W4 WATER REPELLENT

MATERIAL SAFETY DATA SHEET

Substance/preparation and company identification

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Composition/information on ingredients

Chemical Characteristics: **Alkylsilicone resin with alkoxy groups**

EINECS/ ELINCS-No.	CAS No.	Material	Content %		Warning Label (EU)	
			From	Until	Symbol	R-Phrases
	67923-07-3	Polydimethysiloxane, (((3-((2-aminoethyl) amino) propyl) silyli-dyne) tris (oxy)) tris-, methoxy-terminated	>20.0		Xi	38 - 41
251-995-5	34396-03-	Trimethoxy (2, 4, 4- trimethyl pentyl)	>=40.			10–52/53
201-083-8	78-10-4	Tetraethyl silicate		<20.	Xn	10–20–36/37
200-580-7	64-19-7	Acetic acid		<10.	C	10-35
200-659-6	67-56-1	Methanol		<1.0	F, T	11-23/24/25-

R-Phrase	Description
R38 R41	Irritating to skin. Risk of serious damage to eyes.
R10 R52/53	Flammable. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R10 R20 R36/37	Flammable. Harmful by inhalation. Irritating to eyes and respiratory system.
R10 R35	Flammable. Causes severe burns.
R11 R23/24/25 R39/23/24/25	Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R10	Flammable.
R41	Risk of serious damage to eyes.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further hazards to man and environment:
Inhalation of aerosol spray may damage health. Product hydrolysed with the formation of methanol (CAS no. 67-56-1). Methanol is toxic if inhaled, swallowed or comes into contact with the skin (T, R23/24/25), leads to irreversible damage if inhaled, comes into contact with the skin or is swallowed (T, 39/23/24/25) and is highly flammable (F, R11).

First-aid measures

After inhalation:
- Move to fresh air, keep the victim laying down and restful. If breathing has stopped, give artificial respiration. Seek medical advice and clearly identify substance.

After contact with the skin:
- Wash with plenty of water or soap and water; immediately remove all contaminated clothing. Seek medical advice in case of continuous irritation.

After contact with the eyes:
- Rinse immediately with plenty of water for 10-15 minutes and seek medical advice. Keep eyelids well open to rinse the whole eye surface and eyelids with water. Seek medical advice and clearly identify substance. Continue to bathe eyes during transport to medical practitioner.

After swallowing:
- If conscious, give several small portions of water to drink. Seek medical advice immediately and produce the label or packaging.

Advice for the physician:
- In case of contact with water material splits off (also in gastrointestinal tract) methanol in larger amounts; therefore consider poisoning on methanol and also observe known period of latency of several days.

Fire-fighting measures

Suitable extinguishing media:
- Water mist, extinguishing powder, alcohol-resistant foam, carbon dioxide and sand.

Extinguishing media which must not be used for safety reasons:
- Water spray and water jet .

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:
- Hazardous combustion products: nitrous gases.

Special protective equipment for fire fighting:
- Use respiratory protection independent of recirculated air.

Accidental release measures

Personal precautions:

- Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Avoid inhaling mists and vapours. If material is released indicate risk of slipping.

Environmental precautions:

- Prevent material from entering surface waters, drains or sewers and open soil. Contain any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers.

Methods for cleaning up:

- Do not flush away with water. For small amounts: Absorb with a liquid binding material such as diatomaceous earth and dispose of according to local/state/federal regulations. Contain larger amounts and pump up into suitable containers. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Exhaust vapours.

Further information:

- Eliminate all sources of ignition.

Handling and Storage

Handling

Precautions for safe handling:

- Avoid formation of aerosols. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection). Ensure adequate ventilation. Keep away from incompatible substances (refer to *).Spilled substance increases risk of slipping.

Precautions against fire and explosion:

- Product can separate methanol. Vapours may form in closed rooms with air mixtures, leading to explosion in the presence of sources of ignition, even in empty, uncleaned vessels. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.

Storage

Conditions for storage rooms and vessels:

- None known

Advice for storage of incompatible materials:

- Avoid contact with acids.

Further information for storage:

- Protect against moisture. Keep container tightly closed and store in a cool, well ventilated place.

Exposure controls and personal protection equipment

Exposure in the work place limited and controlled:
General protection and hygiene measures:

- Avoid contact with eyes and skin. Do not inhale gases/ vapours/ aerosols. Do not eat, drink or smoke when handling.

Personal protection equipment
Respiratory protection:

- In case of long or strong exposure: gas mask filter ABEK.

Hand protection:

- Protective gloves made of butyl rubber. Gloves suitable for up to 60 minutes' use.

Eye protection:

- Tight fitting protective goggles. Provide workstation with eye bathing equipment.

Skin protection:

- Protective clothing.

Exposure to the environment limited and controlled:

- Prevent material from introduction into surface water and into soil.

Further information for system design and engineering measures:

- Observe information in handling and storage section.

Physical and chemical properties

General information

- Physical state / form : liquid
- Colour : yellowish
- Odour : slight

Important information about the protection of health, safety and the environment Method (67/548/EEC):

- Flash point : 25 °C
- Ignition temperature : 310 °C
- Density : 0,95 - 0,97 g/cm3 at 25 °C (DIN 51757)
- Water solubility / miscibility : completely miscible
- pH-Value : 5 - 6 at 25 °C (500 g/l H2O)
- Viscosity (dynamic) : 1 - 10 mPa.s at 25 °C (DIN 51562)

Other information

- Re 9.2 solubility in water: Hydrolytic decomposition occurs. Explosion limits for released methanol: 5.5 - 44%(V). Explosion limits for released ethanol: 3.5 -15%(V).

Stability and reactivity

General information:

- If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

Conditions to avoid:

- Moisture

Materials to avoid:

- Reacts with water, basic substances and acids. Reaction causes the formation of methanol.

Hazardous decomposition products:

- Under the effect of humidity, water and protic agents: methanol and ethanol. The following applies for the silicone content of the substance: Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

Toxicological information

General information:

- Avoid inhalation. The toxicology results listed below are based on tests with a similar material.

Toxicological tests

Acute toxicity (LD50/LC50-values relevant to classification):

Exposition	Value/value range	Species	Source
Oral	>2000 mg/kg	Rat (Limit Test)	Test report
Dermal	>2000 mg/kg	Rat (Limit Test)	Test report
By inhalation	>0.72 mg/l/h (spray/	Rat (Limit Test)	Test report

Specific symptoms in animal test:

- Inhalation in the form of aerosol mist: At the technically highest possible concentration no mortality in animal test. Product causes: difficulty in breathing, impaired coordination. Evaluation in analogy to a tested similar product: 10% solution in water irritates the eyes.

Primary irritation:

Exposition	Effect	Species/Test system	Source
To skin	Not irritating	Rabbit	Test report
To eyes	Serious damages to	Rabbit	Test report

Sensitization:

Exposition	Effect	Test method	Species	Source
To skin	Not sensitizing	Magnusson-Kligmann	Guinea-pig	Test report

Further toxicological information:

- Risk of serious damage to eyes. Product(s) of hydrolysis: Attention! Product may hydrolyse in gastro-intestinal tract and produce methanol. According to literature methanol (67-56-1) irritates mucuous membranes, has skin drying and narcotic effects up to coma or death. Absorption by the skin is possible. Possibility of damage to heart, kidneys, liver and optic nerves (blindness) over a period of time. According to literature, ethanol (67-17-5) irritates the mucous membranes, slightly irritates the skin, degreases the skin, is narcotic and may cause liver damage.

Ecological information

Ecotoxicity:

- Classification based on ingredients: Harmful to aquatic organisms. May have long-term damaging effects in in-shore waters.

Effects in sewage treatment plants (bacteria toxicity: respiration-/reproduction inhibition):

- Do not introduce large amounts into purification plants.

Persistence and degradability
Biodegradation / further information:

- The product of hydrolysis (methanol) is highly biodegradable. The hydrolysis product (Ethanol) is easily biologically degradable.

Further information:

- By hydrolysis: Methanol, ethanol and silanol- and/or siloxanol-compounds.

Further ecological information
General information:

- Prevent material from introduction into surface water and into soil.

Disposal considerations

Material
Recommendation:

- Dispose of according to regulations by incineration in a special waste incinerator. Observe local/state/federal regulations.

Uncleaned packaging
Recommendation:

- Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations

Regulatory Information

Warning Label (EU)

´	Xi	Irritant

R-Phrase	Description
R10	Flammable.
R41	Risk of serious damage to eyes.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-Phrase	Description
S23	Do not breathe vapour/spray.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical ad-
S39	Wear eye /face protection.
S51	Use only in well-ventilated areas.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Transport Information

Land transport GGVSE/ADR and RID Road ADR:

- Valuation : Hazardous product
- Class : 3
- Packaging Group : III
- Hazard No. : 30
- UN no. : 1993
- Proper Shipping Name : Entzündbarer flüssiger Stoff, n.a.g.
- Technical name : (Enthält Trimethoxy(2,4,4-trimethylpentyl)silan und Tetraethylsilicat)

Railway RID:

Valuation : Hazardous product
Class : 3
Packaging Group : III
UN no. : 1993

Inland navigation GGVBinsch/ADNR
Transport by sea GGVSee/IMDG-Code

- Valuation: Hazardous product
- Class: 3
- Packaging Group: III
- UN no.: 1993
- Proper Shipping Name: Flammable liquid, n.o.s.
- Technical name: (Contains Trimethoxy(2,4,4-trimethylpentyl)silane and Tetraethylsilicate)
- Marine Pollutant: no

Air transport ICAO-TI/IATA-DGR

- Valuation: Hazardous product
- Class: 3
- Packaging Group: III
- UN no.: 1993
- Proper Shipping Name: Flammable liquid, n.o.s.
- Technical name: (Contains Trimethoxy(2,4,4-trimethylpentyl)silane and Tetraethylsilicate)

Transport/further information
Postal and courier service:

- German postal dispatch: 3000 ccm per container / 6000 ccm per package

Other Information

- Any other intended applications should be discussed with the manufacturer.
- If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: war99@singnet.com.sg
- The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.