

Silicone adhesive sealant

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SECTION 1. IDENTIFICATION

Product name : Silicone adhesive sealant

Product code : D 176501A1

Other means of identification : No data available

Manufacturer or supplier's details

Company name of supplier : Volkswagen Canada, Inc.

Address : 777 Bayly Street West
Ajax Ontario Canada, L1S 7G7

Telephone : 248 754 4944

Telefax : 248 754 4943

Emergency telephone : 631 996 6666

Recommended use of the chemical and restrictions on use

Recommended use : Sealant

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Skin sensitization : Category 1

Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms	:	
Signal Word	:	Warning
Hazard Statements	:	H317 May cause an allergic skin reaction. H361d Suspected of damaging the unborn child.
Precautionary Statements	:	Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing mist or vapors. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/

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face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Limestone	1317-65-3	>= 30 - < 60
Calcium carbonate	471-34-1	>= 5 - < 10
1,1,1,3,3,3-Hexamethyldisilazane	999-97-3	>= 1 - < 5
Trimethoxyvinylsilane	2768-02-7	>= 1 - < 5
Carbon black	1333-86-4	>= 1 - < 5
3-Aminopropyltriethoxysilane	919-30-2	>= 0.1 - < 1
Bis(neodecanoyloxy)dioctylstannane	68299-15-0	>= 0.1 - < 1
Quartz	14808-60-7	>= 0.1 - < 1

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

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| In case of eye contact | : | Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : | May cause an allergic skin reaction.
Suspected of damaging the unborn child. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists. |
| Notes to physician | : | Treat symptomatically and supportively. |
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SECTION 5. FIRE-FIGHTING MEASURES

- | | | |
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| Suitable extinguishing media | : | Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during fire fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | Carbon oxides
Silicon oxides
Metal oxides
Nitrogen oxides (NO _x) |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment. |
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SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
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| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations. |
| Environmental precautions | : | Discharge into the environment must be avoided. |

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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 : Soak up with inert absorbent material.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
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.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Do not get on skin or clothing.
Avoid inhalation of vapor or mist.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep away from water.
Protect from moisture.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

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Limestone	1317-65-3	TWA	10 mg/m ³	CA AB OEL
		STEL	20 mg/m ³	CA BC OEL
		TWAEV (total dust)	10 mg/m ³	CA QC OEL
		TWA (Total dust)	10 mg/m ³	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m ³	CA BC OEL
Calcium carbonate	471-34-1	TWAEV (total dust)	10 mg/m ³	CA QC OEL
		TWA	10 mg/m ³ (Calcium carbonate)	CA AB OEL
Trimethoxyvinylsilane	2768-02-7	STEL	10 ppm 60 mg/m ³	CA ON OEL
Carbon black	1333-86-4	TWA	3.5 mg/m ³	CA AB OEL
		TWA (Inhalable)	3 mg/m ³	CA BC OEL
		TWAEV	3.5 mg/m ³	CA QC OEL
		TWA (Inhalable fraction)	3 mg/m ³	ACGIH
Bis(neodecanoyloxy)dioctylstannane	68299-15-0	TWA	0.1 mg/m ³ (Tin)	CA AB OEL
		STEL	0.2 mg/m ³ (Tin)	CA AB OEL
		TWAEV	0.1 mg/m ³ (Tin)	CA QC OEL
		STEV	0.2 mg/m ³ (Tin)	CA QC OEL
		TWA	0.1 mg/m ³ (Tin)	CA BC OEL
		STEL	0.2 mg/m ³ (Tin)	CA BC OEL
		TWA	0.1 mg/m ³ (Tin)	CA ON OEL
		TWA	0.1 mg/m ³ (Tin)	ACGIH
		STEL	0.2 mg/m ³ (Tin)	ACGIH
Quartz	14808-60-7	TWA (Respirable fraction)	0.1 mg/m ³	CA ON OEL
		TWA (Respirable particulates)	0.025 mg/m ³	CA AB OEL
		TWAEV (respirable dust)	0.1 mg/m ³	CA QC OEL
		TWA (Respirable)	0.025 mg/m ³ (Silica)	CA BC OEL
		TWA	0.025 mg/m ³	ACGIH

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		(Respirable fraction)	(Silica)	
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These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

II Calcium carbonate

II Quartz

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ammonia	7664-41-7	TWA	25 ppm 17 mg/m ³	CA AB OEL
		STEL	35 ppm 24 mg/m ³	CA AB OEL
		TWA	25 ppm	CA BC OEL
		STEL	35 ppm	CA BC OEL
		TWAEV	25 ppm 17 mg/m ³	CA QC OEL
		STEV	35 ppm 24 mg/m ³	CA QC OEL
		TWA	25 ppm (Ammonia)	ACGIH
		STEL	35 ppm (Ammonia)	ACGIH
Methanol	67-56-1	TWA	200 ppm 262 mg/m ³	CA AB OEL
		STEL	250 ppm 328 mg/m ³	CA AB OEL
		TWA	200 ppm	CA BC OEL
		STEL	250 ppm	CA BC OEL
		TWAEV	200 ppm 262 mg/m ³	CA QC OEL
		STEV	250 ppm 328 mg/m ³	CA QC OEL
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH

Engineering measures : Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Self-contained breathing apparatus

Hand protection

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Material	: Nitrile rubber
Break through time	: > 480 min
Glove thickness	: >= 0.4 mm
Directive	: DIN EN 374
Protective index	: Class 6

Material	: Nitrile rubber
Break through time	: > 30 min
Glove thickness	: >= 0.4 mm
Directive	: DIN EN 374
Protective index	: Class 2

Remarks	: Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
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Eye protection	: Wear the following personal protective equipment: Safety glasses
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Skin and body protection	: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
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Hygiene measures	: Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: paste
Color	: black
Odor	: alcohol-like
Odor Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: > 100 °C

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	Evaporation rate	:	No data available
	Flammability (solid, gas)	:	Not applicable
	Flammability (liquids)	:	No data available
	Upper explosion limit / Upper flammability limit	:	No data available
	Lower explosion limit / Lower flammability limit	:	No data available
	Vapor pressure	:	< 6.666118 hPa (25 °C)
	Relative vapor density	:	No data available
	Density	:	1.4 g/cm ³
	Solubility(ies)		
	Water solubility	:	polymerization
	Partition coefficient: n-octanol/water	:	Not applicable
	Autoignition temperature	:	No data available
	Decomposition temperature	:	No data available
	Viscosity		
	Viscosity, kinematic	:	No data available
	Explosive properties	:	Not explosive
	Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
	Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents. Hazardous decomposition products will be formed upon contact with water or humid air.
Conditions to avoid	:	Exposure to moisture.
Incompatible materials	:	Oxidizing agents Water

Hazardous decomposition products

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Contact with water or humid air : Ammonia
Methanol

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 30000 ppm
Exposure time: 4 h
Test atmosphere: gas
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:**Limestone:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Calcium carbonate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

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Acute inhalation toxicity : LC50 (Rat): > 3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

1,1,1,3,3,3-Hexamethyldisilazane:

Acute oral toxicity : LD50 (Rat): 851 mg/kg

Acute inhalation toxicity : Acute toxicity estimate (Humans): 2500 ppm
Exposure time: 1 h
Test atmosphere: gas
Method: Expert judgment
Remarks: Value is for a gas formed in contact with water

Acute dermal toxicity : LD50 (Rabbit): 547 mg/kg

Trimethoxyvinylsilane:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 16.8 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Carbon black:

Acute oral toxicity : LD50 (Rat): > 10,000 mg/kg

3-Aminopropyltriethoxysilane:

Acute oral toxicity : LD50 (Rat): 1,490 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.145 mg/l
Exposure time: 6 h
Test atmosphere: vapor
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 4,076 mg/kg

Bis(neodecanoyloxy)dioctylstannane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

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	Assessment: The substance or mixture has no acute oral toxicity
	Remarks: Based on data from similar materials
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg
	Method: OECD Test Guideline 402
	Assessment: The substance or mixture has no acute dermal toxicity
	Remarks: Based on data from similar materials

Quartz:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg
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Skin corrosion/irritation

Not classified based on available information.

Components:**Limestone:**

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation
Remarks	: Based on data from similar materials

Calcium carbonate:

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation

1,1,1,3,3,3-Hexamethyldisilazane:

Species	: Rabbit
Result	: No skin irritation

Trimethoxyvinylsilane:

Species	: Rabbit
Result	: No skin irritation

Carbon black:

Species	: Rabbit
Result	: No skin irritation

3-Aminopropyltriethoxysilane:

Species	: Rabbit
Result	: Corrosive after 3 minutes to 1 hour of exposure

Bis(neodecanoyloxy)dioctylstannane:

Species	: reconstructed human epidermis (RhE)
Method	: OECD Test Guideline 439
Result	: No skin irritation

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Remarks : Based on data from similar materials

Serious eye damage/eye irritation

Not classified based on available information.

Components:**Limestone:**

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405
Remarks	: Based on data from similar materials

Calcium carbonate:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405

1,1,1,3,3,3-Hexamethyldisilazane:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405

Trimethoxyvinylsilane:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405

Carbon black:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405

3-Aminopropyltriethoxysilane:

Species	: Rabbit
Result	: Irreversible effects on the eye

Bis(neodecanoyloxy)dioctylstannane:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405
Remarks	: Based on data from similar materials

Respiratory or skin sensitization**Skin sensitization**

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

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Components:**Limestone:**

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative
Remarks	: Based on data from similar materials

Calcium carbonate:

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative

1,1,1,3,3,3-Hexamethyldisilazane:

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative
Remarks	: Based on data from similar materials

Trimethoxyvinylsilane:

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

Carbon black:

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

3-Aminopropyltriethoxysilane:

Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: positive

Assessment	: Probability or evidence of skin sensitization in humans
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Bis(neodecanoyloxy)dioctylstannane:

Test Type	: Local lymph node assay (LLNA)
Routes of exposure	: Skin contact

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Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative
Remarks	: Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:**Limestone:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials
	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials

Calcium carbonate:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative
	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative

1,1,1,3,3,3-Hexamethyldisilazane:

Genotoxicity in vitro	: Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative
Genotoxicity in vivo	: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Intraperitoneal injection Result: negative Remarks: Based on data from similar materials

Trimethoxyvinylsilane:

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Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carbon black:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: In vitro sister chromatid exchange assay in mammalian cells
Method: OECD Test Guideline 479
Result: negative

Test Type: in vitro micronucleus test
Method: OECD Test Guideline 487
Result: negative

Genotoxicity in vivo : Test Type: Sex-linked recessive lethal test in *Drosophila melanogaster* (in vivo)
Species: *Drosophila melanogaster* (vinegar fly)
Application Route: Ingestion
Method: OECD Test Guideline 477
Result: negative

3-Aminopropyltriethoxysilane:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

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Bis(neodecanoyloxy)dioctylstannane:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474 Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:**Carbon black:**

Species	:	Rat
Application Route	:	Inhalation
Exposure time	:	24 Months
Result	:	positive

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	2 Years
Result	:	negative

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen
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3-Aminopropyltriethoxysilane:

Species	:	Mouse
Application Route	:	Skin contact
Exposure time	:	24 month(s)
Result	:	negative

Quartz:

Species	:	Humans
Application Route	:	inhalation (dust/mist/fume)
Result	:	positive
Remarks	:	IARC: (International Agency for Research on Cancer) These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment	:	Positive evidence from human epidemiological studies (inhalation)
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Reproductive toxicity

Suspected of damaging the unborn child.

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Components:**Limestone:**

- | | | |
|------------------------------|---|--|
| Effects on fertility | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials |
| Effects on fetal development | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials |

Calcium carbonate:

- | | | |
|------------------------------|---|---|
| Effects on fertility | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative |
| Effects on fetal development | : | Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative |

1,1,1,3,3,3-Hexamethyldisilazane:

- | | | |
|------------------------------|---|--|
| Effects on fertility | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: inhalation (vapor)
Method: OECD Test Guideline 422
Result: negative |
| Effects on fetal development | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: inhalation (vapor)
Method: OECD Test Guideline 422
Result: negative |

Trimethoxyvinylsilane:

- | | | |
|----------------------|---|--|
| Effects on fertility | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion |
|----------------------|---|--|

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Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: inhalation (vapor)
Result: negative

Carbon black:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative

Test Type: Embryo-fetal development
Species: Mouse
Application Route: inhalation (dust/mist/fume)
Result: negative

3-Aminopropyltriethoxysilane:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative

Bis(neodecanoyloxy)dioctylstannane:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: positive
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

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STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Components:**Trimethoxyvinylsilane:**

Routes of exposure	: Ingestion
Assessment	: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Bis(neodecanoyloxy)dioctylstannane:

Routes of exposure	: Ingestion
Target Organs	: thymus gland
Assessment	: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

Quartz:

Routes of exposure	: inhalation (dust/mist/fume)
Target Organs	: Lungs
Assessment	: Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

Repeated dose toxicity**Components:****Limestone:**

Species	: Rat
NOAEL	: > 300 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days
Method	: OECD Test Guideline 422
Remarks	: Based on data from similar materials

Calcium carbonate:

Species	: Rat
NOAEL	: > 1,000 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days
Method	: OECD Test Guideline 422

1,1,1,3,3,3-Hexamethyldisilazane:

Species	: Rat
NOAEL	: > 2.6 mg/l
Application Route	: inhalation (vapor)
Exposure time	: 13 Weeks

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Trimethoxyvinylsilane:

Species	: Rat
LOAEL	: 62.5 mg/kg
Application Route	: Ingestion
Exposure time	: 54 Days
Method	: OECD Test Guideline 422

3-Aminopropyltriethoxysilane:

Species	: Rat
NOAEL	: 200 mg/kg
LOAEL	: 600 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Method	: OECD Test Guideline 408

Bis(neodecanoyloxy)dioctylstannane:

Species	: Rat
NOAEL	: 5 mg/kg
LOAEL	: 25 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days
Method	: OECD Test Guideline 422
Remarks	: Based on data from similar materials

Quartz:

Species	: Humans
LOAEL	: 0.053 mg/m ³
Application Route	: inhalation (dust/mist/fume)
Remarks	: These substance(s) are inextricably bound in the product and therefore do not contribute to a dust inhalation hazard.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Limestone:**

Toxicity to fish	: LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: LL50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 Remarks: Based on data from similar materials

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Toxicity to algae : EL50 (Desmodesmus subspicatus (green algae)): > 14 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility.
Based on data from similar materials

EL10 (Desmodesmus subspicatus (green algae)): > 14 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility.
Based on data from similar materials

Toxicity to microorganisms : EC50: > 100 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Calcium carbonate:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae : NOELR (Pseudokirchneriella subcapitata (green algae)): 50 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC: 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

EC50: > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

1,1,1,3,3,3-Hexamethyldisilazane:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 88 mg/l
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 80 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 50 mg/l
Exposure time: 72 h

NOEC (Desmodesmus subspicatus (green algae)): 7.5 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC50: 6,670 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Trimethoxyvinylsilane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 191 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 168.7 mg/l
Exposure time: 48 h

Toxicity to algae : ErC50 (Desmodesmus subspicatus (green algae)): > 957 mg/l
Exposure time: 72 h

NOEC (Desmodesmus subspicatus (green algae)): > 957 mg/l
Exposure time: 72 h

Carbon black:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 5,600 mg/l
Exposure time: 24 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae : EL10 (Desmodesmus subspicatus (green algae)): > 10,000 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

EL50 (Desmodesmus subspicatus (green algae)): > 10,000 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

3-Aminopropyltriethoxysilane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 934 mg/l
Exposure time: 96 h

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	Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 331 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	: ErC50 (Desmodesmus subspicatus (green algae)): > 1,000 mg/l Exposure time: 72 h Method: Directive 67/548/EEC, Annex V, C.3.
	NOEC (Desmodesmus subspicatus (green algae)): 1.3 mg/l Exposure time: 72 h Method: Directive 67/548/EEC, Annex V, C.3.
Toxicity to microorganisms	: EC10 (Pseudomonas putida): 13 mg/l Exposure time: 5.75 h

Bis(neodecanoyloxy)dioctylstannane:

Toxicity to fish	: LC50 (Danio rerio (zebra fish)): > 0.09 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 0.21 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to algae	: EC50 (Desmodesmus subspicatus (green algae)): > 0.0018 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility. Based on data from similar materials
	NOEC (Desmodesmus subspicatus (green algae)): 0.00097 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility. Based on data from similar materials
Toxicity to microorganisms	: EC50: 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials

Quartz:**Ecotoxicology Assessment**

Acute aquatic toxicity	: No toxicity at the limit of solubility.
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Chronic aquatic toxicity : No toxicity at the limit of solubility.

Persistence and degradability**Components:****1,1,1,3,3,3-Hexamethyldisilazane:**

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 15.3 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.E.

Trimethoxyvinylsilane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 51 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

3-Aminopropyltriethoxysilane:

Stability in water : Degradation half life (DT50): 8.5 h

Bis(neodecanoyloxy)dioctylstannane:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 1.9 %
Exposure time: 28 d
Method: OECD Test Guideline 301
Remarks: Based on data from similar materials

Bioaccumulative potential**Components:****1,1,1,3,3,3-Hexamethyldisilazane:**

Partition coefficient: n-octanol/water : log Pow: 1.22
Remarks: Based on data from similar materials

3-Aminopropyltriethoxysilane:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 3.4
Method: OECD Test Guideline 305C

Bis(neodecanoyloxy)dioctylstannane:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): < 100
Method: OECD Test Guideline 305
Remarks: Based on data from similar materials

Mobility in soil

No data available

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Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues	:	Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**TDG**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

Volatile organic compounds (VOC) content	CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 - Guidelines for VOC in Consumer Products VOC content: 2.7 % / 37.8 g/l
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The ingredients of this product are reported in the following inventories:

DSL	:	All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).
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SECTION 16. OTHER INFORMATION**Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under

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the Occupational Health and Safety Act.

CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

ACGIH / TWA : 8-hour, time-weighted average

ACGIH / STEL : Short-term exposure limit

CA AB OEL / TWA : 8-hour Occupational exposure limit

CA AB OEL / STEL : 15-minute occupational exposure limit

CA BC OEL / TWA : 8-hour time weighted average

CA BC OEL / STEL : short-term exposure limit

CA ON OEL / TWA : Time-Weighted Average Limit (TWA)

CA ON OEL / STEL : Short-Term Exposure Limit (STEL)

CA QC OEL / TWA EV : Time-weighted average exposure value

CA QC OEL / STEV : Short-term exposure value

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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