maternal toxicity at a dose level of 500 mg/kg bw. (OECD TG 414, GLP) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : rat(male/female); 1000 mg/kg/day; Reproduction / Developmental Toxicity Screening Test; Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity between either of the dose formulations. (OECD TG 421, GLP) (read across: Chevron 100 Neutral) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) : rabbit; oral; 20, 40, 80 mg/kg bw/day; It is not thought that the increase in post implantation loss is due to the slight maternal toxicity recorded. However, due to a deficiency in the food consumption data it is not possible to draw a firm conclusion based on an incomplete maternal data set. Therefore Evernox 1135

ester		will not be classified at this stage but an embryo-fetal study, on a second species, namely the rat, will be triggered at the next tonnage band so that a firm and definitive conclusion can be drawn regarding Evernox 1135 and whether it does, or does not, warrant classification as a Reproductive Toxicant. (OECD TG 414, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy	:	rat(male/female); 1000 mg/kg/day; Reproduction / Developmental Toxicity Screening Test; Reproductive performance was not adversely affected at any dose level evaluated. There were no neonatal toxicity observed at any dose level. There were no differences in terms of systemic toxicity between either of the dose formulations. (OECD TG 421, GLP) (read across: Chevron 100 Neutral) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)	:	Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched	:	Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched	:	Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi-	:	Not available

○ Specific target organ toxicity (single exposure) : Not classified

- Distillates (petroleum), hydrotreated heavy paraffinic	:	Hydronephrosis of the right kidney was observed in one rat but was not considered treatment-related by the study authors. No other abnormalities were observed in any male or female rats. (read-across: 64742-56-9) (OECD TG 401, GLP)(ECHA) Dermal administration of API 78-9 at 5000 mg/kg did not result in any dermal irritation or signs of clinical toxicity. Gross necroscopy did not reveal any signs of systemic toxicity at the 5000 mg/kg dose level. (read-across: 64742-56-9) (OECD TG 402, GLP)(ECHA)
- Trade secret	:	Not available
- 1-Dodecene homopolymer, hydrogenated	:	rat(male/female); acute oral: There were no signs of systemic toxicity observed at the 5000 mg/kg dose level.(OECD TG 401, GLP, read across: Alkane 4)(ECHA) rat(male/female); acute dermal: No signs of systemic toxicity were observed through the study period in male or female rats. Rat(M/F): acute inhalation: there were no gross abnormalities observed.(OECD TG 402, GLP, read across; Alkane 4)(ECHA)
- Lubricating oils (petroleum), (C=15-30),	:	oral; rat; No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 mg/kg bw, no deaths (read-across: CAS No. 64742-56-9) (OECD TG

hydrotreated neutral oil-based		401, GLP) (ECHA) dermal; rat; Skin irritation and the occurrence of soft stool occurred in some animals, but this latter effect was transient. LD50 > 2000 mg/kg bw, no deaths (read-across: CAS No. 64742-53-6) (OECD TG 402, GLP) (ECHA) inhalation: aerosol; rat; After removal from the chamber all of the animals had an extreme amount of test material on their fur. Post exposure the number of animals with material on their fur diminished and was absent by Day 10. LC50 > 5.53 mg/L air 4hrs, no deaths (read-across: CAS No. 64741-88-4) (OECD TG 403) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based	:	oral; rat(male/female); No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 mg/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA) dermal; rabbit(male/female); No visible signs of clinical toxicity were observed in male and female rabbits dosed with API 78-9 at 5000 mg/kg. LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA) inhalation: aerosol; rat(male/female); The test material which was deposited on the animal fur during exposure diminished by observation Day 10. No mortality in either the control or exposed group was reported. There were no statistically significant differences in mean body weight between groups. LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic	:	oral; rat; No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 mg/kg bw, no deaths (OECD TG 401, GLP) (ECHA) dermal; rabbit; No visible signs of clinical toxicity were observed. LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine	:	oral; rat(male/female); No compound related gross organ changes were observed. LD50 > 5000 mg/kg bw, no deaths (OECD TG 401) (ECHA) dermal; rat(male/female); Piloerection, abnormal body positions, and dyspnea were seen, being common symptoms in acute toxicity testing. The animals recovered within 9 days. LD50 > 2000 mg/kg bw (OECD TG 402) (ECHA) inhalation: aerosol; rat(male/female); Necropsy and histopathological examination revealed no substance-related findings. LC50 > 5.1 mg/L air /4h, no deaths (OECD TG 403) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts	:	Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic	:	oral; rat(male/female); No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 mg/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA) dermal; rabbit(male/female); No visible signs of clinical toxicity were observed in male and female rabbits dosed with API 78-9 at 5000 mg/kg. LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA) inhalation: aerosol; rat(male/female); The test material which was deposited on the animal fur during exposure diminished by observation Day 10. No mortality in either the control or exposed group was reported. There were no statistically significant differences in mean body weight between groups. LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy	:	oral; rat(male/female); Effects on organs: No deviations from the normal morphology. (OECD TG 401, GLP) ECHA)

benzene propanoic acid branched alkyl (C=7-9) ester

- Paraffin oils (petroleum), catalytic dewaxed heavy : oral; rat(male/female); No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 ㎎/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA)
  dermal; rabbit(male/female); No visible signs of clinical toxicity were observed in male and female rabbits dosed with API 78-9 at 5000 mg/kg. LD50 > 5000 ㎎/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA)
  inhalation: aerosol; rat(male/female); The test material which was deposited on the animal fur during exposure diminished by observation Day 10. No mortality in either the control or exposed group was reported. There were no statistically significant differences in mean body weight between groups. LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ Specific target organ toxicity (repeated exposure) : Not classified

- Distillates (petroleum), hydrotreated heavy paraffinic : Dermal; The systemic toxicity NOAEL for this 28-day dermal toxicity study in the rabbit is 1,000 mg/kg, based on the lack of adverse systemic effects observed at this dose level. (read-aross : 64742-53-6) (OECD TG 410, GLP) (ECHA)
  Inhalation; rat; 4 weeks; 0, 50, 220 or 1000 mg/m3; No systemic effects were observed. The NOAEL for lung changes associated with oil deposition in the lungs was 220 mg/m3. As no systemic toxicity was observed, the overall NOAEL for systemic effects was > 980 mg/m3. (equivalent or similar to guideline OECD TG 412) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : rat(male/female); oral; 90ds; 0; 1000; 7000; or 50,000 ppm; There were no treatment-related effects noted in clinical chemistry, urinalysis, gross pathology, or histopathology. (NOAEL=50 000 ppm)(OECD TG 408, GLP)(ECHA)
- Lubricating oils (petroleum), (C=15-30), : oral; rat; All animals in the 125 mg/kg/day survived to date of sacrifice. No details on clinical signs were provided. A NOAEL could not be identified and is

hydrotreated neutral oil-based		less than 125 mg/kg/day when administered orally (OECD TG 408) (ECHA) dermal; rabbit; The systemic toxicity NOAEL for this 28-day dermal toxicity study in the rabbit is 1,000 mg/kg, based on the lack of adverse systemic effects observed at this dose level (read-across: CAS No. 64742-53-6) (OECD TG 410, GLP) (ECHA) inhalation; rat; No systemic effects were observed. As no systemic toxicity was observed, the overall NOAEL for systemic effects was > 980 mg/m3 (read-across: CAS No. 64742-70-7) (OECD TG 412) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based	:	rabbit(male/female); dermal; The systemic toxicity NOAEL for this 28-day dermal toxicity study in the rabbit is 1,000 mg/kg, based on the lack of adverse systemic effects observed at this dose level. (OECD TG 410, GLP) (read across: 64742-53-6) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic	:	oral; rat(male/female); No clinical signs of toxicity observed in either male or female rats. LD50 > 5000 mg/kg bw, no deaths (OECD TG 401, GLP) (read across: 64742-56-9) (ECHA) dermal; rabbit(male/female); No visible signs of clinical toxicity were observed in male and female rabbits dosed with API 78-9 at 5000 mg/kg. LD50 > 5000 mg/kg bw, no deaths (OECD TG 402, GLP) (read across: 64742-56-9) (ECHA) inhalation: aerosol; rat(male/female); The test material which was deposited on the animal fur during exposure diminished by observation Day 10. No mortality in either the control or exposed group was reported. There were no statistically significant differences in mean body weight between groups. LC50 > 5.53 mg/L air /4h, no deaths (OECD TG 403) (read across: MRD-87-102) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine	:	oral; rat(male); 28 days; Based on the absence of clinical findings and effects on body weight, dose levels of 100, 300 and 1000 mg/kg bw were chosen for subchronic dosing. (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts	:	Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic	:	rabbit(male/female); dermal; The systemic toxicity NOAEL for this 28-day dermal toxicity study in the rabbit is 1,000 mg/kg, based on the lack of adverse systemic effects observed at this dose level. (OECD TG 410, GLP) (read across: 64742-53-6) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester	:	rat(male/female); oral; 90 days; no effects (OECD TG 408, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy	:	rat(male/female); dermal; 13 weeks; No systemic or local effects were considered significant, and the NOAEL is ≥ 2000 mg/kg/day. (OECD TG 411) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide	:	Not available

(MoO3)

- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Aspiration hazard : Not classified**

- Distillates (petroleum), hydrotreated heavy paraffinic : Viscosity: 73.9 mm2/s (40°C)(ECHA) & hydrocarbons
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : kinematic viscosity: 40°C is 25.3-44.3 mm2/s(ECHA) & not hydrocarbons
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : kinematic viscosity > 2 mm2/s (40ºC) (CONCAWE, 2010a; CONCAWE, 1984; CONCAWE, 1997) (ECHA) & hydrocarbons
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : > 2 mm2/s (40°C) & hydrocarbons
- Distillates (petroleum), solvent-dewaxed light paraffinic : 8.4 mm2/s (40°C) (ECHA) & hydrocarbons
- ar-Nonyl-N-(nonylphenyl)benzenamine : 585 mPa.s at 40°C (ECHA) & not hydrocarbons
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 52.1 mm2/s (40°C) & hydrocarbons
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Viscosity : 110-115 mPa s (40°C) (OECD TG 114) (ECHA) & not hydrocarbons
- Paraffin oils (petroleum), catalytic dewaxed heavy : >2 mm²/s (40 ºC) (ECHA) & hydrocarbons
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with : Not available

carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3)

- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

12. ECOLOGICAL INFORMATION

1) Ecotoxicity

- Acute toxicity : Not classfied (ATEmix>1mg/L)
- Chronic toxicity : Not classfied

○ **Acute (short-term) aquatic hazard:**

Fish

- Distillates (petroleum), hydrotreated heavy paraffinic : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 96h-LL50(Oncorhynchus mykiss) > 1000 mg/l(OECD TG 203, GLP; read across: 1-Dodecene, dimer with 1-decene, hydrogenated) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : No toxic effects up to the limit of water solubility (< 5 μg/L)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 96h-LC50(Danio rerio) > 94 mg/L (OECD TG 203, GLP) (ECHA); no short-term toxicity
- Paraffin oils (petroleum), catalytic dewaxed heavy : 96h-LL50(Pimephales promelas) > 100 mg/L (OECD TG 203, GLP) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-

ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available

- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

Invertebrates

- Distillates (petroleum), hydrotreated heavy paraffinic : 48h-EL50(Daphnia magna) > 10,000 mg/L (read across : 64742-53-6 or 64741-97-5) (equivalent or similar to guideline OECD TG 202) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 48h-EL50(Daphnia magna) > 1000 mg/l(OECD TG 202, GLP; read across: Alkane 5, 1-decene/1-dodecene homopolymer hydrogenated) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 48h-EL50(Daphnia magna) > 10000 mg/L (OECD TG 202) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : 48h-EL50(Daphnia magna) > 10000 mg/L (OECD TG 202) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : 48h-EL50(Daphnia magna) > 10000 mg/L (OECD TG 202) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : No toxic effects up to the limit of water solubility (< 5 μg/L)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 48h-EL50(Daphnia magna) > 10000 mg/L (OECD TG 202) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 24h-EC50(Daphnia magna) = 4.3 mg/L (OECD TG 202, GLP) (ECHA); no short-term toxicity
- Paraffin oils (petroleum), catalytic dewaxed heavy : 48h-EL50(Daphnia magna) > 10000 mg/L (OECD TG 202) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

Aquatic algae

- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 72h-ErL50(Scenedesmus capricornutum) > 1000 mg/l(OECD TG 201, GLP; read across: Nexbase 2002) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not available
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : No toxic effects up to the limit of water solubility (< 5 μg/L)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 72h-ErC50(Desmodesmus subspicatus) > 3 mg/L (OECD TG 201, GLP) (ECHA); no short-term toxicity
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available

- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Chronic (Long-term) aquatic hazard:**

Fish

- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 14d-NOELR(Oncorhynchus mykiss) >= 1000 mg/L (estimated) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 36d-NOEC(Danio rerio) = 0.001 mg/L (OECD TG 210, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

Invertebrates

- Distillates (petroleum), hydrotreated heavy paraffinic : 21d-NOEL(Daphnia magna)=10 mg/L (read across: 64742-53-6) (equivalent or similar to guideline OECD TG 211, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 21d-NOELR(Daphnia magna)=125 mg/l(OECD TG 211, GLP) (read across: Durasyn 162) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 21d-NOEL(Daphnia magna) = 10 mg/L (OECD TG 211, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : 21d-NOEL(Daphnia magna) = 10 mg/L (OECD TG 211, GLP) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : 21d-NOEL(Daphnia magna) = 10 mg/L (OECD TG 211, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 21d-NOEL(Daphnia magna) = 10 mg/L (OECD TG 211, GLP) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 21d-NOEC(Daphnia magna) <= 0.01 mg/L (OECD TG 211, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : 21d-NOEL(Daphnia magna) = 10 mg/L (OECD TG 211, GLP) (ECHA)

- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

Aquatic algae

- Distillates (petroleum), hydrotreated heavy paraffinic : 72h-NOErL(Pseudokirchnerella subcapitata) >= 100 mg/L (read across: 72623-87-1) (OECD TG 201) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 72h-NOELR(Scenedesmus capricornutum)=1000 mg/l(OECD TG 201, GLP) (read across: Nexbase 2002) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 72h-NOEL(Pseudokirchneriella subcapitata) >= 100 mg/L (OECD TG 201) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : 72h-NOErL(Pseudokirchneriella subcapitata) >=100 mg/L (OECD TG 201) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : 72h-NOErL(Pseudokirchneriella subcapitata) >=100 mg/L (OECD TG 201) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 72h-NOErL(Pseudokirchneriella subcapitata) >=100 mg/L (OECD TG 201) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : water solubility : < 0.03 mg/l (20°C, pH 6.4), 72h-NOErC(Desmodesmus subspicatus) > 3 mg/L (OECD TG 201, GLP) (ECHA); no short-term toxicity
- Paraffin oils (petroleum), catalytic dewaxed heavy : 72h-NOErL(Pseudokirchneriella subcapitata) >=100 mg/L (OECD TG 201) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

2) Persistence and degradability

○ **Persistence**

- Distillates (petroleum), hydrotreated heavy paraffinic : This substance is UVCB, so it is not applicable. (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : log Kow > 6.5 (20 °C) (OECD TG 117, GLP) (read across) (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : log Kow = 6.43 (estimated) (EPISUITE)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : log Kow = 7.87 (estimated) (EPISUITE)
- Distillates (petroleum), solvent-dewaxed light paraffinic : log Kow = 6.13 (experimental) (EPISUITE)
- ar-Nonyl-N-(nonylphenyl)benzenamine : log Kow=12.24 (estimated) (EPISUITE); not valid (over -4<log Kow<8)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : log Kow = 6.13 (experimental) (EPISUITE)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : log Kow = 9.2 (0

°C) (EU Method A.8, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Degradability**
- Distillates (petroleum), hydrotreated heavy paraffinic : The chemical constituents that comprise the other lubricant base oils category consist entirely of carbon and hydrogen and do not contain hydrolyzable groups. As such, they have a very low potential to hydrolyze. Therefore, this degradative process will not contribute to their removal from the environment. (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : They have a very low potential to hydrolyze (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : In contact with water no hydrolysis is expected. (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Hydrolysis; In accordance with REACH Annex VIII column 2, the study does not need to be conducted as the substance is highly insoluble in water, < 0.03 mg / l.
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

3) Bioaccumulative potential

○ **Bioaccumulation**
- Distillates (petroleum), hydrotreated heavy paraffinic : This substance is UVCB, so it is not applicable. (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Members of this category are not expected to be bioaccumulative. (ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : BCF = 8137 (estimated) (EPISUITE)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : BCF = 4996 (estimated) (EPISUITE)
- Distillates (petroleum), solvent-dewaxed light paraffinic : BCF = 5147 (EPISUITE)
- ar-Nonyl-N-(nonylphenyl)benzenamine : BCF=35.87 (estimated) (EPISUITE)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : BCF = 5147 (estimated) (EPISUITE)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : BCF=258 (OECD TG

305, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

○ **Biodegradation**
- Distillates (petroleum), hydrotreated heavy paraffinic : Another lubricant base oil, Solvent Neutral 600 Base Oil (MRD-94 -981), was determined to be inherently biodegradable but not readily biodegradable with a mean degradation of 31.13% by day 28. (read across: Solvent Neutral 600 Base Oil (MRD-94-981)) (OECD TG 301F, GLP) (ECHA)
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : 66% degradation after 28 day (OECD TG 301D, GLP; read-across: 1-Dodecene, dimer with 1-decene, hydrogenated); did not meet the ten day window criteria so cannot be classed as readily biodegradable(ECHA)
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : 31% degradation after 28 days (OECD TG 301F, GLP) (ECHA)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : 31 % degradation after 28d; not readily biodegradable (OECD TG 301F, GLP) (ECHA)
- Distillates (petroleum), solvent-dewaxed light paraffinic : 31% degradation after 28 days; not readily biodegradable (OECD TG 301F, GLP) (ECHA)
- ar-Nonyl-N-(nonylphenyl)benzenamine : 1% degradation after 28 days; under test conditions no biodegradation observed (OECD TG 301B, GLP) (read across: TK12340) (ECHA)
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : 31 % degradation after 28d; not readily biodegradable (OECD TG 301F, GLP) (ECHA)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : not inherently biodegradable (EU Method C.9, GLP) (ECHA)
- Paraffin oils (petroleum), catalytic dewaxed heavy : 31 % degradation after 28d; not readily biodegradable (OECD TG 301F, GLP) (ECHA)
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

4) Mobility in soil
- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Koc = 380400 (estimated) (EPISUITE)
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Koc=6760000 (EPISUITE)
- Distillates (petroleum), solvent-dewaxed light paraffinic : Koc = 208800 (EPISUITE)
- ar-Nonyl-N-(nonylphenyl)benzenamine : Koc=44900000 (EPISUITE)

- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Koc=208800 (EPISUITE)
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Koc=258600 (EPISUITE)
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

5) Hazard to the ozone layer

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

6) Other adverse effects

- Distillates (petroleum), hydrotreated heavy paraffinic : Not available
- Trade secret : Not available
- 1-Dodecene homopolymer, hydrogenated : Not available
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not available
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not available
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not available
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not available
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not available
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not available
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not available
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not available
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not available
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not available
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-

ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not available

- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not available

13. DISPOSAL CONSIDERATIONS

1) Disposal methods

- Not available

2) Special precaution for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

1) UN No.

- Not applicable

2) Proper shipping name

- Not applicable

3) Transport hazard class(es)

- Not applicable

4) Packing group

- Not applicable

5) Marine pollutant

- Not applicable

6) Special safety response for transportation or transportation measure

- Types of Emergency Measures in Case of Fire : Not applicable
- Types of Emergency Measures in Leakage : Not applicable
- Transport regulations according to ADR/RID, AND, IMDG and ICAO/IATA : Not applicable

15. REGULATORY INFORMATION

EINECS(or ELINCS)

- Distillates (petroleum), hydrotreated heavy paraffinic : European EINECS phase-in substance
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : European EINECS phase-in substance
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : European EINECS phase-in substance
- Distillates (petroleum), solvent-dewaxed light paraffinic : European EINECS phase-in substance
- ar-Nonyl-N-(nonylphenyl)benzenamine : European EINECS phase-in substance
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : European EINECS phase-in substance
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : European EINECS phase-in substance
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable

- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

EU CLP (CLASSIFICATION) - PRODUCT : Not applicable

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

Substances restricted under REACH

- Distillates (petroleum), hydrotreated heavy paraffinic : Substances restricted under REACH
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Substances restricted under REACH
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Substances restricted under REACH
- Distillates (petroleum), solvent-dewaxed light paraffinic : Substances restricted under REACH
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Substances restricted under REACH
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Substances restricted under REACH
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

Substances subject to authorization under REACH

REACH SVHC List

Korea

○ **Occupational Safety and Health Act**

- Distillates (petroleum), hydrotreated heavy paraffinic : Substance subject to occupational exposure limits, Harmful agents subject to work environment monitoring, Harmful agents subject to workers requiring health examination
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Substance subject to occupational exposure limits, Harmful agents subject to work environment monitoring, Harmful agents subject to workers requiring health examination
- Distillates (petroleum), solvent-dewaxed light paraffinic : Substance subject to occupational exposure limits, Harmful agents subject to work environment monitoring, Harmful agents subject to workers requiring health examination
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Hazardous substance subject to control
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Substance subject to occupational exposure limits, Harmful agents subject to work environment monitoring, Harmful agents subject to workers requiring health examination
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Substance subject to occupational exposure limits
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **K-REACH**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **Chemical Control Act in Korea**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable

- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : List of substance subjected to the PRTR
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **Safety Control of Dangerous Substances Act**

- Distillates (petroleum), hydrotreated heavy paraffinic : Dangerous substance
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

U.S.A

○ **US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable

- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **CERCLA Designation of hazardous substances (40 CFR 302.4)**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **CERCLA Section 302 regulation**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **CERCLA Section 304 regulation**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **CERCLA Section 313 regulation**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

Interntional Convention on Environment

○ **Rotterdam Convention list**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable

- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **Stockholm Convention list**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **Montreal Protocol list**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable

- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

National Inventory

○ **Korea**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Not applicable
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Not applicable
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **U.S.A**

- Distillates (petroleum), hydrotreated heavy paraffinic : US TSCA phase-in substance
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : US TSCA phase-in substance
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : US TSCA phase-in substance
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : US TSCA phase-in substance
- Distillates (petroleum), solvent-dewaxed light paraffinic : US TSCA phase-in substance
- ar-Nonyl-N-(nonylphenyl)benzenamine : US TSCA phase-in substance
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : US TSCA phase-in substance
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : US TSCA phase-in substance
- Paraffin oils (petroleum), catalytic dewaxed heavy : US TSCA phase-in substance
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : US TSCA phase-in substance
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : US TSCA phase-in substance
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : US TSCA phase-in substance

○ **China**

- Distillates (petroleum), hydrotreated heavy paraffinic : China phase-in substance
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : China phase-in substance
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : China phase-in substance

- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : China phase-in substance
- Distillates (petroleum), solvent-dewaxed light paraffinic : China phase-in substance
- ar-Nonyl-N-(nonylphenyl)benzenamine : China phase-in substance
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : China phase-in substance
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : China phase-in substance
- Paraffin oils (petroleum), catalytic dewaxed heavy : China phase-in substance
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Not applicable
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

○ **Japan**

- Distillates (petroleum), hydrotreated heavy paraffinic : Not applicable
- Trade secret : Not applicable
- 1-Dodecene homopolymer, hydrogenated : Not applicable
- Lubricating oils (petroleum), (C=15-30), hydrotreated neutral oil-based : Not applicable
- Lubricating oils (petroleum), (C=20-50) hydrotreated neutral oil-based : Not applicable
- Distillates (petroleum), solvent-dewaxed light paraffinic : Not applicable
- ar-Nonyl-N-(nonylphenyl)benzenamine : Japan ENCS phase-in substance
- Phosphorodithioic acid O,O-dialkyl(C=3-14) esters zinc salts : Not applicable
- Distillates (petroleum), solvent-dewaxed heavy paraffinic : Japan ENCS phase-in substance
- 3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester : Not applicable
- Paraffin oils (petroleum), catalytic dewaxed heavy : Not applicable
- 1-Tridecanamine, N-tridecyl-, branched, reaction products with carbon disulfide 2-ethyl-N-(2-ethylhexyl)- 1-hexanamine and molybdenum oxide (MoO3) : Japan ENCS phase-in substance
- Bis(ditridecylcarbamodithioato-κS,κS']dioxodi-μ-thioxodimolybdenum, branched : Not applicable
- Molybdenum, [N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S'](N,N-ditridecylcarbamodithioato-.kappa.S,.kappa.S')dioxodi-.mu.-thioxodi-, branched : Not applicable
- Molybdenum, bis[N,N-bis(2-ethylhexyl)carbamodithioato-.kappa.S,.kappa.S']dioxodi-.mu.-thioxodi- : Not applicable

16. OTHER INFORMATION

1) Reference

- Sources of information used in preparing this SDS included one or more of the following: Internal technical data, data from OECD eChemPortal, ECHA, NITE, TOXNET, IPCS and KOSHA search results.

2) Issue Date

- 2017-09-15

3) Revision number and Last date revised

○ **Number of revised**

- 4

○ **Date of last revision**

- 2026-01-05

○ **Last Revision History**

- Revision of chemical composition and company information

4) Other

- The information contained in the Safety Data Sheet is at the date of its issuance to the best of our knowledge correct according to the data available to us. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.