



## Product Data

# Castrol Longtime<sup>®</sup> PD 1 + PD 2

**Castrol Longtime PD 1 + 2** - universal solid free extreme pressure greases for long term lubrication with wide application range.

**MICROFLUX TRANS<sup>®</sup>** (**TRANS** = **TR**iple **A**ction **N**on-sacrificial **S**urface engineering) improves friction surfaces to an extent not possible with normal machining processes and conventional EP lubricants. In a tribological system the polarized MICROFLUX TRANS<sup>®</sup> additives instantaneously create a passive film on friction surfaces before friction occurs. At a given load level, the MICROFLUX TRANS additives release compounds forming a resistant protective layer on friction surfaces.

Under severe load, components of the MICROFLUX TRANS additive combination are activated and diffuse into the surfaces initiating an improvement of their friction characteristics through plastic deformation. The organic reaction products become a component of the tribopolymer system. Unlike the case with conventional lubricants, the tribopolymers formed by MICROFLUX TRANS are long-chained compounds with excellent lubricity and adhesion. The load carrying area is improved, a hydrodynamic lubrication film is easier to maintain. This unique physio-chemical reaction is CASTROL surface engineering and achieves a non-sacrificial micro-smoothing of the friction surfaces.

The MICROFLUX TRANS additive technology provides optimum wear protection and an extremely low coefficient of friction even under extremes of pressure, vibration, shock loads, at high or low speeds or varying micro-smoothing of the friction surfaces.

### Features

- reduction of running-in period, suitable for lifetime lubrication
- surface improvement to an extent not possible before
- outstanding load carrying capacity
- notably decreased coefficient of friction resulting in energy savings
- optimum wear protection in high load range
- smoothing of existing pitting on damaged components
- reduction of noise levels
- excellent rust protection, largely prevents fretting corrosion
- compatible with all conventional sealing materials and nonferrous metals
- easily pumpable in central lubrication systems
- resistant to cold and hot water



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- temperature range:
  - for LONGTIME PD 1: -35°C/-31°F to +130°C/+266°F
  - for LONGTIME PD 2: -35°C/-31°F to +140°C/+284°F

### Uses

**For a large field of applications and various difficult operating conditions, i.e.,** extreme pressures, vibration, shock loads, wide temperature range and components that are prone to fretting corrosion. For constant velocity (CV) joints, ball joints, ball spindles.

For bearings with rotating outer ring and high stresses due to centrifugal load, e.g. in spreader rolls, roll neck bearings in steel mills; for bearings with changing rotational directions or slewing movements.

**For long-term and lifetime lubrication of heavily loaded bearings in** motor vehicles, wheel hubs, shaker screens, wood and metal routers, machine tool spindles, spinning spindles, disk drives, high speed looms, robots.

For high speeds up to Dn factors of 1,000,000.

Cost-benefit offered by MICROFLUX TRANS additive technology:

- extended lifetime of machine elements and wear parts, lower maintenance and labor costs by minimized wear and friction
- full load operation within shortest time, virtually eliminating the running-in period
- lower costs for lubricants and waste oil disposal because of significant extensions of both service life and relubrication intervals
- energy savings due to reduced coefficient of friction, lower temperature of lubricant and component, improvement in operating efficiency
- product consolidation, i.e. simplification and reduction of lubes and spare parts
- reduction of noise resulting from high frequency stick-slip
- for "life" lubrication in some applications

### Application

Specifications of antifriction bearing manufacturers must be followed. Maximum performance only if applied unmixed. CASTROL LONGTIME PD greases allow production consolidation of previously used lubricating greases; their high efficiency ensures economical use and hence a reduction of lubricant expenses.

**Castrol Industrial Americas**  
150 W. Warrenville Road  
Naperville, IL 60563  
**Tel** (877) 641 1600  
**Fax** (877)648 9801



## Product Data

### Typical Characteristics

	<u>PD 1</u>	<u>PD 2</u>
Consistency / LGI Grade	1	2
Color	Brown	Brown
Thickener Type	Lithium	Lithium
Specific gravity	0.900	0.886
Worked Penetration, ASTM D 217, mm/10 Pw60	310-340	265-295
Prolonged worked penetration Pw 100,000 - Pw 60, mm/10, pointschange	< 12	< 17
Base Oil Viscosity, ASTM D 445 @ 40°C / 104°F, mm <sup>2</sup> /s	93.9	94.9
Dropping Point, ASTM D 2265, °C/°F	180/356	180/356
Flow Pressure, DIN 51805, mbar: @-35°C/-31°F	<1220	<1580
Water Resistance, DIN 51807, T. 1 @ 90°C/194°F	1	1
SRV test run, test mode 5ae: (300 N, 50°C/122°F, ball/area/2h) Coefficient of friction	0.063	0.070
Wear, DIN E51834 a. Ball/scar Ø (mm)	0.55	0.55
b. Profile depth Pt (µm)	1.0	1.0

Subject to usual manufacturing tolerances.

All reasonable care has been taken to ensure that this information is accurate as of the date of printing. Nevertheless, such information may be affected by changes in the blend formulation occurring subsequent to the date of printing. Material Safety Data Sheets are available for all Castrol products. The MSDS must be consulted for appropriate information regarding storage, safe handling and disposal of a product.

**Castrol Industrial Americas**  
150 W. Warrenville Road  
Naperville, IL 60563  
**Tel (877) 641 1600**  
**Fax (877)648 9801**



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

### 1.1 Product identifier

<b>Product name</b>	Longtime PD 2
<b>Product code</b>	453840-DE03
<b>SDS no.</b>	453840
<b>Historic SDS no.</b>	62002-AG
<b>Product type</b>	Grease

### 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

<b>Use of the substance/ mixture</b>	Grease 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

<b>Supplier</b>	Castrol (U.K.) Limited Wakefield House Pipers Way Swindon Wiltshire, SN3 1RE United Kingdom Tel.: +44 (0)1793 512712 Fax.: +44 (0)1793 486083
<b>E-mail address</b>	MSDSadvice@bp.com

### 1.4 Emergency telephone number

<b>EMERGENCY TELEPHONE NUMBER</b>	Carechem: +44 (0) 1235 239 670 (24 hours)
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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

<b>Product definition</b>	Mixture
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#### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

<b>Classification</b>	R43 R52/53
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**Human health hazards** May cause sensitisation by skin contact.

**Environmental hazards** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or 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

#### Hazard symbol or symbols



#### Indication of danger

Irritant

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**SECTION 2: Hazards identification**

<b>Risk phrases</b>	R43- May cause sensitisation by skin contact. R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<b>Safety phrases</b>	S28- After contact with skin, wash immediately with plenty of soap and water. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
<b>Hazardous ingredients</b>	Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)
<b>Supplemental label elements</b>	Not applicable.
<b>Special packaging requirements</b>	
<b>Containers to be fitted with child-resistant fastenings</b>	Not applicable.
<b>Tactile warning of danger</b>	Not applicable.

**2.3 Other hazards**

<b>Other hazards which do not result in classification</b>	Defatting to the skin. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.
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**SECTION 3: Composition/information on ingredients**

**Substance/mixture** Mixture  
Highly refined mineral oil and additives. Thickening agent.

**Classification**

Product/ingredient name	Identifiers	%	67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	Type
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	REACH #: 01-0000016000-92 EC: 412-780-3 Index: 042-004-00-5	1 - <2.5	Xi; R38 R43 N; R51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
alkylbenzene	EC: 272-891-6 / 285-591-5 CAS: 68919-17-5 / 85117-41-5	1 - <5	Not classified.	Aquatic Chronic 4, H413	[1]
Phosphorous acid, decyl diphenyl ester.	EC: 247-777-4 CAS: 26544-23-0	0.25 - <1	Xi; R38 R43 N; R51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411	[1]
zinc bis[O-(2-ethylhexyl)] bis[O-(isobutyl)] bis (dithiophosphate)	EC: 247-810-2 CAS: 26566-95-0	0.25 - <1	Xi; R41 N; R51/53	Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1]

See Section 16 for the full text of the R-phrases declared above.

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

**Type**

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

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

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

<b>Eye contact</b>	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.
<b>Skin contact</b>	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. In the event of any complaints or symptoms, avoid further exposure.

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## SECTION 4: First aid measures

<b>Inhalation</b>	If inhaled, remove to fresh air. Get medical attention if symptoms appear. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Ingestion</b>	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.
<b>Protection of first-aiders</b>	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

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

### 4.3 Indication of any immediate medical attention and special treatment needed

<b>Notes to physician</b>	<p>In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Treatment should in general be symptomatic and directed to relieving any effects.</p> <p>Note: High Pressure Applications</p> <p>Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.</p>
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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

<b>Hazards from the substance or mixture</b>	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous combustion products</b>	<p>☑ Combustion products may include the following:</p> <p>carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)</p> <p>metal oxide/oxides</p> <p>nitrogen oxides (NO, NO<sub>2</sub> etc.)</p> <p>sulphur oxides (SO, SO<sub>2</sub>, etc.)</p>

### 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. 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.
<b>Special protective equipment for fire-fighters</b>	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.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	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. Do not breathe vapour or mist. Ensure good ventilation. Put on appropriate personal protective equipment.
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## SECTION 6: Accidental release measures

**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.

### 6.3 Methods and materials for containment and cleaning up

**Small spill** Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Use a tool to scoop up solid or absorbed material and place into appropriate labelled waste container.

**Large spill** Immediately contact emergency personnel. 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. If emergency personnel are unavailable, contain spilt material. Suction or scoop the spill into appropriate disposal or recycling vessels, then cover spill area with oil absorbent. 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. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. 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 and use only in equipment/containers designed for use with this product. 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. Do not store in unlabelled containers. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10).

**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.

## 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

For information and guidance, the ACGIH values are included. For further information on these please consult your supplier. 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.

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## SECTION 8: Exposure controls/personal protection

### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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 airborne concentrations of vapours 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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Respiratory protection

Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure.

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

Wear protective gloves if prolonged or repeated contact is likely.

Wear chemical resistant gloves.

Recommended: Nitrile gloves.

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

##### 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.



## SECTION 8: Exposure controls/personal protection

<b>Environmental exposure controls</b>	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.
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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Grease
<b>Colour</b>	Brown. [Dark]
<b>Odour</b>	Mild
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Drop Point</b>	>180 °C
<b>Flash point</b>	Open cup: >170°C (>338°F)
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	<0.01 kPa (<0.075 mm Hg) at 20°C
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Density</b>	<1000 kg/m <sup>3</sup> (<1 g/cm <sup>3</sup> ) at 20°C
<b>Solubility(ies)</b>	insoluble in water.
<b>Partition coefficient: n-octanol/water</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

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

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Information on the likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation.

#### Potential acute health effects

**Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Ingestion** No known significant effects or critical hazards.

**Skin contact** May cause skin dryness and irritation. May cause sensitisation by skin contact.

**Eye contact** No known significant effects or critical hazards.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Inhalation** No specific data.

**Ingestion** No specific data.

**Skin contact** Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking

**Eye contact** No specific data.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

**Inhalation** Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.

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

**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.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Environmental hazards** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 12.2 Persistence and degradability

Expected to be biodegradable.

### 12.3 Bioaccumulative potential

Not available.

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Mobility** Non-volatile. Grease. insoluble in water.

### 12.5 Results of PBT and vPvB assessment

**PBT** Not applicable.

**vPvB** Not applicable.

### 12.6 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

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

##### Hazardous waste

Yes.

##### European waste catalogue (EWC)

Waste code	Waste designation
12 01 12*	spent waxes and fats

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

Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Recycle, if possible.

Waste code	European waste catalogue (EWC)
15 01 10*	packaging containing residues of or contaminated by dangerous substances

##### 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.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN 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.

## 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

##### Substances of very high concern

None of the components are listed.

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## SECTION 15: Regulatory information

**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

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

#### United States inventory (TSCA 8b)

All components are listed or exempted.

#### Australia inventory (AICS)

At least one component is not listed.

#### Canada inventory

At least one component is not listed.

#### China inventory (IECSC)

All components are listed or exempted.

#### Japan inventory (ENCS)

At least one component is not listed.

#### Korea inventory (KECI)

All components are listed or exempted.

#### Philippines inventory (PICCS)

At least one component is not listed.

### 15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

## 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  
 DPD = Dangerous Preparations Directive [1999/45/EC]  
 DSD = Dangerous Substances Directive [67/548/EEC]  
 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 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as 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  
 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

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**SECTION 16: Other information**

**Full text of abbreviated H statements**

H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.  
 H411 Toxic to aquatic life with long lasting effects.  
 H413 May cause long lasting harmful effects to aquatic life.

**Full text of classifications [CLP/GHS]**

Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2  
 Aquatic Chronic 4, H413 AQUATIC TOXICITY (CHRONIC) - Category 4  
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
 Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1

**Full text of abbreviated R phrases**

R41- Risk of serious damage to eyes.  
 R38- Irritating to skin.  
 R43- May cause sensitisation by skin contact.  
 R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Full text of classifications [DSD/DPD]**

Xi - Irritant  
 N - Dangerous for the environment

**History**

**Date of issue/ Date of revision**

15/11/2012.

**Date of previous issue**

25/06/2012.

**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.

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

<b>Product definition</b>	Mixture
<b>Code</b>	453840-DE03
<b>Product name</b>	Longtime PD 2

### Section 1:: Title

<b>Short title of the exposure scenario</b>	General use of lubricants and greases in vehicles or machinery - Industrial - B-B6.4 (i)
<b>List of use descriptors</b>	<p><b>Identified use name:</b> General use of lubricants and greases in vehicles or machinery-Industrial</p> <p><b>Process Category:</b> PROC01, PROC02, PROC08b, PROC09</p> <p><b>Sector of end use:</b> SU03</p> <p><b>Subsequent service life relevant for that use:</b> No.</p> <p><b>Environmental Release Category:</b> ERC04, ERC07</p> <p><b>Specific Environmental Release Category:</b> ATIEL-ATC SPERC 4.Biv1</p>

<b>Processes and activities covered by the exposure scenario</b>	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

##### Product characteristics:

**Physical state:** Liquid, vapour pressure < 0.5 kPa

**Concentration of substance in product:** Covers use of substance/product up to 100 % (unless stated differently)

**Frequency and duration of use:** Covers daily exposures up to 8 hours (unless stated differently).

**Other given operational conditions affecting workers exposure:** Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

#### Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities:

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product also via contamination on hands.

General exposures (closed systems):

No other specific measures identified.

Initial factory fill of equipment Use in contained systems:

No other specific measures identified.

Initial factory fill of equipment (open systems):

Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 4 hours.

Operation of equipment containing engine oils and similar Use in contained systems:

No other specific measures identified.

Equipment cleaning and maintenance:

Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature):

Drain down and flush system prior to equipment break-in or maintenance. Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely. Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain-downs in sealed storage pending disposal

**Longtime PD 2**

**General use of lubricants and greases in vehicles or machinery - Industrial - B-B6.4 (i)**

or for subsequent recycle.

Storage:  
Store substance within a closed system.

## Section 2.2:: Control of environmental exposure

### Amounts used:

**EU tonnage of risk determining substance per year:** 2.63E+3 Tonnes/year

### Frequency and duration of use:

**Emission Days (days/year):** 300

### Environment factors not influenced by risk management:

**Local freshwater dilution factor:** 10

**Local marine water dilution factor:** 100

**Other given operational conditions affecting environmental exposure:** Negligible wastewater emissions as process operates without water contact.

**Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan)** 2.00E-11

**Technical conditions and measures at process level (source) to prevent release:** Common practices vary across sites thus conservative process release estimates used.

**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. sludge should be incinerated, contained or reclaimed.

### Conditions and measures related to municipal sewage treatment plant:

**Estimated substance removal from wastewater via on-site sewage treatment (%):** 69.1

**Assumed domestic sewage treatment plant flow rate (m<sup>3</sup>/d)** 2.00E+3

**Maximum allowable site tonnage (M<sub>Safe</sub>) based on release following total wastewater treatment removal (kg/d) as product:** 7594049

**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

### 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):** The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## 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](http://www.ATIEL.org/REACH_GES)

**Health**

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



## Annex to the extended Safety Data Sheet (eSDS)

Professional

### Identification of the substance or mixture

Product definition	Mixture
Code	453840-DE03
Product name	Longtime PD 2

### Section 1:: Title

Short title of the exposure scenario	General use of lubricants and greases in vehicles or machinery - Professional - B-B6.4 (p)
List of use descriptors	<b>Identified use name:</b> General use of lubricants and greases in vehicles or machinery-Professional <b>Process Category:</b> PROC01, PROC02, PROC08a, PROC08b, PROC20 <b>Sector of end use:</b> SU22 <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC09a, ERC09b <b>Specific Environmental Release Category:</b> ESVOC SpERC 9.6b.v1

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

##### Product characteristics:

**Physical state:** Liquid, vapour pressure < 0.5 kPa

**Concentration of substance in product:** Covers use of substance/product up to 100 % (unless stated differently)

**Frequency and duration of use:** Covers daily exposures up to 8 hours (unless stated differently).

**Other given operational conditions affecting workers exposure:** Assumes use at not more than 20°C above ambient temperature, unless stated differently.  
Assumes a good basic standard of occupational hygiene is implemented.

#### Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities:

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product also via contamination on hands.

Operation of equipment containing engine oils and similar Use in contained systems:  
No other specific measures identified.

Material transfers Non-dedicated facility:

Avoid carrying out activities involving exposure for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Equipment cleaning and maintenance Dedicated facility:

Drain down system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Storage:

Store substance within a closed system.

## Section 2.2:: Control of environmental exposure

### Amounts used:

EU tonnage of risk determining substance per year: 5.39 Tonnes/year

### Frequency and duration of use:

Emission Days (days/year): 365

### Environment factors not influenced by risk management:

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

### Other given operational conditions affecting environmental exposure:

Negligible wastewater emissions as process operates without water contact.

Release fraction to wastewater from process (after typical onsite RMMs and before sewage treatment plan) 5.00E-04

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

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

### 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.

### Organisational measures to prevent/limit release from site:

Do not apply industrial sludge to natural soils. sludge should be incinerated, contained or reclaimed.

### Conditions and measures related to municipal sewage treatment plant:

Estimated substance removal from wastewater via on-site sewage treatment (%): 69.1

Assumed domestic sewage treatment plant flow rate (m<sup>3</sup>/d) 2.00E+3

Maximum allowable site tonnage (M<sub>safe</sub>) based on release following total wastewater treatment removal (kg/d) as product: 19111

### 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

### 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): The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## 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](http://www.ATIEL.org/REACH_GES)

### Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.