To Our Customers:

The attached Safety Data Sheet (SDS) was prepared by the vendor of the product you purchased through one of our divisions. We used the manufacturer's electronic document directly or scanned a paper copy and generated a file for our automated SDS delivery system.

All statements, technical information, and recommendations contained therein are solely that of the manufacturer of the product. We at Zep Inc. did not verify the accuracy and completeness of the statements and do not warrantee or guarantee the information. We provide vendor SDSs to assist our customers in their compliance efforts. The attached document is in compliance with one of the respective country regulatory requirements noted below:

The OSHA Hazard Communication Standard (in the United States)
The Hazardous Products Regulations (in Canada)

We made every effort to deliver all of the information prepared by the manufacturer. We cannot anticipate all conditions under which this information will be used. If you have any questions about the statements on the SDS, please contact the company shown on the document.

Zep Inc. assumes no liability or responsibility for loss or damage resulting from the improper use or handling of this product, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the manufacturer's product label and Safety Data Sheet.

Sincerely,

Product Stewardship Team
Zep Inc.

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

1.1 Product identifier

Trade name/designation	Mercedes-Benz Genuine Engine Oil SAE 0W-20 MB 229.71
MB-Freigabe-Nr	229.71
Product category	PC-TEC-11 Lubricants, greases, release agents

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

Use of the substance/mixture
Motor oil

Uses advised against
This product should not be used for other purposes than those specified without the advice of an expert.

1.3 Details of the supplier of the safety data sheet

Supplier
Mercedes-Benz AG
70546 Stuttgart
Germany
+49 (0)711 17-0
Telefon + 49 (0)711 17-97390
Telefax + 49 (0)711 17-94831
E-Mail (fachkundige Person) mercedes-benz-sdb@mercedes-benz.com

Manufacturer
Mercedes-Benz AG

70546 Stuttgart
Germany

Telephone +49 711 17-0
E-mail (competent person):
mercedes-benz-sdb@mercedes-benz.com

1.4 Emergency telephone number

+49 711 17-0
gms.aftersales.mercedes-benz.com

Giftnotruf der Charité – Universitätsmedizin Berlin +49 (0)30 30686700

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Remark
The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Precautionary statements
P102 Keep out of reach of children.

Special rules for supplemental label elements for certain mixtures
EUH210 Safety data sheet available on request.

2.3 Other hazards

Adverse human health effects and symptoms
Frequently or prolonged contact with skin may cause dermal irritation.

Other adverse effects
Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Description
Severely refined mineral and/or synthetic oils, additives.

Hazardous ingredients

CAS No.	EC No.	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
64742-54-7	265-157-1	Distillates (petroleum), hydrotreated heavy paraffinic	70 < 90 %	Asp. Tox. 1; H304	ATE(oral): ≥ 5001 mg/kg ATE(dermal): ≥ 3001 mg/kg ATE(inhalation vapour): 5.53 mg/L
36878-20-3	253-249-4	bis(nonylphenyl)amine	1 < 1.5 %	Aquatic Chronic 4; H413	ATE(oral): 5001 mg/kg ATE(dermal): 2001 mg/kg
84605-29-8	283-392-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	1 < 1.5 %	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 2; H411	Eye Dam. 1;H318: >=12,5 % Eye Irrit. 2;H319: >=10%<12,5 % Skin Irrit. 2;H315: >=6,25 %
74499-35-7		phenol, (tetrapropenyl) derivatives	0.01 < 0.05 %	Repr. 1B; H360F Skin Corr. 1C; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M=10 (Aquatic Acute 1) M=10 (Aquatic Chronic 1)

REACH No.	Substance name
01-2119484627-25	Distillates (petroleum), hydrotreated heavy paraffinic
01-2119488911-28	bis(nonylphenyl)amine

REACH No.	Substance name
01-2119493626-26	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts

Remark
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Remove contaminated, saturated clothing immediately.

Following inhalation
Provide fresh air.
In the event of symptoms refer for medical treatment.

Following skin contact
After contact with skin, wash immediately with plenty of water and soap.
In case of skin irritation, consult a physician.

After eye contact
Remove contact lens
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion
Do NOT induce vomiting.
Rinse mouth thoroughly with water.
Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
alcohol resistant foam
Extinguishing powder
Carbon dioxide (CO2)
Water spray jet

Unsuitable extinguishing media
Full water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
Fire gas of organic material has to be classed invariably as respiratory poison.
In the event of fire the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)
Sulphur dioxide (SO2)

5.3 Advice for firefighters

Special protective equipment for firefighters
In case of fire: Wear self-contained breathing apparatus.

Additional information
Co-ordinate fire-fighting measures to the fire surroundings.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Cool endangered containers with water spray and possibly remove them from fire site.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Avoid skin and eye contact.
Special danger of slipping by leaking/spilling product.

For emergency responders
Personal protection equipment
Keep away unprotected persons
Special danger of slipping by leaking/spilling product.

6.2 Environmental precautions

Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter into surface water or drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For containment
Collect with spongy material (all-purpose gelation agent) and dispose of in compliance with the regulations.

6.4 Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures
Avoid:
generation/formation of aerosols
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
Do not heat up to temperatures close to the flash point.
All work processes must always be designed so that the following is as low as possible:
Skin contact
Eye contact
Adhere to general precaution rules when handling chemicals
Do not put any product-impregnated cleaning rags into your trouser pockets.

Advices on general occupational hygiene
When using do not eat, drink, smoke, sniff.
Keep away from food and drink.
Wash hands before breaks and after work.
Use protective skin cream before handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep/Store only in original container.

Storage class
10 Combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions
Keep away from foods and beverages
Keep container tightly closed in a cool, well-ventilated place.
Protect against:
Heat

7.3 Specific end use(s)

Recommendation
See section 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL worker

CAS No.	Substance name	DNEL value	DNEL type	Remark
64742-54-7	Distillates (petroleum), hydrotreated heavy paraffinic	5.4 mg/m³	long-term inhalative (local)	
36878-20-3	bis(nonylphenyl)amine	0.62 mg/kg bw/day	long-term dermal (systemic)	
36878-20-3	bis(nonylphenyl)amine	4.37 mg/kg	long-term inhalative (systemic)	

DNEL Consumer

CAS No.	Substance name	DNEL value	DNEL type	Remark
64742-54-7	Distillates (petroleum), hydrotreated heavy paraffinic	1.2 mg/m³	long-term inhalative (local)	
36878-20-3	bis(nonylphenyl)amine	0.31 mg/kg bw/day	long-term dermal (systemic)	

CAS No.	Substance name	DNEL value	DNEL type	Remark
36878-20-3	bis(nonylphenyl)amine	1.09 mg/kg	long-term inhalative (systemic)	
36878-20-3	bis(nonylphenyl)amine	0.31 mg/kg	long-term oral (repeated)	
84605-29-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	12.1 mg/kg	long-term dermal (systemic)	
84605-29-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	8.31 mg/kg	long-term inhalative (systemic)	

PNEC

CAS No.	Substance name	PNEC Value	PNEC type	Remark
64742-54-7	Distillates (petroleum), hydrotreated heavy paraffinic	9.33 mg/kg	Secondary Poisoning	, Nahrung
36878-20-3	bis(nonylphenyl)amine	0.1 mg/L	aquatic, freshwater	
36878-20-3	bis(nonylphenyl)amine	0.01 mg/L	aquatic, marine water	
36878-20-3	bis(nonylphenyl)amine	132000 mg/kg	sediment, freshwater	
36878-20-3	bis(nonylphenyl)amine	13200 mg/kg	sediment, marine water	
36878-20-3	bis(nonylphenyl)amine	263000 mg/kg	soil	
84605-29-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	0.005 mg/L	aquatic, marine water	
84605-29-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	0.004 mg/L	aquatic, freshwater	
84605-29-8	Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts	0.055 mg/kg	soil	

8.2 Exposure controls

Appropriate engineering controls

Technical measures to prevent exposure
Sufficient ventilation and exhaustion.

Personal protection equipment

Eye/face protection
Safety glasses recommended during transfer
EN 166

Hand protection
Glove materials data [type, thickness, breakthrough time/duration of use, permeation rate]: Nitrile rubber (protection index 6, >480 min, 0.4 mm)
For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and. the resultant standard EN374.

Body protection:
Protective clothing
EN 14605

Respiratory protection
Respiratory protection necessary at:
aerosol or mist formation
Respiratory protection necessary at:
high concentrations
Suitable respiratory protection apparatus:
Filtering device (full mask or mouthpiece) with filter:
AX

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state
liquid

Colour
amber

Odour
characteristic

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:	not determined		
Melting point/freezing point	not determined		
Boiling point or initial boiling point and boiling range	> 300 °C	ASTM D1120	Tolerance: ± 10%
flammability	not determined		
Lower and upper explosion limit	not determined		
Flash point	207 °C	ASTM D 93	
Auto-ignition temperature	not determined		
Decomposition temperature	not determined		
pH	in delivery state		not applicable
Viscosity	kinematic 41.72 cSt (40°C)	ASTM D445	Tolerance: ± 10%
Solubility(ies)	Water solubility		practically insoluble
Partition coefficient n-octanol/water (log value)	not determined		
Vapour pressure	not determined		
Density and/or relative density	0.8479 g/m3	ASTM D 4052	
Relative vapour density	not determined		
particle characteristics	not determined		

9.2 Other information

Other safety characteristics

	Value	Method	Source, Remark
Explosive properties:			The product is not explosive

Other information
none

SECTION 10: Stability and reactivity

10.1 Reactivity
No hazardous reactions known.

10.2 Chemical stability
The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions
No hazardous reactions known.

10.4 Conditions to avoid
Avoid temperatures above flash point.
High temperatures

10.5 Incompatible materials
Oxidising agent, strong
Strong acids
Strong bases

10.6 Hazardous decomposition products
Sulphur dioxide (SO2)
Phosphorus compounds
Nitrogen oxides (NOx)
Hydrogen sulfide (H2S)
Carbon monoxide
Carbon dioxide

Additional information
No risk of production of decomposition products when appropriately handled and stored

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Animal data

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity	CAS No.36878-20-3 bis(nonylphenyl)amine LD50: 5001 mg/kg Species Rat	OECD 423	
	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic LD50: ≥ 5001 mg/kg Species Rat	OECD 423	

	Effective dose	Method,Evaluation	Source, Remark
Acute dermal toxicity	CAS No.36878-20-3 bis(nonylphenyl)amine LD50: 2001 mg/kg Species Rat	OECD 402	
	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic LD50: ≥ 3001 mg/kg Species Rabbit	OECD 402	
Acute inhalation toxicity	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic Acute inhalation toxicity (vapour) LC50: 5.53 mg/L Species Rat		

Assessment/classification
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Practical experience/human evidence
Repeated or prolonged contact with the skin may cause skin irritation.

Animal data

Result / Evaluation	Method	Source, Remark
CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts Specific Concentration Limit (SCL) Skin Irrit. 2; H315: 6.25 % ≤ C ≤ 100 %		CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts

Assessment/classification
Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Practical experience/human evidence
Repeated or prolonged contact with the eyes may cause eye irritation.

Animal data

Result / Evaluation	Method	Source, Remark
CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts Specific Concentration Limit (SCL) Eye Dam. 1; H318: 12.5 ≤ C ≤ 100%, Eye Irrit. 2; H319: 10 ≤ C ≤ 12.5%		CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts

Assessment/classification
Based on available data, the classification criteria are not met.

Sensitisation to the respiratory tract

Assessment/classification
Based on available data, the classification criteria are not met.

Skin sensitisation

Assessment/classification
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Assessment/classification
Based on available data, the classification criteria are not met.

Carcinogenicity

Assessment/classification
Based on available data, the classification criteria are not met.

Reproductive toxicity

Assessment/classification
Based on available data, the classification criteria are not met.

Overall Assessment on CMR properties

This product does not meet the criteria for classification in Categories 1A/1B.

STOT-single exposure

STOT SE 1 and 2

Practical experience/human evidence
Harmless if swallowed in low doses; swallowing large amounts may affect the digestive tract.

Assessment/classification
Based on available data, the classification criteria are not met.

STOT SE 3

Irritation to respiratory tract

Practical experience/human evidence
Inhaling mists and vapours at high-temperatures may cause respiratory irritation.

Assessment/classification
Based on available data, the classification criteria are not met.

Narcotic effects

Assessment/classification
Based on available data, the classification criteria are not met.

STOT-repeated exposure

Assessment/classification
Based on available data, the classification criteria are not met.

Aspiration hazard

Assessment/classification
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic LL50 > 100 mg/L Species Pimephales promelas (fathead minnow) Test duration 96 h	OECD 203	
	CAS No.36878-20-3 bis(nonylphenyl)amine LC50: 101 mg/L Test duration 96 h	OECD 203	
	CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts LC50: 4.5 mg/L Test duration 96 h		
Chronic (long-term) fish toxicity	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic NOEC 1000 mg/L Species Oncorhynchus mykiss (Rainbow trout) Test duration 14 d		
Acute (short-term) toxicity to crustacea	CAS No.36878-20-3 bis(nonylphenyl)amine EC50 101 mg/L Species Daphnia pulex (water flea) Test duration 48 h	OECD 202	
	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic EC50 > 10000 mg/L Species Daphnia pulex (water flea) Test duration 48 h	OECD 202	

	Effective dose	Method,Evaluation	Source, Remark
	CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts EC50 23 mg/L Test duration 48 h		
Chronic (long-term) toxicity to aquatic invertebrate	CAS No.84605-29-8 Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts NOEC 0.4 mg/L Species Daphnia magna (Big water flea) Test duration 21 d		
	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic NOEC > 1 mg/L Species Daphnia pulex (water flea)		
Acute (short-term) toxicity to algae and cyanobacteria	CAS No.36878-20-3 bis(nonylphenyl)amine EC50 101 mg/L Species Pseudokirchneriella subcapitata (green alga) Test duration 72 h	OECD 201	
	CAS No.64742-54-7 Distillates (petroleum), hydrotreated heavy paraffinic EC50 > 100 mg/L Species Pseudokirchneriella subcapitata (green alga) Test duration 72 h		
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

Assessment/classification

The substance/mixture does not fullfill the criteria of the acute aquatic toxicity according to Regulation (EC) No 1272/2008 [CLP], Annex I.

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Additional ecotoxicological information

Additional information

Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose of waste according to applicable legislation.

Appropriate disposal / Package

Dispose of waste according to applicable legislation.

Remark

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	-	-	-
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

not applicable

All transport carriers

No dangerous goods as defined by the transport regulations - ADR/RID, IMDG, ICAO/IATA-DGR.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available

15.2 Chemical Safety Assessment

Substance safety analysis was not performed for this mixture.

SECTION 16: Other information

Indication of changes
Current safety data sheets are available at:
http://gms.aftersales.daimler.com

Abbreviations and acronyms
See overview table at www.euphrac.eu

Key literature references and sources for data
Safety data sheets of suppliers

Additional information
Adhere to existing national and local rules referring to chemicals.
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Relevant H- and EUH-phrases (Number and full text)

H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.