

Thermal H20S

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

1.1. Product identifier

Trade name

Thermal H20S

Article No.

5L: 8940109 10L: 8940108

REACH registration number

Not relevant.

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

Relevant identified uses

Tempering fluid

Working temperature range: 0°C....+200°C

Not suitable for use in

No data available.

1.3. Details of the supplier of the safety data sheet

Supplier

JULABO GmbH

Address

Gerhard-Juchheim-Straße 1

77960 Seelbach

Germany

Telephone

+49(0)782351-180

Email

service.de@julabo.com

Web site

www.julabo.com

Contact person

Verkauf und technische Beratung

Email

service.de@julabo.com

1.4. Emergency telephone number

+49(0)89-19240 (24h)

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Available outside office hours

No

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Hazardous to the aquatic environment — Chronic hazard category 3

Hazard statements

H412

Description

Spillage and extinguishing water can lead to environmental pollution of water bodies.

2.2. Label elements

Hazard statements

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P501 Dispose of contents/container to Disposal in accordance with official regulations.

2.3. Other hazards

This mixture contains no substances assessed as PBT or vPvB >0.1%

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
2-Ethylhexanoic acid, iron salt	19583-54-1 243-169-8 01-2120796720-47- xxxx -	>0.01 - <0.25%	Acute Tox. 4 - oral, Repr. 2	H302, H361d - -	-
octamethylcyclotetrasiloxane; [D4]	556-67-2 209-136-7 01-2119529238-36 014-018-00-1	>0.01 - <0.1%	Repr. 2, Aquatic Chronic 1	H361f, H410 - M-chro=10	SVHC

Substance additional information

SVHC = Substance of Very High Concern.

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Remove soiled, soaked clothing immediately. If symptoms occur or in case of doubt, seek medical advice.
Remove the casualty from the danger zone. Do not leave affected persons unattended. If unconscious, keep the patient in the recovery position and do not administer anything by mouth.

Inhalation

Provide rest, warmth and fresh air. In case of accident or if you feel unwell, seek medical advice immediately (show this label or the safety data sheet if possible).

Skin contact

In case of contact with skin, remove soiled, soaked clothing immediately and wash skin immediately with plenty of soap and water. Consult a doctor in case of skin reactions.

Eye contact

Immediately rinse carefully and thoroughly with eye wash or water. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth with water. Do NOT induce vomiting.

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

No symptoms and effects are known to date.

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

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Alcohol resistant foam. Spray water Water spray. BC powder Sand

Unsuitable extinguishing media

Water full jet

5.2. Special hazards arising from the substance or mixture

Carbon monoxide (CO). Carbon dioxide (CO₂). Formaldehyde.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Toxic gases may be produced in the event of fire.

Do not inhale explosion and fire gases.

Self-contained breathing apparatus.

Do not allow extinguishing water to enter sewers and bodies of water.

Fight fire with normal precautions from a reasonable distance.

Collect contaminated extinguishing water separately and do not allow it to enter the sewage system.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Bring people to safety. In case of spills, beware of slippery floors and surfaces. Use personal protective equipment. A respirator must be worn when exposed to vapors, dusts, aerosols and gases.

6.2. Environmental precautions

Prevent the product from entering the sewage system or surface and ground water. Prevent the area from spreading (e.g. by containing the oil booms). Retain and dispose of contaminated wash water.

6.3. Methods and material for containment and cleaning up

Pick up mechanically, cover the sewers Wipe up with absorbent material (e.g. cloth, fleece). Absorb spillage: Sawdust, kieselguhr (diatomite), sand, universal binder Use of adsorbent materials. In case of spills, beware of slippery floors and surfaces. Dispose of in suitable containers. Ventilate the affected area.

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6.4. Reference to other sections

Hazardous combustion products: see section 5 Personal protective equipment - see section 8 Incompatible materials: see section 10

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Use only in well ventilated areas Do not breathe dust/fume/gas/mist/vapours/spray. Vapors/aerosols must be safely extracted directly at the point of origin. Keep away from sources of ignition - No smoking. Take action to prevent static discharges.

General hygiene

Avoid contact with eyes and skin. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs. Do not use containers for chemicals that are normally intended for holding food.

7.2. Conditions for safe storage, including any incompatibilities

Keep container dry, tightly closed and store in a cool, well-ventilated place. Keep only in original packaging. Keep away from sources of ignition - No smoking. Take action to prevent static discharges.

LGK according to TRGS 510: D07.261188620

7.3. Specific end use(s)

There is no information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

Does not contain substances in quantities above the concentration limits for which an occupational exposure limit is specified.

DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
2-Ethylhexanoic acid, iron salt (19583-54-1/243-169-8)	DNEL	Chronic (long term) Inhalation	0.64 mg/m ³	Workers	Systemic
2-Ethylhexanoic acid, iron salt (19583-54-1/243-169-8)	DNEL	Chronic (long term) Dermal	0.36 mg/kg bw/day	Workers	Systemic

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Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
2-Ethylhexanoic acid, iron salt (19583-54-1/243-169-8)	DNEL	Chronic (long term) Inhalation	0.16 mg/m ³	Consumers	Systemic
2-Ethylhexanoic acid, iron salt (19583-54-1/243-169-8)	DNEL	Chronic (long term) Dermal	0.18 mg/kg bw/day	Consumers	Systemic
2-Ethylhexanoic acid, iron salt (19583-54-1/243-169-8)	DNEL	Chronic (long term) Oral	0.18 mg/kg bw/day	Consumers	Systemic
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	DNEL	Chronic (long term) Inhalation	73 mg/m ³	Workers	Systemic
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	DNEL	Chronic (long term) Inhalation	73 mg/m ³	Workers	Local
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	DNEL	Chronic (long term) Inhalation	13 mg/m ³	Consumers	Systemic
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	DNEL	Chronic (long term) Inhalation	13 mg/m ³	Consumers	Local
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	DNEL	Chronic (long term) Oral	3.7 mg/kg bw/day	Consumers	Systemic

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Freshwater	1.5 µg/l
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Marine water	0.15 µg/l
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Sewage Treatment Plant	10 mg/l
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Sediment (freshwater)	3 mg/kg
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Sediment (marine water)	0.3 mg/kg
octamethylcyclotetrasiloxane; [D4] (556-67-2/209-136-7)	PNEC	Soil	0.54 mg/kg

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8.2. Exposure controls

Appropriate engineering controls

Technical measures and the use of appropriate work procedures take precedence over the use of personal protective equipment.

Personal protective equipment shall be used if the risks cannot be avoided or sufficiently limited by collective technical means of protection or by work organisation measures, methods or procedures.

Open windows and doors to provide sufficient ventilation. If this is not possible, increase air exchange by using ventilation.

Personal Protective Equipment Symbols



Eye / face protection

Use safety goggles with side protection.

Hand protection

Wear suitable protective gloves. A chemical protective glove tested in accordance with EN 374 is suitable. Check for leaks/impermeability before use.

If you intend to reuse the gloves, clean them before taking them off and air them thoroughly afterwards.

It is recommended to clarify the chemical resistance of the mentioned protective gloves for special applications with the glove manufacturer.

Butyl rubber.

Isobutene-isoprene rubber

NBR: Acrylonitrile butadiene rubber

Other skin protection

Include recovery phases to regenerate the skin.

Preventive skin protection (protective creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

Normally no personal respiratory protection necessary. Respiratory protection is required for: Aerosol or mist formation, full/half/quarter mask (EN 136/140), type: A-P2 (combination filter for particles and organic gases and vapors, identification color: brown/white)

Environmental exposure controls

Use suitable containers to avoid contamination of the environment.

Prevent the product from entering the sewage system or surface and ground water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

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Colour

Brownish.

Odour

Faintly perceptible

Melting point / freezing point

-70 °C

Boiling point or initial boiling point and boiling range

424 °C

Flammability

this material is flammable but not easily ignited

Lower and upper explosion limit

Not determined.

Flash point

> 200 °C

Method

(ISO 2592)

Auto-ignition temperature

> 385 °C

Decomposition temperature

Not relevant.

pH

Not applicable.

Kinematic viscosity

20 mm²/s

Method

(20°C)

Solubility

Insoluble in water.

Partition coefficient n-octanol/water

Not determined.

Vapour pressure

Not determined.

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Density and/or relative density0.95 g/cm³**Method**

(20°C)

Relative vapour density

There is no information available.

Particle characteristics

not relevant (mixture)

9.2. Other information

Hazard classes according to GHS (physical hazards): not relevant

Other

Temperature class T2 (maximum permissible surface temperature of the equipment: 300°C)

SECTION 10: Stability and reactivity**10.1. Reactivity**

Regarding incompatibilities: see below "Conditions to avoid" and "Incompatible materials".

10.2. Chemical stability

Regarding incompatibilities: see below "Conditions to avoid" and "Incompatible materials".

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

There are no known conditions to be specifically avoided.

10.5. Incompatible materials

Oxidizing agent

10.6. Hazardous decomposition products

Measurements have shown that at temperatures above approx. 150°C a small amount of formaldehyde is split off by oxidative degradation.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

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Product / Substance name CAS / EC no.	Value / Dose	Exposure route	Method / Guideline
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	> 2.000 mg/kg	Dermal	Acute toxicity estimate ATE (Dermal)
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	1.300 mg/kg	Oral	Acute toxicity estimate ATE (Oral)
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	> 5.000 mg/kg	Oral	Acute toxicity estimate ATE (Oral)

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species	Method / Guideline	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	-	-	-	-	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	No skin irritation	24 hours	Rabbit	OECD test guideline 404	-

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	-	-	-	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	No eye irritation	Rabbit	OECD test guideline 405	-

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	-	-	-	The criteria for categorisation in this hazard class are not met.

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Product / Substance name CAS / EC no.	Result	Species	Method / Guideline	Other
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	No skin sensitizer	Guinea Pig	OECD Test Guideline 406	-

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Exposure route	Species	Method / Guideline	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	-	-	-	-	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	Negative.	inhalative	Rat	OECD test guideline 475	-
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	Negative.	Oral	Rat	OECD test guideline 478	-

Carcinogenicity

Product / Substance name CAS / EC no.	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	There are no data available.

Reproductive toxicity

Product / Substance name CAS / EC no.	Result	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	-	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	Suspected of damaging fertility.	-

STOT-single exposure

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Product / Substance name CAS / EC no.	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	There are no data available.

STOT-repeated exposure

Product / Substance name CAS / EC no.	Other
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	The criteria for categorisation in this hazard class are not met.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	There are no data available.

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

No additional information is available.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

Product / Substance name CAS / EC no.	Value / Result	Duration of exposure	Endpoint of the test	Species	Remark
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	75 mg/l	21 Tage	EC50	aquatic invertebrates	-
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	10 µg/l	14 days	LC50	Fish	Based on available data, up to the maximum solubility of the product, no classification-relevant effects on aquatic organisms

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Product / Substance name CAS / EC no.	Value / Result	Duration of exposure	Endpoint of the test	Species	Remark
					are expected. on aquatic organisms are to be expected. According to current experience, no adverse effects in sewage treatment plants are expected. The material is not harmful to aquatic organisms (LC50/EC50/IC50/LL50/EL50 > 100 mg/L for the most sensitive species). Conclusion by ana- logy.
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	>15 µg/l	21 days	EC50	aquatic invertebrates	Based on available data, up to the max- imum solubility of the product, no classifica- tion-relevant effects on aquatic organisms are expected. on aquatic organisms are to be expected. According to current experience, no adverse effects in sewage treatment plants are expected. The material is not harmful to aquatic organisms (LC50/EC50/IC50/LL50/EL50 > 100 mg/L for the most sensitive species). Conclusion by ana- logy.

Chronical toxicity

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Product / Substance name CAS / EC no.	Value / Result	Duration of exposure	Endpoint of the test	Species
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	10 µg/l	14 days	LC50	Fisch
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	> 15 µg/l	21 days	EC50	aquatic invertebrates

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result	Method / Guideline
2-Ethylhexanoic acid, iron salt 19583-54-1 / 243-169-8	DOC reduction	28 days	99%	ECHA
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	-	29 days	3,7 %	ECHA

12.3. Bioaccumulative potential

Bioaccumulative potential

Product / Substance name CAS / EC no.	LogKow / LogPow	Bioconcentration factor (BCF)
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	6,488 (25,1°C) / -	12.400

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

Product / Substance name CAS / EC no.	PBT / vPvB
octamethylcyclotetrasiloxane; [D4] 556-67-2 / 209-136-7	Octamethylcyclotetrasiloxane (D4) meets the current criteria of Annex XIII of the EU REACH Regulation for PBT and vPvB and has been placed on the Candidate List of Substances of Very High Concern (SVHCs). D4 does not behave not comparable to the known PBT/vPvB substances. According to the

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Product / Substance name CAS / EC no.	PBT / vPvB
	<p>interpretation of the available data the silicone industry's interpretation of the available data, the scientific evidence from field trials does not essentially does not indicate that D4 is not biomagnifying in aquatic and terrestrial food chains. D4 in the air decomposes through naturally occurring processes in the atmosphere. It is not expected that non D4 residues in air that do not decompose in this way are not expected to be deposited in water, soil or living organisms. become deposited.</p>

12.6. Endocrine disrupting properties

no ingredient is listed ≥ 0.1 %

12.7. Other adverse effects

Other adverse effects

There are no data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Disposal in accordance with Directive 2008/98/EC on waste and hazardous waste. Contact the responsible authorized waste disposal company for waste disposal.

The assignment of the waste code number/waste designation is to be carried out in accordance with the EWC on a sector- and process-specific basis.

Do not discharge into drains, water courses or onto the ground. Avoid release to the environment.

Obtain special instructions/consult safety data sheet.

Packaging

Completely emptied packaging can be recycled. Contaminated packaging shall be treated in the same way as the substance.

Other

Please observe the relevant national or regional regulations. Waste must be separated in such a way that it can be kept separately by the municipal or national waste disposal facilities.

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SECTION 14: Transport information

14.1. UN number

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/AND/RID).

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

Not relevant.

14.3. Transport hazard class(es)

Label

None.

14.4. Packing group

not assigned

14.5. Environmental hazards

Not hazardous to the environment according to dangerous goods regulations

14.6. Special precautions for user

No additional information is available.

14.7. Maritime transport in bulk according to IMO instruments

The freight is not transported in bulk.

SECTION 15: Regulatory information

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

EU regulations

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

SVHC = Substance of Very High Concern. no ingredient is listed ≥ 0.1 %

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS): no ingredient is listed ≥ 0.1 %

Ordinance on Persistent Organic Pollutants (POPs): nicht gelistet

National regulations

D15.261203910 D15.261183960

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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SECTION 16: Other information

Changes to previous revision

Revision of all sections and change of layout

Abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE - Acute Toxicity Estimate

C&L - Classification and Labelling

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CMR - Carcinogen, Mutagen, or Reproductive Toxicant

CSR - Chemical Safety Report

DMEL - Derived Minimum Effect Level

DNEL - Derived No Effect Level

EC50 - Half Maximal Effective Concentration

ECHA - European Chemicals Agency

GHS - Globally Harmonized System

IATA - International Air Transport Association

IMDG - International Maritime Dangerous Goods

Kow - octanol-water partition coefficient

LC50 - Lethal Concentration to 50 % of a test population

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)

LoW - List of Wastes

OEL - Occupational Exposure Limit

PBT - Persistent, Bioaccumulative and Toxic substance

PEC - Predicted Environmental Concentration

PNEC - Predicted No Effect Concentration(s)

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

SCBA - Self-Contained Breathing Apparatus

STOT - Specific Target Organ Toxicity

SVHC - Substances of Very High Concern

UFI - Unique Formula Identifier

vPvB - Very Persistent and Very Bioaccumulative

Phrase meaning

Aquatic Chronic 3 - Hazardous to the aquatic environment — Chronic hazard category 3

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Repr. 2 - Reproductive toxicity, hazard category 2

Aquatic Chronic 1 - Hazardous to the aquatic environment — Chronic hazard category 1

H302 Harmful if swallowed.

H361d Suspected of damaging the unborn child.

H361f Suspected of damaging fertility.

H410 Very toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.