

Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

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

1.1. Product identifier

Mara® Shield 5 L UV-FXG

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

Use of the substance/preparation

Roller Coating

1.3. Details of the supplier of the safety data sheet

Address

Marabu GmbH & Co. KG
Asperger Strasse 4
71732 Tamm
Germany
Telephone no. +49-7141/691-0
Fax no. +49-7141/691-147
Information Department product safety
provided by /
telephone
E-mail address of PRSI@marabu.de
person
responsible for
this SDS

1.4. Emergency telephone number

(+49) (0)621-60-43333

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic chronic 2	H411

Classification in accordance with EC directives 1999/45/EC and 67/548/EEC

Classification Xi, R36/38
R43
N, R51/53

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Safety data sheet in accordance with regulation (EC) No 1907/2006

Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

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Substance number: 362198004

Replaces Version: 4 / WORLD

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Warning

Hazard statements

H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P264.1 Wash hands thoroughly after handling.
 P273 Avoid release to the environment.
 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.
 P391 Collect spillage.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains Hexamethylene diacrylate;2-Phenoxyethyl acrylate;Isobutyl methacrylate

2.3. Other hazards

No special hazards have to be mentioned.

SECTION 3: Composition/information on ingredients *****3.2. Mixtures****Chemical characterization**

UV - curing liquid coating based on reactive acrylates

Hazardous ingredients *****2-Phenoxyethyl acrylate**

CAS No. 48145-04-6
 EINECS no. 256-360-6
 Registration no. 01-2119980532-35
 Concentration >= 25 < 50 %
 Classification R43
 N, R51/53

Classification (Regulation (EC) No. 1272/2008)

Skin Sens. 1 H317
 Aquatic chronic 2 H411

Hexamethylene diacrylate

CAS No. 13048-33-4
 EINECS no. 235-921-9
 Registration no. 01-2119484737-22
 Concentration >= 25 < 50 %
 Classification Xi, R36/38
 R43

Classification (Regulation (EC) No. 1272/2008)

Eye Irrit. 2 H319
 Skin Irrit. 2 H315
 Skin Sens. 1 H317

3,3,5-Trimethylcyclohexyl acrylate

CAS No. 86178-38-3

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

EINECS no. 289-200-9
Concentration >= 2,5 < 10 %
Classification Xi, R36/37/38
N, R51/53

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 3 H335
Aquatic chronic 2 H411

Isobutyl methacrylate

CAS No. 97-86-9
EINECS no. 202-613-0
Concentration >= 0,1 < 1 %
Classification Xi, R36/37/38
N, R50
R10
R43

Classification (Regulation (EC) No. 1272/2008)

Aquatic Acute 1 H400
Flam. Liq. 3 H226
Eye Irrit. 2 H319
STOT SE 3 H335
Skin Irrit. 2 H315
Skin Sens. 1 H317

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners. In case of accidental skin contact avoid concurrent exposure to the sun or other sources of UV light, which may increase the sensitivity of skin.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

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

Hints for the physician / treatment



Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO₂-blanket, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO); dense black smoke

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Skin and eye contact constitutes the principal hazard. . Persons with a history of skin sensitisation problems should not be employed in any process in which this mixture is used. Use only in well-ventilated areas. Isolate from sources of heat, sparks and open flame. Avoid skin and eye contact. Avoid the inhalation of dust, particulates and spray mist arising from the application of this mixture. Avoid inhalation of dust from sanding. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires B (Combustible liquid substances)

Temperature class T3

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Roller Coating

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No/Minimal Effect Levels (DNEL/DMEL)

Hexamethylene diacrylate

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	2,08	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,66	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	7,24	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	2,77	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	24,48	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Professional use	
Duration of exposure	Long term	

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

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Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,66	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Professional use	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	7,24	mg/m ³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Professional use	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	2,08	mg/kg/d
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	3	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	21,16	mg/m ³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,5	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	5,22	mg/m ³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	1,5	mg/kg

2-Phenoxyethyl acrylate

Type of value	Derived No Effect Level (DNEL)
Reference group	Worker

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	10	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	77	mg/m ³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1,5	mg/kg/d

Predicted No Effect Concentration (PNEC)

Hexamethylene diacrylate

Type of value	PNEC	
Type	Soil	
Concentration	0,00397	mg/kg

Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,0137	mg/kg

Type of value	PNEC	
Type	Freshwater	
Concentration	0,0015	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0,00015	mg/l

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	2,7	mg/l

Type of value	PNEC	
Type	Freshwater	
Concentration	0,0144	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0,00144	mg/l

Type of value	PNEC	
Type	Water (intermittent release)	
Concentration	0,144	mg/l

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	10	mg/l

Safety data sheet in accordance with regulation (EC) No 1907/2006

Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Type of value	PNEC	
Type	Sediment	
Concentration	0,186	mg/kg

Type of value	PNEC	
Type	Marine sediment	
Concentration	0,0186	mg/kg

Type of value	PNEC	
Type	Soil	
Concentration	0,0284	mg/kg

2-Phenoxyethyl acrylate

Type of value	PNEC	
Type	Freshwater	
Concentration	0,002	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0,0002	mg/l

Type of value	PNEC	
Type	Water (intermittent release)	
Concentration	0,0121	mg/l

Type of value	PNEC	
Type	Soil	
Concentration	0,006	mg/kg

Type of value	PNEC	
Type	Marine sediment	
Concentration	0,004	mg/kg

Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,04	mg/kg

8.2. Exposure controls**Exposure controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Respiratory protection

In situations where misting or flying may occur use appropriate certified respirators.

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling nitrile rubber gloves with textile undergloves are required.

Material thickness	>	0,5	mm
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Breakthrough time	>	30	min
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PVC or rubber gloves are not recommended.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Safety data sheet in accordance with regulation (EC) No 1907/2006

Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

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Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Personnel should wear protective clothing.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Form	liquid, viscous
Colour	transparent
Odour	of acrylic monomers
Odour threshold	
Remarks	No data available
pH value	
Remarks	Not applicable
Melting point	
Remarks	not determined
Freezing point	
Remarks	not determined
Initial boiling point and boiling range	
Remarks	Not applicable
Flash point	
Value	> 100 °C
Method	ASTM D 6450 (CCCFP)
Evaporation rate (ether = 1) :	
Remarks	not determined
Flammability (solid, gas)	
Not applicable	
Upper/lower flammability or explosive limits	
Remarks	not determined
Vapour pressure	
Value	< 0,1 hPa
Temperature	20 °C
Method	calculated
Vapour density	
Remarks	not determined
Density	
Value	1,050 g/cm ³
Temperature	20 °C
Method	DIN EN ISO 2811
Solubility in water	
Remarks	partially miscible

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

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Partition coefficient: n-octanol/water

Remarks Not applicable

Ignition temperature

Value appr. 235 °C

Source Literature value

Viscosity

Remarks

Remarks not determined

Efflux time

Value > 150 s

Method DIN 53211 4 mm

Explosive properties

evaluation no

Oxidising properties

evaluation None known

9.2. Other information

Other information

The physical specifications are approximate values and refer to the used safety relevant component(s).

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability

This mixture contains materials which are unstable under the following conditions: exposure to heat (>50°C), strong UV sources.

10.3. Possibility of hazardous reactions

Keep away from free radical initiators, peroxides, strong alkalis or reactive metals.

10.4. Conditions to avoid

These could cause the product to polymerise exothermically. Unintentional contact with them should be avoided. When exposed to high temperatures may produce hazardous decomposition products.

10.5. Incompatible materials

No hazardous reactions when stored and handled according to prescribed instructions.

10.6. Hazardous decomposition products

See chapter 5.2 (Firefighting measures - Special hazards arising from the substance or mixture).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity (Components)

2-Phenoxyethyl acrylate

Species	rat	
LD50	> 5000	mg/kg
Method	OECD 401	

Sensitization (Components)

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Hexamethylene diacrylate

Species evaluation	guinea pig sensitizing
Method	OECD 406

Experience in practice

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact. Acrylate components of the mixture have irritating properties. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms such as redness, blistering, dermatitis, etc. Cases of allergic skin reactions have been observed. The liquid splashed in the eyes may cause irritation. The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract. Ingestion may cause nausea, weakness and central nervous system effects.

Other information

There are no data available on the mixture itself.
The mixture has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself. Do not allow to enter drains or water courses. The mixture has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

12.2. Persistence and degradability

General information

No data available

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Remarks	Not applicable
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12.4. Mobility in soil

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Disposal recommendations for the product

Do not allow to enter drains or water courses.

Wastes and emptied containers should be classified in accordance with relevant national regulation.

The European Waste Catalogue classification of this product, when disposed of as waste is

EWC waste code 08 03 12* waste ink containing dangerous substances

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

14.1. UN number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Phenoxyethyl acrylate)

14.3. Transport hazard class(es)

Class 9

Label 9

14.4. Packing group

Packing group III

Limited Quantity 5 I

Transport category 3

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS

Tunnel restriction code E

Marine transport IMDG/GGVSee

14.1. UN number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Phenoxyethyl acrylate)

14.3. Transport hazard class(es)

Class 9

14.4. Packing group

Packing group III

14.5. Environmental hazards

Marine Pollutant

Air transport ICAO/IATA

14.1. UN number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Phenoxyethyl acrylate)

14.3. Transport hazard class(es)

Class 9

14.4. Packing group

Packing group III

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

Date revised: 21.01.2015

Substance number: 362198004

Replaces Version: 4 / WORLD

Print date: 01.02.15

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

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

no

SECTION 15: Regulatory information

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

Other information

The product does not contain substances of very high concern (SVHC).

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

R-phrases listed in Chapter 3

10	Flammable.
36/37/38	Irritating to eyes, respiratory system and skin.
36/38	Irritating to eyes and skin.
43	May cause sensitization by skin contact.
50	Very toxic to aquatic organisms.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard statements listed in Chapter 3

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

CLP categories listed in Chapter 3

Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***

This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Safety data sheet in accordance with regulation (EC) No 1907/2006



Trade name: Mara® Shield 5 L UV-FXG

Version: 5 / WORLD

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Replaces Version: 4 / WORLD

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The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.
As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.
The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.