

Optigear BM 460

Section 1. Identification


Product name	Optigear BM 460
Product code	450754-AU22
SDS no.	450754
Use of the substance/mixture	Gear lubricant . For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Product type	Liquid.
Supplier	BP Oil New Zealand Limited Ground floor and 1st floor Watercare House 73 Remuera Road Newmarket Auckland New Zealand
Emergency telephone number	Phone 09 969 9300 0800 243643 (0800 CHEMHELP) (NZ use only)
New Zealand National Poisons Centre	0800 764 766 National Poison Centre
OTHER PRODUCT INFORMATION	Technical Helpline 0800 10 40 60

Section 2. Hazards identification

HSNO Classification	6.3 - SKIN IRRITATION - Category B 6.5 - SENSITIZATION - Category B (Skin) 9.1 - AQUATIC ECOTOXICITY - Category C
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This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) 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	Warning
Hazard statements	Causes mild skin irritation. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Wear protective gloves. Avoid release to the environment. Avoid breathing vapour. Contaminated work clothing should not be allowed out of the workplace.
Response	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Not applicable.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Symbol	

Section 2. Hazards identification

Other hazards which do not result in classification Defatting to the skin.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Highly refined base oil and additives

Ingredient name	%	CAS number
Residual oils (petroleum), solvent-dewaxed	20 - 50	64742-62-7
Residual oils (petroleum), hydrotreated	20 - 50	64742-57-0
Distillates (petroleum), hydrotreated heavy paraffinic	1 - 5	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	1 - 5	64742-65-0
Residual oils (petroleum), solvent-dewaxed	1 - 5	64742-62-7
Zinc dialkyl dithiophosphate	1 - 5	68457-79-4
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	1 - 5	Proprietary
maleic anhydride	0 - 0.1	108-31-6

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	In case of inhalation of decomposition products in a fire, symptoms may be delayed. If inhaled, remove to fresh air. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention if adverse health effects persist or are severe.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Check for and remove any contact lenses. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention.

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. 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.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Firefighting measures

Extinguishing media

Suitable	Use foam or all-purpose dry chemical to extinguish.
Not suitable	Do not use water jet.

Section 5. Firefighting measures

Specific hazards arising from the chemical

Swarf fires - Neat metal working oils may fume, thermally decompose or ignite if they come into contact with red hot swarf. To minimise the generation of red hot swarf ensure that a sufficient flow of oil is correctly directed to the cutting edge of the tool to flood it throughout cutting operations. As an additional precaution swarf should be regularly cleared from the immediate area to prevent the risk of fire. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products

Combustion products may include the following:
metal oxide/oxides
carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide)
nitrogen oxides (NO, NO₂ etc.)

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 spill material. Floors may be slippery; use care to avoid falling. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment (see Section 8). Contact emergency personnel.

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

Methods and material for containment and cleaning up

Small spill

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

Large spill

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Contaminated absorbent material may pose the same hazard as the spill product. 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). 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. Avoid release to the environment. 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly

Section 7. Handling and storage

closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid, as can bacteria, and as a result may induce allergic and other skin reactions, especially if personal hygiene is inadequate.

Concentrations of mist, fumes and vapours in enclosed spaces may result in the formation of explosive atmospheres. Excessive splashing, agitation or heating must be avoided. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Residual oils (petroleum), solvent-dewaxed	NZ HSWA 2015 (New Zealand). WES-TWA: 5 mg/m ³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m ³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
Residual oils (petroleum), hydrotreated	NZ HSWA 2015 (New Zealand). WES-TWA: 5 mg/m ³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m ³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
Distillates (petroleum), hydrotreated heavy paraffinic	NZ HSWA 2015 (New Zealand). WES-TWA: 5 mg/m ³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m ³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
Distillates (petroleum), solvent-dewaxed heavy paraffinic	NZ HSWA 2015 (New Zealand). WES-TWA: 5 mg/m ³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m ³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
Residual oils (petroleum), solvent-dewaxed	NZ HSWA 2015 (New Zealand). WES-TWA: 5 mg/m ³ 8 hours. Issued/ Revised: 6/2016 Form: Mist WES-STEL: 10 mg/m ³ 15 minutes. Issued/ Revised: 9/2010 Form: Mist
maleic anhydride	NZ HSWA 2015 (New Zealand). Skin sensitiser. WES-TWA: 0.25 ppm 8 hours. Issued/ Revised: 1/1994 WES-TWA: 1 mg/m ³ 8 hours. Issued/ Revised: 1/1994

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye protection

Safety glasses with side shields.

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 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. 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.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Brown.
Odour	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Drop Point	Not available.
Flash point	Open cup: 240°C (464°F) [Cleveland.]
Vapour pressure	Not available.
Vapour density	Not available.
Density	<1000 kg/m ³ (<1 g/cm ³) at 15°C
Solubility	insoluble in water.
Viscosity	Kinematic: 460 mm ² /s (460 cSt) at 40°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 excessive heat.
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	Irritating to mouth, throat and stomach.
Skin contact	Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.
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	Adverse symptoms may include the following: pain or irritation watering redness

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	LD50 Dermal	Rat	>2000 mg/kg	-	-
	LD50 Oral	Rat	>2000 mg/kg	-	-

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	Rabbit	Skin - Moderate irritant	-	-	-	-	-
	Rabbit	Eyes - Redness of the conjunctivae	≥2	-	-	-	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result	Remarks
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	skin	Guinea pig	Sensitising	-

Potential chronic health effects

General	No known significant effects or critical hazards.
Inhalation	Not applicable.
Ingestion	Not applicable.
Skin contact	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Eye contact	Not applicable.
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 This material is harmful to aquatic life with long lasting effects.

Aquatic and terrestrial toxicity

Product/ingredient name	Species	Result/Test	Exposure	Effects	Remarks
Reaction product of ammonium molybdate and C12-C24-diethoxylated alkylamine (1:5-1:3)	Daphnia	Chronic EC50 6.8 mg/l	48 hours	-	-

Persistence and degradability

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Expected to be biodegradable.

Bioaccumulative potential

Not available.

Product/ingredient name	LogP _{ow}	BCF	Potential
Zinc dialkyl dithiophosphate	0.69	-	low
maleic anhydride	-2.78	-	low

Mobility in soil

Mobility

Non-volatile. Liquid. insoluble in water.

Soil/water partition coefficient (K_{oc})

Not available.

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. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

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

HSR002606

HSNO Group Standard

Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2006

HSNO Classification

6.3 - SKIN IRRITATION - Category B
6.5 - SENSITIZATION - Category B (Skin)
9.1 - AQUATIC ECOTOXICITY - Category C

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

At least one component is not listed.

China inventory (IECSC)

All components are listed or exempted.

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Section 15. Regulatory information

Japan inventory (ENCS)	At least one component is not listed.
Korea inventory (KECI)	At least one component is not listed.
Philippines inventory (PICCS)	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision	9 October 2020
Date of previous issue	27 August 2020.
Version	3.01
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.

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