

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

**1.1. Product identifier**

Mabanol Radon Gear GL 4 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 Directive 67/548/EEC or 1999/45/EC**

R phrases:

May cause sensitisation by skin contact.

Physical hazards: No risks worthy of mention.

health hazards: Causes serious eye irritation. Skin sensitisation

Environmental hazards: No risks worthy of mention.

**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**

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

Reaction product of 1,3,4-thiadiazolidin-2,5-dithion, formaldehyde and phenol derivatives heptyl

Signal word: Warning

Pictograms: GHS07



**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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P501	Dispose of waste according to applicable legislation.

**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**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
931-384-6	Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched)	1 - < 5 %
	Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R22-41-43-51-53	
	Flam. Liq. 3, Acute Tox. 4, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 2; H226 H302 H318 H317 H411	
01-2119493620-38		
204-015-5	(Z)-octadec-9-enylamine	< 1 %
112-90-3	C - Corrosive, Xn - Harmful, N - Dangerous for the environment R22-48/22-65-34-50-53	
612-283-00-3	Acute Tox. 4, Skin Corr. 1B, STOT SE 3, STOT RE 2, Asp. Tox. 1, Aquatic Acute 1 (M-Factor = 10), Aquatic Chronic 1 (M-Factor = 10); H302 H314 H335 H373 H304 H400 H410	
939-460-0	Reaction product of 1,3,4-thiadiazolidin-2,5-dithion, formaldehyde and phenol derivatives heptyl	< 1 %
	Xi - Irritant R38-41-43-52-53	
	Flam. Liq. 3, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3; H226 H315 H318 H317 H412	

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

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

**After contact with eyes**

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 (CO<sub>2</sub>). 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 (CO<sub>2</sub>) Sulphur dioxide (SO<sub>2</sub>)

Nitrogen oxides (NO<sub>x</sub>)

**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. If required, notify relevant authorities according to all applicable regulations.

**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**

**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.

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:	-
Odour:	-

### Test method

pH-Value:	No information available.
<b>Changes in the physical state</b>	
Melting point:	No information available.
Initial boiling point and boiling range:	No information available.
Sublimation point:	No information available.
Softening point:	No information available.
Pour point:	-27 °C ASTM D 5985
Flash point:	224 °C
Sustaining combustion:	No data available

### Flammability

Solid:	No information available.
Gas:	No information available.

### Explosive properties

none

Lower explosion limits:	No information available.
Upper explosion limits:	No information available.
Ignition temperature:	No information available.

### Auto-ignition temperature

Solid:	No information available.
Gas:	No information available.

Decomposition temperature:	No information available.
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**Oxidizing properties**

none

Vapour pressure:  
(at 20 °C) No information available.

Vapour pressure:  
(at 50 °C) No information available.

Density (at 15 °C): 0,891 g/cm<sup>3</sup> DIN 51757

Bulk density: No information available.

Water solubility: No information available.

**Solubility in other solvents**

No information available.

Partition coefficient: No information available.

Viscosity / dynamic: No information available.

Viscosity / kinematic:  
(at 40 °C) 141 mm<sup>2</sup>/s DIN EN ISO 3104

Flow time: No information available.

Vapour density: No information available.

Evaporation rate: No information available.

Solvent separation test: No information available.

Solvent content: 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**

**Toxicokinetics, metabolism and distribution**

No information available.

**Acute toxicity**

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

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
112-90-3	(Z)-octadec-9-enylamine				
	oral	LD50	1689 mg/kg	Rat	US EPA summary

#### Irritation and corrosivity

Causes serious eye irritation.

#### Sensitising effects

May cause an allergic skin reaction. (Reaction products of bis(2-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14 alkyl (branched)), (Reaction product of 1,3,4-thiadiazolidin-2,5-dithion, formaldehyde and phenol derivatives heptyl)  
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 information: ECHA Dossier

Reaction product of 1,3,4-thiadiazolidin-2,5-dithion, formaldehyde and phenol derivatives heptyl:

Subacute oral toxicity:

Method: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Species: Rat (Sprague-Dawley)

Results: NOAEL = 100 mg/kg

literature information: ECHA Dossier

(Z)-octadec-9-enylamine:

Short-term repeated dose toxicity study (28 days):

Method:

Result: NOAEL = 3,25 mg/kg.

literature information: ECHA dossier (Risk Assessment Report)

#### Carcinogenic/mutagenic/toxic effects for reproduction

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 information: ECHA dossier

Reproductive toxicity:

Species: Rat (Wistar)

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

Results: NOAEL = 150 mg/kg

literature information: ECHA Dossier

Developmental toxicity/teratogenicity:

Species: Rat (Wistar)

Method: other guideline: Reproduction/developmental screening test.

Results: NOAEL = 150 mg/kg

literature information: ECHA Dossier

Reaction product of 1,3,4-thiadiazolidin-2,5-dithion, formaldehyde and phenol derivatives heptyl:

In vitro mutagenicity/genotoxicity:

Method: OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

Result: negative.

literature information: ECHA dossier

Reproductive toxicity:

Species: Rat (Sprague-Dawley)

Method: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Results: NOAEL = 200 mg/kg

literature information: ECHA Dossier

Developmental toxicity/teratogenicity:

Species: Rat (Sprague-Dawley)

Method: other guideline: OECD 422

Results: NOAEL = 200 mg/kg

literature information: ECHA Dossier

(Z)-octadec-9-enylamine:

Germ cell mutagenicity: (Salmonella tester strains TA98, TA100, TA1535, TA1537 and TA1538)

Method: -

Results: negative.

literature information: Microbiological Associates Inc.; Salmonella/Mammalian-Microsome Plate Incorporation Mutagenicity Assay (Ames Test). (1985), EPA Document No. FYI-AX-0485-0391, Fiche No. OTS0000391-0] \*\*UNREVIEWED\*\*

**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**

Environmental properties: none (Analogous to a product of similar composition )

Method: OECD 211

Species: Daphnia magna

Test duration: 21d

Result: EL 50 (Reproductive toxicity, Immobilisation) > 100 mg/l ; NOELR (Immobilisation) = 100 mg/l



CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h]   [d]	Species	Source
	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
112-90-3	(Z)-octadec-9-enylamine					
	Acute fish toxicity	LC50	0,11 mg/l	96 h	Pimephales promelas	US EPA summary

#### 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.

CAS No	Chemical name				
	Method	Value	d	Source	
	Evaluation				
	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				
112-90-3	(Z)-octadec-9-enylamine				
	OECD 301D / EEC 92/69 annex V, C.4-E	66%	28	ECHA Dossier	
	Easily biodegradable (concerning to the criteria of the OECD)				

#### 12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

##### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
112-90-3	(Z)-octadec-9-enylamine	>3,11

#### 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

##### 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**

**Land transport (ADR/RID)**

- 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**

**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  
Additional information: 2012/18/CE (SEVESO III) Annex I, Part 1: No classification according annex I.  
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 - 30.04.2015

**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

**Relevant R-phrases (Number and full text)**

22	Harmful if swallowed.
34	Causes burns.
38	Irritating to skin.
41	Risk of serious damage to eyes.
43	May cause sensitisation by skin contact.
48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
50	Very toxic to aquatic organisms.
51	Toxic to aquatic organisms.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.
65	Harmful: may cause lung damage if swallowed.

**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.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**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.

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