

according to Regulation (EC) No 1907/2006

Mabanol Radon Unigear GL 4-GL5 80W-90

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

1.1. Product identifier

Mabanol Radon Unigear GL 4-GL5 80W-90

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

Use of the substance/mixture

gear oil

Uses advised against

none

1.3. Details of the supplier of the safety data sheet

Company name: Mabanol GmbH & Co. KG Street: Admiralitätstraße 55 Place: D-20459 Hamburg

Responsible Department:

Telephone: +49 (0) 40 36809988

1.4. Emergency telephone: Giftinformationszentrale Göttingen

Telephone: 0551/1 92 40

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard categories:

Serious eye damage/eye irritation: Eye Irrit. 2 Respiratory or skin sensitisation: Skin Sens. 1

Hazard Statements:

Causes serious eye irritation. May cause an allergic skin reaction.

2.2. Label elements

Hazardous components which must be listed on the label

Polysulfides, di-tert-Bu

 $Reaction\ products\ of\ bis (2-methylpentan-2-yl) dithiophosphoric\ acid\ with\ phosphorus\ oxide,\ propylene$

oxide and amines, C12-14 alkyl (branched)

Signal word: Warning

Pictograms:

Hazard statements

H319 Causes serious eye irritation.H317 May cause an allergic skin reaction.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of waste according to applicable legislation.



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2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII. This mixture contains no substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			
	EC No	Index No	REACH No	
	Classification according to R			
68937-96-2	Polysulfides, di-tert-Bu	1 - < 5 %		
	273-103-3		01-2119540515-43	
	Skin Sens. 1, Aquatic Chron	ic 3; H317 H412		
	Mineral oil*	1 - < 5 %		
	Asp. Tox. 1; H304			
	Reaction products of bis(2-n propylene oxide and amines	1 - < 5 %		
	931-384-6		01-2119493620-38	
	Flam. Liq. 3, Acute Tox. 4, E H411			
597-82-0	O,O,O-triphenyl phosphorotl	< 1 %		
	209-909-9			
	Repr. 2, Aquatic Chronic 4;			

Full text of H and EUH phrases: see section 16.

Further Information

* The mineral oils contained can be described by one or more of the following numbers:

EC-no.: 265-157-1, 265-169-7, 265-158-7, 265-159-2

REACH-no.: 01-2119484627-25, 01-2119471299-27, 01-2119487077-29, 01-2119480132-48

Note L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 'Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions — Dimethyl sulphoxide extraction refractive index method', Institute of Petroleum, London. This note applies only to certain complex oil-derived substances in Part 3.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately. Apply cortisone spray at early stage.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all



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contaminated clothing. In case of skin irritation, consult a physician.

After contact with eves

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Never give anything by mouth to an unconscious person or a person with cramps. When in doubt or if symptoms are observed, get medical advice.

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

If swallowed or in the event of vomiting, risk of entering the lungs.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Sand. Foam. Carbon dioxide (CO2). Extinguishing powder. In case of major fire and large quantities: Water spray jet. Water mist.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Burning produces heavy smoke.

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO2) Sulphur dioxide (SO2)

Nitrogen oxides (NOx) Phosphorus oxides

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment (refer to section 8). Avoid contact with skin, eyes and clothes.

Avoid formation of oil dust.

Ventilate affected area.

Special danger of slipping by leaking/spilling product.

6.2. Environmental precautions

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

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Treat the recovered material as prescribed in the section on waste disposal.

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

No information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling



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Advice on safe handling

Wear suitable protective clothing. (See section 8.) Avoid contact with skin, eyes and clothes.

Avoid formation of oil dust.

Do not breathe aerosol.

Advice on protection against fire and explosion

Usual measures for fire prevention. Keep away from sources of ignition - No smoking.

Fire class B

Further information on handling

Do not breathe vapour/aerosol.

Avoid contact with skin and eyes.

Advices on general occupational hygiene: See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Only use containers specifically approved for the substance/product.

Advice on storage compatibility

Do not store together with: Gas. Explosives. Radioactive substances. Infectious substances

Further information on storage conditions

Temperature control required. Protect from light. Keep container tightly closed. Do not allow contact with air.

7.3. Specific end use(s)

refer to chapter 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

air limit values:

Possibility of exposure to Aerosol

Limit value = 5 mg/ m3 - Source: ACGIH

8.2. Exposure controls







Appropriate engineering controls

Provide adequate ventilation.

Protective and hygiene measures

Clean skin thoroughly after working.

Do not put any product-impregnated cleaning rags into your trouser pockets.

Contaminated work clothing should not be allowed out of the workplace.

Wash contaminated clothing before reuse.

Eye/face protection

Safety goggles with side protection. In case of increased risk add protective face shield. DIN EN 166

Hand protection

Use safety gloves of following materials: NBR (nitrile) / neopren / viton (permeationslevel 5 - 6), Cat. II according to norm EN 388.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.



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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.

Skin protection

Oil-resistant and hardly inflammable protective clothing.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

- -aerosol or mist formation
- -exceeding exposure limit values

Suitable respiratory protection apparatus: Respiratory equipment in case of nebulosity or aerosol: Use a mask with a filter type A2, A2/P2 or ABEK.

The filter class must be suitable for the maximum contaminant concentration

(gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid Colour: clear

Odour: characteristic

Test method

pH-Value: No information available.

Changes in the physical state

Melting point:

Initial boiling point and boiling range:

Sublimation point:

No information available.

Pour point: -27 °C ASTM D 5985 Flash point: 224 °C DIN ISO 2592

Sustaining combustion:

No data available

Flammability

Solid: No information available.

Gas: No information available.

Explosive properties

none

Lower explosion limits:

Upper explosion limits:

No information available.

No information available.

No information available.

Auto-ignition temperature

Solid: No information available.
Gas: No information available.
Decomposition temperature: No information available.

Oxidizing properties

none



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Vapour pressure: No information available.

(at 20 °C)

Vapour pressure: No information available.

(at 50 °C)

Density (at 15 °C): 0,898 g/cm³ DIN 51757

Bulk density:

Water solubility:

No information available.

No information available.

Solubility in other solvents

No information available.

Partition coefficient: No information available.

Viscosity / dynamic: No information available.

Viscosity / kinematic: 139 mm²/s DIN EN ISO 3104

(at 40 °C)

Flow time:

Vapour density:

No information available.

Evaporation rate:

No information available.

No information available.

Solvent separation test:

No information available.

No information available.

No information available.

9.2. Other information

Solid content: No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable at ambient temperature.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials

Oxidising agent, strong

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

No information available.

Acute toxicity

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



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CAS No	Chemical name					
	Exposure routes	Method	Dose	Species	Source	
	Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched)					
	oral	LD50	2000 mg/kg	Rat (OECD 401)	ECHA Dossier	
597-82-0	O,O,O-triphenyl phosphorothioate					
	oral	LD50	>10000 mg/kg	Rat (OECD 401)	ECHA Dossier	

Irritation and corrosivity

Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Polysulfides, di-tert-Bu), (Reaction products of

bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines,

C12-14 alkyl (branched))

May cause sensitisation by skin contact.

STOT-single exposure

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

Severe effects after repeated or prolonged exposure

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

Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched):

Subacute oral toxicity:

Method: -Species: Rat

Results: NOAEL = 150 mg/kg literature infomation: ECHA Dossier

Polysulfides, di-tert-Bu: Subacute oral toxicity:

Method: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) Species: Rat

Results: NOAEL = 100 mg/kg literature infomation: ECHA Dossier

O,O,O-triphenyl phosphorothioate:

Subacute oral toxicity

Method: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

Species: Rat

Results: NOAEL 50 mg/kg literature infomation: ECHA Dossier

Carcinogenic/mutagenic/toxic effects for reproduction



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

Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched):

In vitro mutagenicity/genotoxicity:

Method: OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

Result: negative.

literature infomation: ECHA dossier

Reproductive toxicity: Species: Rat (Wistar)

Method: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

Results: NOAEL = 150 mg/kg literature infomation: ECHA Dossier Developmental toxicity/teratogenicity:

Species: Rat (Wistar)

Method: other guideline: Reproduction/developmental screening test.

Results: NOAEL = 150 mg/kg literature infomation: ECHA Dossier

Polysulfides, di-tert-Bu:

In vitro mutagenicity/genotoxicity:

Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Result: negative.

literature infomation: ECHA dossier

Reproductive toxicity:

Species: Rat (Sprague-Dawley)

Method: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

Results: NOAEL = 150 mg/kg literature infomation: ECHA Dossier Developmental toxicity/teratogenicity:

Species: Rat

Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study)

Results: NOAEC >= 195 ppm literature infomation: ECHA Dossier

O,O,O-triphenyl phosphorothioate: In vitro mutagenicity/genotoxicity:

Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Result: negative.

literature infomation: ECHA Dossier

Reproductive toxicity: Species: Rat (Wistar)

Method: OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

Results: NOAEL >250 mg/kg literature infomation: ECHA Dossier

Aspiration hazard

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

Practical experience

Other observations

Frequent contact specially if dried out may cause skin and eye irritations.

SECTION 12: Ecological information

12.1. Toxicity



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CAS No	Chemical name								
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source			
68937-96-2	Polysulfides, di-tert-Bu								
	Acute algae toxicity	ErC50	0,815 mg/l	72 h	Pseudokirchnerella subcapitata (OECD 201)	ECHA Dossier			
	Acute crustacea toxicity	EC50	0,24 mg/l	48 h	Daphnia magna (OECD 202)	ECHA Dossier			
	Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched)								
	Acute fish toxicity	LC50	8,5 mg/l	96 h	Pimephales promelas	ECHA Dossier			
	Acute algae toxicity	ErC50	6,4 mg/l	96 h	Pseudokirchnerella subcapitata	ECHA Dossier			
597-82-0	O,O,O-triphenyl phosphorothioate								
	Acute fish toxicity	LC50	>100 mg/l	96 h	Danio rerio (OECD 201)	ECHA Dossier			
	Acute crustacea toxicity	EC50	>100 mg/l	48 h	Daphnia magna (OECD 202)	ECHA Dossier			

12.2. Persistence and degradability

The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

	e.g. mechanicai separation.						
CAS No	Chemical name						
	Method	Value	d	Source			
	Evaluation						
68937-96-2	Polysulfides, di-tert-Bu						
	OECD 301B / ISO 9439 / EEC 92/69 annex V, C.4-C	13 %	28	ECHA Dossier			
	Product is not easily biodegradable.						
	Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched)						
	ASTM D-5864-95	3,6%	28	ECHA Dossier			
	not readily degradable						
597-82-0	O,O,O-triphenyl phosphorothioate						
	OECD 301B / ISO 9439 / EEC 92/69 annex V, C.4-C	17,8-19,3%	29	ECHA Dossier			
	Product is not easily biodegradable.						

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
68937-96-2	Polysulfides, di-tert-Bu	5,6
597-82-0	O,O,O-triphenyl phosphorothioate	5,0

12.4. Mobility in soil

No information 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. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods



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Advice on disposal

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE

CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances

Classified as hazardous waste.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

14.1. UN number:No dangerous good in sense of this transport regulation.14.2. UN proper shipping name:No dangerous good in sense of this transport regulation.14.3. Transport hazard class(es):No dangerous good in sense of this transport regulation.14.4. Packing group:No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number:No dangerous good in sense of this transport regulation.14.2. UN proper shipping name:No dangerous good in sense of this transport regulation.14.3. Transport hazard class(es):No dangerous good in sense of this transport regulation.14.4. Packing group:No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.
 14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
 14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
 14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO)

14.1. UN number:No dangerous good in sense of this transport regulation.14.2. UN proper shipping name:No dangerous good in sense of this transport regulation.14.3. Transport hazard class(es):No dangerous good in sense of this transport regulation.14.4. Packing group:No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not relevant

SECTION 15: Regulatory information

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



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EU regulatory information

2010/75/EU (VOC): No information available. 2004/42/EC (VOC): No information available.

Additional information

Not subject to 96/82/EC (SEVESO II), 2012/18/CE (SEVESO III)

Observe in addition any national regulations!

National regulatory information

Employment restrictions: Observe employment restrictions for young people.

Water contaminating class (D): 2 - water contaminating

Additional information

none

15.2 Chemical Safety Assessment

not applicable.

SECTION 16: Other information

Changes

Rev.: 1,0 - 28.04.2015 Rev.: 1,1 - 17.07.2015

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

CAS Chemical Abstracts Service DNEL: Derived No Effect Level

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level NOAEC: No observed adverse effect level

NTP: National Toxicology Program

N/A: not applicable

OSHA: Concerning the International Transport of Dangerous Goods by Rail)

PNEC: predicted no effect concentration PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de

fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

SARA: Superfund Amendments and Reauthorization Act

SVHC: substance of very high concern TRGS Technische Regeln für Gefahrstoffe TSCA: Toxic Substances Control Act VOC: Volatile Organic Compounds

VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe

WGK: Wassergefährdungsklasse



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

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H361 Suspected of damaging fertility or the unborn child.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- H413 May cause long lasting harmful effects to aquatic life.

Further Information

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)