SAFETY DATA SHEET

1 . Identification of the substance/preparation and company/undertaking

Product name **Castrol Pyroplex Protection ES 2**

SDS no. 464887

Use of the substance/mixture Grease
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Supplier Castrol India Limited
Technopolis Knowledge Park
Mahakali Caves Road
Andheri (East), MUMBAI 400 093
Maharashtra, India

Contact : +91 22 66984100

EMERGENCY TELEPHONE NUMBER Toll free: 000800 100 7479 (for use in India only - 24 hours)
Carechem Singapore: +65 3158 1198 (24 hours)

E-mail address MSDSadvice@bp.com

2 . Hazards identification

This preparation is classified as dangerous according to Directive 1999/45/EC as amended and adapted.

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

Additional hazards 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.

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

3 . Composition/information on ingredients

Highly refined base oil (IP 346 DMSO extract < 3%). Thickening agent. Proprietary performance additives.

Chemical name	CAS no.	%	EINECS / ELINCS.	Classification	
Amines, N-tallow alkyltrimethylenedi-, oleates	61791-53-5	1 - 5	263-186-4	Xi; R36/38	[1]
Mixture of amide carboxylate and amines	Proprietary	1 - 5		Xi; R36/38	[1]
Benzenamine, N-phenyl-, reaction products with 2,4, 4-trimethylpentene	68411-46-1	1 - 5	270-128-1	R52/53	[1]
Zinc alkyl dithiophosphate	68649-42-3	1 - 5	272-028-3	Xi; R36/38 N; R51/53	[1]
1H-Benzotriazole-1Methanamine, N,N-Bis(2-Ethylhexyl)-AR-Methyl-	94270-86-7	0.1 - 1		Xi; R38 R43 N; R51/53	[1]

See Section 16 for the full text of the R-phrases 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
[5] Substance of equivalent concern

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

4 . 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 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.

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.

Notes to physician
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.
Note: High Pressure Applications
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.

5 . Fire-fighting measures

Extinguishing media

Suitable
In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

Not suitable
Do not use water jet.

Hazardous decomposition products
Combustion products may include the following:
carbon dioxide
carbon monoxide
nitrogen oxides
sulphur oxides
phosphorus oxides
metal oxide/oxides

Unusual fire/explosion hazards
In a fire or if heated, a pressure increase will occur and the container may burst.

Special fire-fighting procedures
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.

Protection of 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.

6 . Accidental release measures

Personal precautions - 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. Do not breathe vapour or mist. Ensure good ventilation. Put on appropriate personal protective equipment.

Personal precautions - 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".

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).

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. 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.

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.

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.

7 . Handling and storage

Handling - Protective measures
Put on appropriate personal protective equipment. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

Handling - 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.

Storage
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

8 . Exposure controls/personal protection

Occupational exposure limits
This product does not have any assigned OELs.

Exposure controls

Occupational exposure 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.

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.

Personal protective equipment

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.

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:

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.

Eye protection Safety glasses with side shields.

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.

Personal protective equipment (Pictograms)

9 . Physical and chemical properties

General information

Appearance

Physical state Grease

Colour Purple. [Light]

Odour Bland.

Important health, safety and environmental information

Flash point Open cup: 256°C (492.8°F) [Cleveland.]

Viscosity Kinematic: 320 mm^2/s (320 cSt) at 40°C
Kinematic: 43.5 mm^2/s (43.5 cSt) at 100°C

Density 880 kg/m^3 (0.88 g/cm^3) at 16°C

Solubility insoluble in water.

10 . Stability and reactivity

Stability The product is stable.

Conditions to avoid Avoid all possible sources of ignition (spark or flame).

Materials to avoid Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Acute toxicity

Effects and symptoms

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

Skin May cause skin dryness and irritation.

Inhalation Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.

Ingestion Ingestion of large quantities may cause nausea and diarrhoea.

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

12 . Ecological information

Persistence/degradability Expected to be biodegradable.

Mobility Spillages are unlikely to penetrate the soil.

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

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

Other ecological information This product is unlikely to disperse in water.

13 . Disposal considerations

Disposal considerations / Waste information The generation of waste should be avoided or minimised wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Unused product

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.

14 . Transport information

Not classified as hazardous for transport (ADR/RID, ADNR, IMDG, ICAO/IATA)

15 . Regulatory information

Label requirements

Risk phrases R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Contains Mixture of amide carboxylate and amines
Amines, N-tallow alkyltrimethylenedi-, oleates
Zinc alkyl dithiophosphate

Additional warning phrases Contains 1H-Benzotriazole-1Methanamine, N,N-Bis(2-Ethylhexyl)-AR-Methyl-. May produce an allergic reaction.

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 listed or exempted.

Australia inventory (AICS) 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 (ENCS) 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 inventory (CSNN) Not determined.

16 . Other information

Full text of R-phrases referred to in sections 2 and 3 R38- Irritating to skin.
R36/38- Irritating to eyes and 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.

History

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Prepared by Product Stewardship Group

Notice to reader

Indicates information that has changed from previously issued version.

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