


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

1.1 Product identifier

Product name	Castrol ON EV Transmission Fluid D2
Product code	470525-DE41
SDS #	470525
Product type	Liquid.

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

Identified uses
General use of lubricants and greases in vehicles or machinery-Industrial
General use of lubricants and greases in vehicles or machinery-Professional

Use of the substance/ mixture	 EV Transmission Fluid - Dry e-motor For specific application advice see appropriate Technical Data Sheet or consult our company representative.
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1.3 Details of the supplier of the safety data sheet

Supplier	Lubricants UK Limited, Chertsey Road, Sunbury On Thames, Middlesex, TW16 7BP +44 (0)345 600 8125 E-mail address: MSDSadvise@bp.com
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1.4 Emergency telephone number

EMERGENCY TELEPHONE NUMBER	Carechem: +44 (0) 1235 239 670 (24/7)
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition	Mixture
<u>Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]</u>	Aquatic Chronic 3, H412

See Section 16 for the full text of the H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements

Signal word	No signal word.
Hazard statements	H412 - Harmful to aquatic life with long lasting effects.
<u>Precautionary statements</u>	
General	P102 - Keep out of reach of children. P101 - If medical advice is needed, have product container or label at hand.
Prevention	P273 - Avoid release to the environment.
Response	Not applicable.
Storage	Not applicable.
Disposal	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients	Not applicable.
Supplemental label elements	Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH)

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SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Not applicable.
Special packaging requirements	
Containers to be fitted with child-resistant fastenings	Not applicable.
Tactile warning of danger	Not applicable.
2.3 Other hazards	
Results of PBT and vPvB assessment	Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.
Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Other hazards which do not result in classification	Defatting to the skin.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Product definition Mixture
Highly refined base oil (IP 346 DMSO extract < 3%). Synthetic base stock. Proprietary performance additives.

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	REACH #: 01-2119474889-13 EC: 276-738-4 CAS: 72623-87-1 Index: 649-483-00-5	≥50 - ≤75	Asp. Tox. 1, H304	-	[1]
1-Decene, homopolymer, hydrogenated	REACH #: 01-2119486452-34 EC: 500-183-1 CAS: 68037-01-4	≥10 - ≤25	Asp. Tox. 1, H304	-	[1]
Dec-1-ene, trimers, hydrogenated	REACH #: 01-2119493949-12 EC: 500-393-3 CAS: 157707-86-3	≥10 - ≤25	Asp. Tox. 1, H304	-	[1]
Distillates (petroleum), solvent-dewaxed heavy paraffinic	REACH #: 01-2119471299-27 EC: 265-169-7 CAS: 64742-65-0 Index: 649-474-00-6	≤3	Asp. Tox. 1, H304	-	[1]
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	REACH #: 01-2119480426-35 01-2120052100-80 CAS: 192268-65-8 Index: 607-501-00-9	<1	Repr. 2, H361d Aquatic Chronic 4, H413	-	[1]
zinc isodecyl phosphorodithioate	REACH #: 01-2120767616-43 EC: 246-618-6 CAS: 25103-54-2	≤0.3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]
2,6-di-tert-butylphenol	REACH #: 01-2119490822-33 EC: 204-884-0 CAS: 128-39-2	≤0.3	Skin Irrit. 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M [Acute] = 1 M [Chronic] = 1	[1]

See Section 16 for the full text of the H statements declared above.

Type
[1] Substance classified with a health or environmental hazard
Occupational exposure limits, if available, are listed in Section 8.

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SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention if symptoms occur.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Potential acute health effects

Inhalation	Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.
Ingestion	No known significant effects or critical hazards.
Skin contact	Defatting to the skin. May cause skin dryness and irritation.
Eye contact	No known significant effects or critical hazards.

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

Inhalation	Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
Ingestion	Ingestion of large quantities may cause nausea and diarrhoea.
Skin contact	Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Eye contact	Potential risk of transient stinging or redness if accidental eye contact occurs.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects.
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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use foam or all-purpose dry chemical to extinguish.
Unsuitable extinguishing media	Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)

5.3 Advice for firefighters

Special precautions for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid contact of spilt material and runoff with soil and surface waterways. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Not suitable

Prolonged exposure to elevated temperature

7.3 Specific end use(s)

Recommendations

See section 1.2 and Exposure scenarios in annex, if applicable.

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SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters**Occupational exposure limits**

No exposure limit value known.

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Recommended monitoring procedures

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level

No DNELs/DMELs available.

Predicted No Effect Concentration

No PNECs available

8.2 Exposure controls**Appropriate engineering controls**

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eye/face protection

Safety glasses with side shields.

Skin protection**Hand protection****General Information:**

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Recommended: Nitrile gloves.

Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.

Our recommendations on the selection of gloves are as follows:

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SECTION 8: Exposure controls/personal protection

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
 If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.
 It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove Thickness:

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
 Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Skin and body

Use of protective clothing is good industrial practice.
 Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
 Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Refer to standards:

- Respiratory protection: EN 529
- Gloves: EN 420, EN 374
- Eye protection: EN 166
- Filtering half-mask: EN 149
- Filtering half-mask with valve: EN 405
- Half-mask: EN 140 plus filter
- Full-face mask: EN 136 plus filter
- Particulate filters: EN 143
- Gas/combined filters: EN 14387

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Physical state	Liquid.																																															
Colour	Brown.																																															
Odour	Not available.																																															
Odour threshold	Not available.																																															
Melting point/freezing point	Not available.																																															
Initial boiling point and boiling range	Not available.																																															
Flammability	Not available.																																															
Lower and upper explosion limit	Not available.																																															
Flash point	Open cup: >220°C (>428°F) [Cleveland ASTM D 92]																																															
Auto-ignition temperature	<table><tr><th>Ingredient name</th><th>°C</th><th>°F</th><th>Method</th></tr><tr><td>1-Decene, homopolymer, hydrogenated</td><td>343 to 369</td><td>649.4 to 696.2</td><td>ASTM D 2159</td></tr><tr><td>Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated</td><td>343 to 369</td><td>649.4 to 696.2</td><td>ASTM D 2159</td></tr></table>	Ingredient name	°C	°F	Method	1-Decene, homopolymer, hydrogenated	343 to 369	649.4 to 696.2	ASTM D 2159	Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	343 to 369	649.4 to 696.2	ASTM D 2159																																			
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Decomposition temperature	Not available.																																															
pH	Not applicable.																																															
Kinematic viscosity	Kinematic: 32.2 mm²/s (32.2 cSt) at 40°C Kinematic: 6.3 to 6.8 mm²/s (6.3 to 6.8 cSt) at 100°C (ASTM D 445)																																															
Solubility	<table><tr><th>Media</th><th>Result</th></tr><tr><td>water</td><td>Not soluble</td></tr></table>	Media	Result	water	Not soluble																																											
Media	Result																																															
water	Not soluble																																															
Partition coefficient n-octanol/ water (log value)	Not applicable.																																															
Vapour pressure	<table><tr><th rowspan="2">Ingredient name</th><th colspan="2">Vapour Pressure at 20°C</th><th colspan="3">Vapour pressure at 50°C</th></tr><tr><th>mm Hg</th><th>kPa</th><th>Method</th><th>mm Hg</th><th>kPa</th><th>Method</th></tr><tr><td>Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based</td><td><0.08</td><td><0.011</td><td>ASTM D 5191</td><td></td><td></td><td></td></tr><tr><td>1-Decene, homopolymer, hydrogenated</td><td><0.0041</td><td><0.00055</td><td>ASTM E 1194-87</td><td></td><td></td><td></td></tr><tr><td>Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated</td><td><0.0041</td><td><0.00055</td><td>ASTM E 1194-87</td><td></td><td></td><td></td></tr><tr><td>Distillates (petroleum), hydrotreated heavy paraffinic</td><td><0.08</td><td><0.011</td><td>ASTM D 5191</td><td></td><td></td><td></td></tr><tr><td>Distillates (petroleum), solvent-dewaxed heavy paraffinic</td><td><0.08</td><td><0.011</td><td>ASTM D 5191</td><td></td><td></td><td></td></tr></table>	Ingredient name	Vapour Pressure at 20°C		Vapour pressure at 50°C			mm Hg	kPa	Method	mm Hg	kPa	Method	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	<0.08	<0.011	ASTM D 5191				1-Decene, homopolymer, hydrogenated	<0.0041	<0.00055	ASTM E 1194-87				Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	<0.0041	<0.00055	ASTM E 1194-87				Distillates (petroleum), hydrotreated heavy paraffinic	<0.08	<0.011	ASTM D 5191				Distillates (petroleum), solvent-dewaxed heavy paraffinic	<0.08	<0.011	ASTM D 5191			
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Distillates (petroleum), solvent-dewaxed heavy paraffinic	<0.08	<0.011	ASTM D 5191																																													
Density and/or Relative density	<1000 kg/m³ (<1 g/cm³) at 15°C																																															
Relative vapour density	Not available.																																															
Particle characteristics																																																
Median particle size	Not applicable.																																															

9.2 Other information

Evaporation rate	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
Pour point	-57 °C

9.2 Other information

Evaporation rate	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
Pour point	-57 °C

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SECTION 10: Stability and reactivity

10.1 Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
10.2 Chemical stability	The product is stable.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
10.4 Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
10.5 Incompatible materials	Reactive or incompatible with the following materials: oxidising materials.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Product/ingredient name	Result / Route	Test authority / Number	Species	Dose	Exposure	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	LC50 Inhalation Dusts and mists	OECD 403	Rat	>5 mg/l	4 hours	Based on studies with similar substances.
	LD50 Dermal	OECD 402	Rat	>5000 mg/kg	-	Based on studies with similar substances.
	LD50 Oral	OECD 423	Rat	>5000 mg/kg	-	Based on studies with similar substances.
1-Decene, homopolymer, hydrogenated	LD50 Dermal	OECD 402	Rat	>2000 mg/kg	-	Based on studies with similar substances.
	LD50 Oral	OECD 423	Rat	>5000 mg/kg	-	Based on studies with similar substances.
	LD50 Inhalation Dusts and mists	OECD 403	Rat	>5.2 mg/l	4 hours	-
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	LD50 Dermal	OECD 402	Rat	>2000 mg/kg	-	Based on studies with similar substances.
	LD50 Oral	OECD 420	Rat	>2000 mg/kg	-	-
Distillates (petroleum), solvent-dewaxed heavy paraffinic	LC50 Inhalation Dusts and mists	OECD 403	Rat	>5 mg/l	4 hours	Based on studies with similar substances.
	LD50 Dermal	OECD 402	Rat	>2000 mg/kg	-	Based on studies with similar substances.

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SECTION 11: Toxicological information

	LD50 Oral	OECD	401	Rat	>5000 mg/kg	-	Based on studies with similar substances.
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	LD50 Dermal	-	-	Rabbit	>2000 mg/kg	-	-
	LD50 Oral	OECD	401	Rat	>2000 mg/kg	-	-
zinc isodecyl phosphorodithioate	LD50 Dermal	OECD	402	Rat	>5000 mg/kg	-	Based on studies with similar substances.
	LD50 Oral	OECD	401	Rat	3100 mg/kg	-	Based on studies with similar substances.
2,6-di-tert-butylphenol	LD50 Dermal	-	-	Rabbit	>5000 mg/kg	-	-
	LD50 Oral	OECD	401	Rat	>5000 mg/kg	-	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
zinc isodecyl phosphorodithioate	2500	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Test authority / Test number	Species	Route / Result	Test concentration	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	OECD 405	Rabbit	Eyes - Severe irritant	-	Based on studies with similar substances.
	OECD 404	Rabbit	Skin - Non-irritant to skin.	-	Based on studies with similar substances.
1-Decene, homopolymer, hydrogenated	OECD 405	Rabbit	Eyes - Non-irritating to the eyes.	-	-
	OECD 404	Rabbit	Skin - Non-irritant to skin.	-	-
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	OECD 405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on studies with similar substances.
	OECD 404	Rabbit	Skin - Non-irritant to skin.	-	-
Distillates (petroleum), solvent-dewaxed heavy paraffinic	OECD 405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on studies with similar substances.
	OECD 404	Rabbit	Skin - Non-irritant to skin.	-	Based on studies with similar substances.
reaction mass of:	OECD 405	Rabbit	Eyes - Non-	-	-

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triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD	404	Rabbit	Skin - Non-irritant to skin.	-	-
zinc isodecyl phosphorodithioate	OECD	437	Unspecified	Eyes - Non-irritating to the eyes.	-	BCOP
	OECD	431	Unspecified	Skin - Non-irritant to skin.	-	RHE
2,6-di-tert-butylphenol	OECD	405	Rabbit	Eyes - Non-irritating to the eyes.	-	-
	OECD	404	Rabbit	Skin - Irritant	-	-

Sensitiser

Product/ingredient name	Route	Test authority / Test number		Species	Result	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	skin	OECD	406	Guinea pig	Not sensitising	Based on studies with similar substances.
1-Decene, homopolymer, hydrogenated	skin	OECD	406	Guinea pig	Not sensitising	-
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	skin	OECD	406	Guinea pig	Not sensitising	-
Distillates (petroleum), solvent-dewaxed heavy paraffinic	skin	OECD	406	Guinea pig	Not sensitising	Based on studies with similar substances.
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	skin	OECD	406	Guinea pig	Not sensitising	-
zinc isodecyl phosphorodithioate	skin	OECD	406	Guinea pig	Not sensitising	Based on studies with similar substances.
2,6-di-tert-butylphenol	skin	OECD	406	Guinea pig	Not sensitising	-

GERM CELL MUTAGENICITY

Product/ingredient name	Test authority / Test number	Cell	Type	Result	Remarks	
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Positive	Based on studies with similar substances.
	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	Based on studies with similar substances.
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
	OECD 474	-	Experiment:	Subject:	Negative	Based on studies

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	Mammalian Erythrocyte Micronucleus Test		In vivo	Mammal - species unspecified		with similar substances.
1-Decene, homopolymer, hydrogenated	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	-
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
	OECD 474 Mammalian Erythrocyte Micronucleus Test	-	Experiment: In vivo	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	Based on studies with similar substances.
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
	OECD 474 Mammalian Erythrocyte Micronucleus Test	-	Experiment: In vivo	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	Based on studies with similar substances.
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	-	Experiment: In vitro	Subject: Unspecified	Negative	Based on studies with similar substances.
	OECD 474 Mammalian Erythrocyte Micronucleus Test	-	Experiment: In vivo	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	-
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	-
	OECD 476 In vitro Mammalian Cell Gene	-	Experiment: In vitro	Subject: Mammal - species	Negative	-

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Mutation Test		unspecified				
zinc isodecyl phosphorodithioate	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	Based on studies with similar substances.
	OECD 474 Mammalian Erythrocyte Micronucleus Test	-	Experiment: In vivo	Subject: Mammal - species unspecified	Negative	Based on studies with similar substances.
2,6-di-tert-butylphenol	OECD 471 Bacterial Reverse Mutation Test	-	Experiment: In vitro	Subject: Bacteria	Negative	-
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	-	Experiment: In vitro	Subject: Mammal - species unspecified	Negative	-

Reproductive toxicity

Product/ingredient name	Test authority / Test number	Species	Route	Exposure	Developmental	Maternal toxicity	Fertility	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	OECD 421	Rat	Oral	-	Negative	Negative	Negative	Based on studies with similar substances.
1-Decene, homopolymer, hydrogenated	OECD 415	Rat	Oral	-	Negative	Negative	Negative	-
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	OECD 415	Rat	Oral	-	Negative	Negative	Negative	-
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD 421	Rat	Oral	-	Negative	Negative	Negative	-
zinc isodecyl phosphorodithioate	OECD 421	Rat	Oral	-	Negative	Negative	Negative	-
2,6-di-tert-butylphenol	OECD 421	Rat	Oral	-	Equivocal	Positive	Negative	Not classified.

Information on likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation, Eyes.

Potential acute health effects**Inhalation**

Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.

Ingestion

No known significant effects or critical hazards.

Skin contact

Defatting to the skin. May cause skin dryness and irritation.

Eye contact

No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics**Inhalation**

May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

Ingestion

No specific data.

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SECTION 11: Toxicological information**Skin contact**

Adverse symptoms may include the following:
irritation
dryness
cracking

Eye contact

No specific data.

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

Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Ingestion

Ingestion of large quantities may cause nausea and diarrhoea.

Skin contact

Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact

Potential risk of transient stinging or redness if accidental eye contact occurs.

Potential chronic health effects**General**

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

No known significant effects or critical hazards.

11.2 Information on other hazards**11.2.1 Endocrine disrupting properties**

Not available.

**Remarks - Endocrine
disruptor - Health**

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information**12.1 Toxicity**

Product/ingredient name	Test authority / Test number		Species	Type / Result	Exposure	Effects	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	OECD	202	Daphnia	Acute EL50 >10000 mg/l	48 hours	-	Based on studies with similar substances.
	OECD	203	Fish	Acute LL50 >100 mg/l	96 hours	-	Based on studies with similar substances.
	OECD	201	Algae	Acute NOEL ≥100 mg/l	72 hours	-	-
	OECD	211	Daphnia	Chronic NOEL ≥1000 mg/l	21 days	-	Based on studies with similar substances.
1-Decene, homopolymer, hydrogenated	Equivalent to OECD	201	Algae	Acute EL50 >1000 mg/l	72 hours	-	-
	OECD	202	Daphnia	Acute EL50 >1000 mg/l	48 hours	-	-
	OECD	203	Fish	Acute LL50 >1000 mg/l	96 hours	-	-
	OECD	211	Daphnia	Chronic NOELR 125 mg/l	21 days	-	-
Dec-1-ene, homopolymer, hydrogenated Dec-1-ene, oligomers, hydrogenated	OECD	201	Algae	Acute EL50 >1000 mg/l	72 hours	-	Based on studies with similar substances.

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Distillates (petroleum), solvent-dewaxed heavy paraffinic	OECD	202	Daphnia	Acute EL50 >1000 mg/l	48 hours	-	Based on studies with similar substances.
	OECD	203	Fish	Acute LL50 >1000 mg/l	96 hours	-	-
	OECD	211	Daphnia	Chronic NOELR 125 mg/l	21 days	-	Based on studies with similar substances.
	OECD	202	Daphnia	Acute EL50 >1000 mg/l	48 hours	-	Based on studies with similar substances.
	OECD	201	Algae	Acute ErL50 100 mg/l	72 hours	-	Based on studies with similar substances.
	OECD	203	Fish	Acute LL50 >100 mg/l	96 hours	-	Based on studies with similar substances.
	OECD	201	Algae	Chronic NOELR 100 mg/l	72 hours	-	Based on studies with similar substances.
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD	211	Daphnia	Chronic NOELR 10 to 1000 mg/l	21 days	-	Based on studies with similar substances.
	OECD	201	Algae	Acute EC50 >100 mg/l	72 hours	-	-
	OECD	202	Daphnia	Acute EC50 >100 mg/l	48 hours	-	-
	OECD	203	Fish	Acute LC50 >100 mg/l	96 hours	-	-
	OECD	201	Algae	Chronic NOEC >100 mg/l	72 hours	-	-
	OECD	211	Daphnia	Chronic NOEC 0.026 mg/l	21 days	-	-
zinc isodecyl phosphorodithioate	OECD	210	Fish	Chronic NOEC 0.0044 mg/l	87 days	-	-
	OECD	202	Daphnia	Acute EC50 0.2 mg/l	48 hours	-	-
	OECD	201	Algae	Acute ErC50 >1.6 mg/l	72 hours	-	-
2,6-di-tert-butylphenol	OECD	203	Fish	Acute LC50 >0.28 mg/l	96 hours	-	-
	OECD	201	Algae	Acute EL50 1.2 mg/l	96 hours	-	-
	OECD	202	Daphnia	Acute EL50 0.45 mg/l	48 hours	-	-
	OECD	203	Fish	Acute LC50 1.4 mg/l	96 hours	-	-

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OECD	201	Algae	Chronic NOEC 0.64 mg/l	96 hours	-	-
OECD	211	Daphnia	Chronic NOEC 0.035 mg/l	21 days	-	-

Environmental hazards Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Partially biodegradable.

Product/ingredient name	Test authority / Test number	Result - Exposure	Remarks
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	OECD 301F	31 % - Inherent - 28 days	Based on studies with similar substances.
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD 301D	0 % - Not readily - 28 days	-
zinc isodecyl phosphorodithioate	OECD 301b	1 % - Not readily - 28 days	Based on studies with similar substances.
2,6-di-tert-butylphenol	OECD 301B	24 % - Not readily - 28 days	-

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	LogP _{ow}	BCF	Potential
Dec-1-ene, homopolymer, hydrogenated	>10	-	high
Dec-1-ene, trimers, hydrogenated	>10	-	high
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	4.8 to 8.8	-	high
2,6-di-tert-butylphenol	4.5	-	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

12.6 Endocrine disrupting properties Not available.

Remarks - Endocrine disruptor - Environment Not available.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

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

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SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product****Methods of disposal**

Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Hazardous waste

Yes.

European waste catalogue (EWC)

Waste code	Waste designation
13 02 08*	other engine, gear and lubricating oils

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging**Methods of disposal**

Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

References

Commission 2014/955/EU
Directive 2008/98/EC

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

14.6 Special precautions for user

Not available.

14.7 Maritime transport in bulk according to IMO instruments

Not available.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulation (EC) No. 1907/2006 (REACH)****Annex XIV - List of substances subject to authorisation****Annex XIV**

None of the components are listed.

Substances of very high concern

None of the components are listed.

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SECTION 15: Regulatory information**EU Regulation (EC) No. 1907/2006 (REACH)**

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other regulations**REACH Status**

For the REACH status of this product please consult your company contact, as identified in Section 1.

United States inventory (TSCA 8b)

All components are active or exempted.

Australia inventory (AIIIC)

All components are listed or exempted.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

All components are listed or exempted.

Japan inventory (CSCL)

All components are listed or exempted.

Korea inventory (KECI)

All components are listed or exempted.

Philippines inventory (PICCS)

All components are listed or exempted.

Taiwan Chemical Substances Inventory (TCSI)

All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

EU - Water framework directive - Priority substances

None of the components are listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for one or more of the substances within this mixture. A Chemical Safety Assessment has not been carried out for the mixture itself.

SECTION 16: Other information**Abbreviations and acronyms**

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 CAS = Chemical Abstracts Service
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 CSA = Chemical Safety Assessment
 CSR = Chemical Safety Report
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EINECS = European Inventory of Existing Commercial chemical Substances
 ES = Exposure Scenario
 EUH statement = CLP-specific Hazard statement
 EWC = European Waste Catalogue
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as

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SECTION 16: Other information

modified by the Protocol of 1978. ("Marpol" = marine pollution)
 OECD = Organisation for Economic Co-operation and Development
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
 RRN = REACH Registration Number
 SADT = Self-Accelerating Decomposition Temperature
 SVHC = Substances of Very High Concern
 STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
 STOT-SE = Specific Target Organ Toxicity - Single Exposure
 TWA = Time weighted average
 UN = United Nations
 UVCB = Complex hydrocarbon substance
 VOC = Volatile Organic Compound
 vPvB = Very Persistent and Very Bioaccumulative
 Varies = may contain one or more of the following 64741-88-4 / RRN 01-2119488706-23, 64741-89-5 / RRN 01-2119487067-30, 64741-95-3 / RRN 01-2119487081-40, 64741-96-4 / RRN 01-2119483621-38, 64742-01-4 / RRN 01-2119488707-21, 64742-44-5 / RRN 01-2119985177-24, 64742-45-6, 64742-52-5 / RRN 01-2119467170-45, 64742-53-6 / RRN 01-2119480375-34, 64742-54-7 / RRN 01-2119484627-25, 64742-55-8 / RRN 01-2119487077-29, 64742-56-9 / RRN 01-2119480132-48, 64742-57-0 / RRN 01-2119489287-22, 64742-58-1, 64742-62-7 / RRN 01-2119480472-38, 64742-63-8, 64742-65-0 / RRN 01-2119471299-27, 64742-70-7 / RRN 01-2119487080-42, 72623-85-9 / RRN 01-2119555262-43, 72623-86-0 / RRN 01-2119474878-16, 72623-87-1 / RRN 01-2119474889-13

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H361d Suspected of damaging the unborn child.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.
 EUH066 Repeated exposure may cause skin dryness or cracking.

Full text of classifications [CLP/GHS]

Aquatic Acute 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
 Aquatic Chronic 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
 Aquatic Chronic 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4
 Asp. Tox. 1 ASPIRATION HAZARD - Category 1
 Repr. 2 REPRODUCTIVE TOXICITY - Category 2
 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2

History

Date of issue/ Date of revision 11/09/2023.
Date of previous issue 06/06/2023.
Prepared by Product Stewardship

✔ Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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Industrial

Identification of the substance or mixture

Product definition	Mixture
Code	470525-DE41
Product name	Castrol ON EV Transmission Fluid D2

Section 1: Title

Short title of the exposure scenario	General use of lubricants and greases in vehicles or machinery - Industrial
List of use descriptors	Identified use name: General use of lubricants and greases in vehicles or machinery-Industrial Process Category: PROC01, PROC08b, PROC09, PROC02 Sector of end use: SU03 Subsequent service life relevant for that use: No. Environmental Release Category: ERC04, ERC07 Specific Environmental Release Category: ATIEL-ATC SPERC 4.Biv1

Processes and activities covered by the exposure scenario	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.
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Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

No exposure scenario is presented because the product is not classified for Human Health

Contributing scenarios: Operational conditions and risk management measures

Section 2.2: Control of environmental exposure

Amounts used:

EU tonnage of risk determining substance per year:	2.63E+3 Tonnes/year
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Frequency and duration of use:

Emission days	300
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Environment factors not influenced by risk management:

Local freshwater dilution factor	10
Local marine water dilution factor	100

Other conditions affecting environmental exposure:

Negligible wastewater emissions as process operates without water contact.

Release fraction to air (after typical onsite RMMs)	5.00E-05
Release fraction to soil from process (after typical onsite RMMs)	0
Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan)	5.00E-11

Technical conditions and measures at process level (source) to prevent release:

Common practices vary across sites thus conservative process release estimates used.

Castrol ON EV Transmission Fluid D2

General use of lubricants and greases in vehicles or machinery - Industrial

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Prevent discharge of undissolved substance to or recover from onsite wastewater. User sites are assumed to be provided with oil/water separators and waste water to be discharged via a sewage treatment plant
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant:	
Estimated substance removal from wastewater via on-site sewage treatment	0.09
Assumed domestic sewage treatment plant flow rate (m3/d)	2.00E+3
Maximum allowable site tonnage (M _{Safe}) based on release following total wastewater treatment removal as product:	1587.9
Conditions and measures related to external treatment of waste for disposal:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Used ECETOC TRA model (May 2010 release).
Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	No exposure scenario is presented because the product is not classified for Human Health

Section 4: Guidance to check compliance with the exposure scenario

Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.ATIEL.org/REACH_GES
Health	No exposure scenario is presented because the product is not classified for Human Health

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition	Mixture
Code	470525-DE41
Product name	Castrol ON EV Transmission Fluid D2

Section 1: Title

Short title of the exposure scenario	General use of lubricants and greases in vehicles or machinery - Professional
List of use descriptors	Identified use name: General use of lubricants and greases in vehicles or machinery-Professional Process Category: PROC01, PROC02, PROC08b, PROC09 Sector of end use: SU03 Subsequent service life relevant for that use: No. Environmental Release Category: ERC04, ERC07 Specific Environmental Release Category: ATIEL-ATC SPERC 4.Biv1

Processes and activities covered by the exposure scenario	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.
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Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

No exposure scenario is presented because the product is not classified for Human Health

Contributing scenarios: Operational conditions and risk management measures

Section 2.2: Control of environmental exposure

Amounts used:

EU tonnage of risk determining substance per year:	2.63E+3 Tonnes/year
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Frequency and duration of use:

Emission days	300
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Environment factors not influenced by risk management:

Local freshwater dilution factor	10
Local marine water dilution factor	100

Other conditions affecting environmental exposure:

Release fraction to air (after typical onsite RMMs)	5.00E-05
Release fraction to soil from process (after typical onsite RMMs)	0
Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan)	5.00E-11

Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
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Castrol ON EV Transmission Fluid D2

General use of lubricants and greases in vehicles or machinery - Professional

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Prevent discharge of undissolved substance to or recover from onsite wastewater. User sites are assumed to be provided with oil/water separators and waste water to be discharged via a sewage treatment plant
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant:	
Estimated substance removal from wastewater via on-site sewage treatment	0.09
Assumed domestic sewage treatment plant flow rate (m ³ /d)	2.00E+3
Maximum allowable site tonnage (M _{Safe}) based on release following total wastewater treatment removal as product:	20.1
Conditions and measures related to external treatment of waste for disposal:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Used ECETOC TRA model (May 2010 release).
Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	No exposure scenario is presented because the product is not classified for Human Health

Section 4: Guidance to check compliance with the exposure scenario

Environment	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see www.ATIEL.org/REACH_GES
Health	No exposure scenario is presented because the product is not classified for Human Health