



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name: DOWSIL™ 1-6184 Water Repellent**

**Issue Date: 01/25/2023**

**Print Date: 01/26/2023**

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. IDENTIFICATION

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**Product name:** DOWSIL™ 1-6184 Water Repellent

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Impregnation agents

### COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY  
2211 H.H. DOW WAY  
MIDLAND MI 48674  
UNITED STATES

**Customer Information Number:**

800-258-2436

SDSQuestion@dow.com

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** CHEMTREC +1 800-424-9300

**Local Emergency Contact:** 800-424-9300

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids - Category 3

Acute toxicity - Category 4 - Oral

Serious eye damage - Category 1

Skin sensitisation - Category 1

Specific target organ toxicity - single exposure - Category 2

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

### Label elements

**Hazard pictograms**



Signal word: **DANGER!**

### Hazards

Flammable liquid and vapour.

Harmful if swallowed.

May cause an allergic skin reaction.

Causes serious eye damage.

May cause damage to organs (Eyes, Central nervous system).

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

### Precautionary statements

#### Prevention

Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ ventilating/ lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe spray.

Wash skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

Wear protective gloves/ eye protection/ face protection.

#### Response

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER and/or doctor.

IF exposed or concerned: Call a POISON CENTER/ doctor.

If skin irritation or rash occurs: Get medical advice/ attention.

Wash contaminated clothing before reuse.

In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

#### Storage

Store in a well-ventilated place. Keep cool.

Store locked up.

#### Disposal

Dispose of contents and/or container to an approved waste disposal plant.

### Other hazards

Static-accumulating flammable liquid.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**Synonyms:** Silsesquioxanes, 3-[(2-aminoethyl)amino]propyl Me, methoxy-terminated

This product is a substance.

**Substance name:** Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated

**CASRN:** 145775-27-5

Component	CASRN	Concentration
Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated	145775-27-5	>= 80.0 - <= 93.0 %
Methanol	67-56-1	<= 9.99 %
N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine	1760-24-3	>= 4.0 - <= 6.0 %
Methyltrimethoxysilane	1185-55-3	>= 3.0 - <= 4.0 %

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### 4. FIRST AID MEASURES

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#### Description of first aid measures

##### General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention without delay. Wash clothing before reuse. Properly dispose of contaminated leather items, such as shoes, belts, and watchbands. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Do NOT induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml)

liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child].

**Most important symptoms and effects, both acute and delayed:**

Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. May cause damage to organs. May cause damage to organs through prolonged or repeated exposure if inhaled.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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**5. FIREFIGHTING MEASURES**

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**Extinguishing media**

**Suitable extinguishing media:** Alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Dry sand.

**Unsuitable extinguishing media:** High volume water jet. Do not use direct water stream..

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Silicon oxides. Nitrogen oxides (NO<sub>x</sub>). Formaldehyde. Carbon oxides.

**Unusual Fire and Explosion Hazards:** Flash back possible over considerable distance.. Exposure to combustion products may be a hazard to health.. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.. Flammable mixtures may exist within the vapor space of containers at room temperature.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. Vapours may form explosive mixtures with air..

**Advice for firefighters**

**Fire Fighting Procedures:** Use water spray to cool unopened containers.. Evacuate area.. Collect contaminated fire extinguishing water separately. This must not be discharged into

drains.. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed.. Do not use a solid water stream as it may scatter and spread fire..

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Remove undamaged containers from fire area if it is safe to do so.

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.. Use personal protective equipment..

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Remove all sources of ignition. Use personal protective equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Follow safe handling advice and personal protective equipment recommendations.

**Environmental precautions:** Do not release the product to the aquatic environment above defined regulatory levels. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up:** Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. See sections: 7, 8, 11, 12 and 13.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Do not get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Do not get in eyes. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Handle in accordance with good industrial hygiene and safety practice. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation. Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity. Ground and bond container and receiving equipment.

**Conditions for safe storage:** Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Do not store with the following product types: Strong oxidizing agents. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Gases. Unsuitable materials for containers: None known.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	260 mg/m3 200 ppm
	OSHA P0	TWA	260 mg/m3 200 ppm
	Further information: X: Skin notation		
	OSHA P0	STEL	325 mg/m3 250 ppm
	Further information: X: Skin notation		
N-(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine	Dow IHG		See Further information
	Further information: Skin Sensitizer		
Methyltrimethoxysilane	Dow IHG	TWA	7.5 ppm

The following substance(s), which have Occupational Exposure Limit(s) (OEL), may be formed during handling or processing:, Methanol.

### Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

### Exposure controls

**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

Physical state	liquid
Color	Colorless to pale yellow
Odor	amine-like
Odor Threshold	No data available
pH	No data available
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	> 100 °C (> 212 °F)
Flash point	<b>Seta closed cup</b> 28.5 °C (83.3 °F)
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.050
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available

<b>Decomposition temperature</b>	No data available
<b>Kinematic Viscosity</b>	15 cSt at 25 °C (77 °F)
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	The substance or mixture is not classified as oxidizing.
<b>Molecular weight</b>	No data available
<b>Particle size</b>	Not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Not classified as a reactivity hazard.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** Can react with strong oxidizing agents. Vapours may form explosive mixture with air. Flammable liquid and vapour.

**Conditions to avoid:** Avoid static discharge. Heat, flames and sparks.

**Incompatible materials:** Avoid contact with oxidizing materials.

**Hazardous decomposition products:**

Decomposition products can include and are not limited to: Methanol. Formaldehyde.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data are available.*

**Information on likely routes of exposure**

Inhalation, Eye contact, Skin contact, Ingestion.

**Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)**

**Acute Toxicity Endpoints:**

Harmful if swallowed.

**Acute oral toxicity**

**Information for the Product:**

Low toxicity if swallowed. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed.

As product: Single dose oral LD50 has not been determined.

**Information for components:**



**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**  
LD50, Rat, > 2,000 - 5,000 mg/kg

**Methanol**

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart. Effects may be delayed. LD50, Rat, > 5,000 mg/kg

Lethal Dose, Humans, 340 mg/kg Estimated.

Lethal Dose, Humans, 29 - 237 ml Estimated.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

LD50, Rat, male and female, 2,295 mg/kg OPPTS 870.1100

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

**Methyltrimethoxysilane**

LD50, Rat, male and female, 11,685 mg/kg

This substance may hydrolyze to release Methanol. Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

**Acute dermal toxicity**

**Information for the Product:**

Prolonged or widespread skin contact may result in absorption of harmful amounts. Repeated skin contact may result in absorption of harmful amounts. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

As product: The dermal LD50 has not been determined.

Based on information for component(s):  
LD50, > 2,000 mg/kg Estimated.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**  
LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

**Methanol**

Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness,

metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death. LD50, Rabbit, 15,800 mg/kg

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

**Methyltrimethoxysilane**

LD50, Rabbit, male and female, > 9,500 mg/kg OECD 402 or equivalent

This substance may hydrolyze to release Methanol. Effects of methanol are the same as observed via oral and inhalation exposure and include central nervous system (CNS) depression, visual impairment up to blindness, metabolic acidosis, with effects on organ systems such as liver, kidneys and heart, even death.

**Acute inhalation toxicity**

**Information for the Product:**

Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

As product: The LC50 has not been determined.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

The LC50 has not been determined.

**Methanol**

Easily attainable vapor concentrations may cause serious adverse effects, even death. At lower concentrations: May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death. Effects may be delayed.

LC50, Rat, 4 Hour, vapour, 3 mg/l

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

LC50, Rat, 4 Hour, dust/mist, 1.49 - 2.44 mg/l OECD Test Guideline 403

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

**Methyltrimethoxysilane**

LC50, Rat, male and female, 6 Hour, vapour, > 7605 ppm OECD Test Guideline 403

This substance may hydrolyze to release Methanol. Inhalation of methanol may cause effects ranging from headache, narcosis and visual impairment to metabolic acidosis, blindness, and even death.

**Skin corrosion/irritation**

Not classified based on available information.

**Information for the Product:**

Based on product testing:

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause slight skin irritation with local redness.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

Prolonged contact may cause slight skin irritation with local redness.

Repeated contact may cause slight skin irritation with local redness.

**Methanol**

Prolonged contact may cause slight skin irritation with local redness.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Brief contact may cause moderate skin irritation with local redness.

**Methyltrimethoxysilane**

Brief contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Information for the Product:**

Based on product testing:

May cause severe eye irritation.

May cause severe corneal injury.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

May cause moderate eye irritation.

May cause slight corneal injury.

**Methanol**

May cause eye irritation.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

**Methyltrimethoxysilane**

May cause slight temporary eye irritation.  
Corneal injury is unlikely.

**Sensitization**

**For skin sensitization:**

May cause an allergic skin reaction.

**For respiratory sensitization:**

Not classified based on available information.

**Information for the Product:**

For skin sensitization:

Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Methanol**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Methyltrimethoxysilane**

For skin sensitization:

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause damage to organs (Eyes, Central nervous system).

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Methanol**

Causes damage to organs.

Target Organs: Eyes, Central nervous system

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Methyltrimethoxysilane**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Aspiration Hazard**

Not classified based on available information.

**Information for the Product:**

Based on available information, aspiration hazard could not be determined.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

Based on physical properties, not likely to be an aspiration hazard.

**Methanol**

May be harmful if swallowed and enters airways.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Based on available information, aspiration hazard could not be determined.

**Methyltrimethoxysilane**

Material is not classified as an aspiration hazard based on insufficient data, however materials with low viscosity may be aspirated into the lungs during ingestion or vomiting.

**Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)**

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Methanol**

Methanol is highly toxic to humans and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney, and heart.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

In animals, effects have been reported on the following organs:  
Respiratory tract.

**Methyltrimethoxysilane**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

No relevant data found.

**Methanol**

Did not cause cancer in laboratory animals.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

No relevant data found.

**Methyltrimethoxysilane**

No relevant data found.

**Teratogenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

No relevant data found.

**Methanol**

Methanol has caused birth defects in mice at doses nontoxic to the mother as well as slight behavioral effects in offspring of rats.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Did not cause birth defects in laboratory animals.

**Methyltrimethoxysilane**

Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

No relevant data found.

**Methanol**

In animal studies, did not interfere with reproduction.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

In animal studies, did not interfere with reproduction.

**Methyltrimethoxysilane**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

Not classified based on available information.

**Information for the Product:**

Product test data not available.

**Information for components:**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

In vitro genetic toxicity studies were negative.

**Methanol**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative in some cases and positive in other cases.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Methyltrimethoxysilane**

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data are available.*

### Toxicity

#### Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated

##### **Acute toxicity to aquatic invertebrates**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

EC50, Daphnia sp. (water flea), 48 Hour, 1 mg/l

#### Methanol

##### **Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Bluegill sunfish (*Lepomis macrochirus*), flow-through test, 96 Hour, 15,400 mg/l

##### **Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l

##### **Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate, 22,000 mg/l, OECD Test Guideline 201 or Equivalent

##### **Toxicity to bacteria**

IC50, activated sludge, 3 Hour, Respiration rates., > 1,000 mg/l, OECD Test Guideline 209

##### **Chronic toxicity to fish**

NOEC, *Oryzias latipes* (Orange-red killifish), 200 Hour, 15,800 mg/l

#### N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine

##### **Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

For the hydrolysis product(s)

LC50, zebra fish (*Brachydanio rerio*), 96 Hour, 597 mg/l

##### **Acute toxicity to aquatic invertebrates**

For the hydrolysis product(s)

EC50, Daphnia magna (Water flea), 48 Hour, 81 mg/l

##### **Acute toxicity to algae/aquatic plants**

For the hydrolysis product(s)

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 8.8 mg/l

For the hydrolysis product(s)

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 3.1 mg/l

##### **Toxicity to bacteria**



For the hydrolysis product(s)  
EC50, Pseudomonas putida, 16 Hour, Growth inhibition, 67 mg/l

#### Chronic toxicity to aquatic invertebrates

For the hydrolysis product(s)  
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, > 1 mg/l

#### Toxicity to Above Ground Organisms

Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg).

#### Toxicity to soil-dwelling organisms

NOEC, Eisenia fetida (earthworms), 14 d,  $\geq$  1,000 mg/kg

#### Methyltrimethoxysilane

##### Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 110 mg/l, OECD Test Guideline 203 or Equivalent

##### Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 122 mg/l, OECD Test Guideline 202

##### Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility  
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 3.6 mg/l, OECD Test Guideline 201  
No toxicity at the limit of solubility  
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition,  $\geq$  3.6 mg/l, OECD Test Guideline 201

##### Toxicity to bacteria

EC10, activated sludge, 3 Hour, Respiration rates., > 100 mg/l, OECD Test Guideline 209

##### Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 28 d, number of offspring,  $\geq$  10 mg/l

#### Persistence and degradability

##### Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated

Biodegradability: No relevant data found.

##### Methanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Theoretical Oxygen Demand: 1.50 mg/mg

Chemical Oxygen Demand: 1.49 mg/mg Dichromate

##### Biological oxygen demand (BOD)

Incubation	BOD
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Time	
5 d	72 %
20 d	79 %

**Photodegradation****Test Type:** Half-life (indirect photolysis)**Sensitization:** OH radicals**Atmospheric half-life:** 8 - 18 d**Method:** Estimated.**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine****Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Fail

**Biodegradation:** 39 %**Exposure time:** 28 d**Method:** OECD Test Guideline 301A or Equivalent**Theoretical Oxygen Demand:** 2.39 mg/mg Estimated.**Chemical Oxygen Demand:** 1.76 mg/mg Estimated.**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	23 %
10 d	30 %
20 d	29 %

**Stability in Water (1/2-life)**

Hydrolysis, half-life, 0.025 Hour, pH 7

**Photodegradation****Test Type:** Half-life (indirect photolysis)**Sensitization:** OH radicals**Atmospheric half-life:** 0.088 d**Method:** Estimated.**Methyltrimethoxysilane****Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.**Biodegradation:** 54 %**Exposure time:** 28 d**Method:** Regulation (EC) No. 440/2008, Annex, C.4-A**Bioaccumulative potential****Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

**Bioaccumulation:** No relevant data found.

**Methanol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** -0.77 Measured

**Bioconcentration factor (BCF):** < 10 Leuciscus idus (Golden orfe) Measured

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** < 3 estimated

**Methyltrimethoxysilane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** -0.82 Estimated.

**Mobility in soil**

**Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated**

No relevant data found.

**Methanol**

**Partition coefficient (Koc):** 0.44 Estimated.

**N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Partition coefficient (Koc):** > 5000 Estimated.

**Methyltrimethoxysilane**

No relevant data found.

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## 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

**Treatment and disposal methods of used packaging:** Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

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## 14. TRANSPORT INFORMATION

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**DOT**

<b>Proper shipping name</b>	Flammable liquids, n.o.s.(Methanol, Methyltrimethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	FLAMMABLE LIQUID, N.O.S.(Methanol, Methyltrimethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Flammable liquid, n.o.s.(Methanol, Methyltrimethoxysilane)
<b>UN number</b>	UN 1993
<b>Class</b>	3
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Flammable (gases, aerosols, liquids, or solids)  
Hazard not otherwise classified (physical hazards)  
Acute toxicity (any route of exposure)  
Respiratory or skin sensitisation  
Specific target organ toxicity (single or repeated exposure)  
Serious eye damage or eye irritation

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

The following components are subject to reporting levels established by SARA Title III, Section 313:

<b>Components</b>	<b>CASRN</b>
Methanol	67-56-1

**Pennsylvania Right To Know**

The following chemicals are listed because of the additional requirements of Pennsylvania law:

<b>Components</b>	<b>CASRN</b>
Silsesquioxanes, (3-(2-aminoethyl)aminopropyl) methyl, methoxy-terminated	145775-27-5
Methanol	67-56-1
N-(3-(Trimethoxysilyl) propyl)-1,2-ethanediamine	1760-24-3
Methyltrimethoxysilane	1185-55-3

**California Prop. 65**

WARNING: This product can expose you to chemicals including Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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**16. OTHER INFORMATION**

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**Hazard Rating System**

**NFPA**

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>
3	3	0

**HMIS**

<b>Health</b>	<b>Flammability</b>	<b>Physical Hazard</b>
3*	3	0

\* = Chronic Effects (See Hazards Identification)

**Revision**

Identification Number: 4069919 / A001 / Issue Date: 01/25/2023 / Version: 9.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA P0	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

STEL	Short-term exposure limit
TWA	Time weighted average

### Full text of other abbreviations

AllC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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