SAFETY DATA SHEET

Perfecto HT 5

Section 1. Identification

Product name Perfecto HT 5

Product code 452472-AU22

SDS no. 452472

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

Product type Liquid.

Supplier Castrol New Zealand Limited
73 Remuera Road
Newmarket
Auckland, New Zealand

www.castrol.com/nz
Technical Helpline 0800 10 40 60

Emergency telephone number 0800 243643 (0800 CHEMHELP) (NZ use only)

New Zealand National Poisons Centre 0800 764 766 National Poison Centre

Section 2. Hazards identification

HSNO Classification Not classified.

This material is not classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.

This material is not classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

Routes of entry Dermal contact. Eye contact. Inhalation.

GHS label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Other hazards which do not result in classification Defatting to the skin.
Contact with hot product may cause burns.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Highly refined base oil (IP 346 DMSO extract < 3%).

Ingredient name	%	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	50 - 95	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	50 - 95	64742-65-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary first aid measures

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. Get medical attention if symptoms occur.

Skin contact
Wash skin thoroughly with soap and water or use recognised skin cleanser. Hot Product - Flood skin with cold water to dissipate heat, cover with clean cotton or gauze, obtain medical advice immediately.
Cold Product - Wash contaminated skin with soap and water. Remove contaminated clothing and wash underlying skin as soon as reasonably practicable.

Eye contact
Hot product - Flood with water to dissipate heat. In the event of any product remaining, do not try to remove it other than by continued irrigation with water. Obtain medical attention immediately.
Cold product - Wash eye thoroughly with copious quantities of water, ensuring eyelids are held open. Obtain medical advice if any pain or redness develops or persists.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician
Treatment should in general be symptomatic and directed to relieving any effects.

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training.

Section 5. Firefighting measures

Extinguishing media

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

Not suitable
Do not use water jet.

Specific hazards arising from the chemical
During use heat transfer oils may be thermally degraded leading to the formation of volatile hydrocarbons with flash points considerably lower than the original product. It is therefore essential that the system is not drained while hot unless an inert gas system is used to displace flammable gaseous residues. Adequate ventilation is essential during draining operations as hot oil will fume.
The temperature at which spent product is drained is a compromise between the need to have the oil sufficiently hot to facilitate drainage, the need to avoid fuming and the dangers of fire from degraded oil with a low flash point. It is recommended therefore that spent oil is drained at a temperature of less than 100°C. During system filling and venting, care should be taken to ensure that hot oil is not pumped through the expansion tank. A failure to prevent this could, under certain conditions, lead to the creation of a flammable atmosphere in the expansion tank. As the expansion tank is being filled it is essential that the gases and vapours formed should be free to vent to an open atmosphere where they can quickly disperse. Oil soaked lagging may spontaneously ignite and should be replaced by fresh lagging as soon as possible. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use. 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)

Hazchem code
Not available.

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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-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. Put on appropriate personal protective equipment (see Section 8).

For emergency responders

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. 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).

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. 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 (see Section 13). Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

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

Not suitable

Prolonged exposure to elevated temperature

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	**NZ HSWA 2015 (New Zealand).** WES-TWA: 5 mg/m³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
Distillates (petroleum), solvent-dewaxed heavy paraffinic	**NZ HSWA 2015 (New Zealand).** WES-TWA: 5 mg/m³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist

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 appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

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.

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.

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.

Eye protection

Hot material: to prevent thermal burns wear a helmet, full face visor and heat resistant neck flap / apron.
Cold material: wear safety glasses with side shields. Safety glasses with side shields.

Hand protection

Wear suitable gloves. Hot material: to prevent thermal burns wear heat resistant and impervious gauntlets/gloves.
Cold material: 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 protection

Use of protective clothing is good industrial practice. 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 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.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Respiratory protective equipment must be checked to ensure it fits correctly each time it is worn. Air-filtering respirators, also called air-purifying respirators, will not be adequate under conditions of oxygen deficiency (i.e. low oxygen concentration), and would not be considered suitable where airborne concentrations of chemicals with a significant hazard are present. In these cases air-supplied breathing apparatus will be required. Provided an air-filtering/air-purifying respirator is suitable, a filter for particulates can be used. Use filter type P or comparable standard. Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure. Entry into a confined space or poorly ventilated area

Section 8. Exposure controls/personal protection

contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. A combination filter for particles, organic gases and vapours (boiling point >65°C) may be required if mist or fume is present as well as vapour. Use filter type AP or comparable standard. Approved air-supplied breathing apparatus must be worn where there is a risk of exceeding the exposure limit of carbon monoxide Approved air-supplied breathing apparatus must be worn where there is a risk of exposure to hazardous combustion and thermal decomposition products. 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. Respiratory protection should conform to AS/NZS 1715 and AS/NZS 1716.

Thermal hazards Wear impervious and heat resistant coveralls covering the full body and limbs. 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 9. Physical and chemical properties

Appearance

Physical state Liquid.

Colour Amber.

Odour Not available.

pH Not applicable.

Melting point Not available.

Boiling point Not available.

Drop Point Not available.

Flash point Closed cup: >200°C (>392°F) [Pensky-Martens.]

Vapour pressure Not available.

Vapour density Not available.

Density <1000 kg/m³ (<1 g/cm³) at 15°C

Solubility insoluble in water.

Viscosity Kinematic: 30.5 mm^2/s (30.5 cSt) at 40°C
Kinematic: 4.5 to 5.7 mm^2/s (4.5 to 5.7 cSt) at 100°C

Section 10. Stability and reactivity

Chemical stability The product is stable.

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.

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

Incompatible materials 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.

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation No known significant effects or critical hazards.

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

Section 11. Toxicological information

Inhalation No specific data.

Ingestion No specific data.

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

Eye contact No specific data.

Potential chronic health effects

General No known significant effects or critical hazards.

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, cracking and/or dermatitis.

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

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity 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

Ecotoxicity No known significant effects or critical hazards.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

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

Mobility in soil

Mobility Spillages may penetrate the soil causing ground water contamination.

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

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

Section 13. Disposal considerations

Disposal methods 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
New Zealand Class	Not regulated.	-	-	-		-
ADG Class	Not regulated.	-	-	-		-
IATA Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-

PG* : Packing group

Section 15. Regulatory information

New Zealand Regulatory Information

HSNO Approval Number None assigned.

HSNO Group Standard None assigned.

HSNO Classification Not classified.

Regulation according to other foreign laws

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 (AICS) All components are listed or exempted.

Canada inventory status 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 Chemical Substances Inventory (TCSI) All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision 18 August 2021

Date of previous issue 22 April 2021.

Version 2

Prepared by Not available.

Key to abbreviations Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Notice to reader

Indicates information that has changed from previously issued version.

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

Section 16. Other information

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.