SAFETY DATA SHEET

XIAMETER(R) RTV-3011 THIXO ADDITIVE

Version	Revision Date:	MSDS Number:	Date of last issue: 2015/04/23
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : XIAMETER(R) RTV-3011 THIXO ADDITIVE

Product code : 000000000004107660

Manufacturer or supplier's details

Company : Dow Corning (Thailand) Limited

Address : 177/1 Bangkok Union Insurance Building
17th Floor, Soi Anumarnrajthon 1
Surawong Road, Suriyawong, Bangrak
Bangkok 10500

Telephone : + (66 2) 634 6700

Emergency telephone number : + (65) 6542 9595 (24 hours)

Telefax : + (66 2) 634 6799

Recommended use of the chemical and restrictions on use

Recommended use : Additives

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4

Reproductive toxicity : Category 2

GHS Label element

Hazard pictograms :

Signal word : Warning

Hazard statements : H227 Combustible liquid.
H361 Suspected of damaging fertility or 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.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
Vapours may form explosive mixture with air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Chemical nature : Silicone

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
Octamethylcyclotetrasiloxane	556-67-2	>= 1 - < 10
Decamethylcyclopentasiloxane	541-02-6	>= 1 - < 10

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.

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 : Suspected of damaging fertility or 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.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Silicon oxides Formaldehyde
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 firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
Environmental precautions	:	Discharge into the environment must be avoided. 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.
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.
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.

7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling	:	Avoid inhalation of vapour or mist. Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Handle in accordance with good industrial hygiene and safety practice. 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.
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.
Materials to avoid	:	Do not store with the following product types: Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	DCC OEL

Decamethylcyclopentasiloxane	541-02-6	TWA	10 ppm	DCC OEL

Engineering measures : Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.
Use only in an area equipped with explosion proof exhaust ventilation.

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 : Combined particulates and organic vapour type

Hand protection
Material : Impervious gloves

Material : Flame retardant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! 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.

Eye protection : Wear the following personal protective equipment:
Safety glasses

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
Flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

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.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.
For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact

the Dow Corning customer service group.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	amber
Odour	:	characteristic
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	> 65 °C
Flash point	:	67 °C Method: Tag closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1.036
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	310 cSt
Explosive properties	:	Not explosive

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Combustible liquid. Vapours may form explosive mixture with air. Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents

Hazardous decomposition products

Thermal decomposition	:	Formaldehyde

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Components:

Octamethylcyclotetrasiloxane:

Acute oral toxicity	:	LD50 (Rat): > 4,800 mg/kg Assessment: The substance or mixture has no acute oral toxicity Remarks: Based on test data
Acute inhalation toxicity	:	LC50 (Rat): 2975 ppm Exposure time: 4 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on test data
Acute dermal toxicity	:	LD50 (Rabbit): > 2.5 ml/kg Assessment: The substance or mixture has no acute dermal toxicity

Remarks: Based on test data

Decamethylcyclopentasiloxane:

Acute oral toxicity : LD50 (Rat): > 24,134 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): 8.67 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No skin irritation
Remarks: Based on test data

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No eye irritation
Remarks: Based on test data

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Components:

Octamethylcyclotetrasiloxane:
Assessment: Does not cause skin sensitisation.

Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Remarks: Based on test data

Germ cell mutagenicity

Not classified based on available information.

Components:

Octamethylcyclotetrasiloxane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

: Test Type: Mutagenicity (in vitro mammalian cytogenetic test)

Result: negative
Remarks: Based on test data

: Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on test data

: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on test data

: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapour)
Result: negative
Remarks: Based on test data

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Decamethylcyclopentasiloxane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
Species: Rat
Application Route: inhalation (vapour)
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

Octamethylcyclotetrasiloxane:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat, male and female Application Route: inhalation (vapour) Symptoms: Effects on fertility Remarks: Based on test data
Effects on foetal development	:	Test Type: Prenatal development toxicity study (teratogenicity) Species: Rabbit Application Route: inhalation (vapour) Symptoms: No effects on foetal development Remarks: Based on test data
Reproductive toxicity - Assessment	:	Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

Decamethylcyclopentasiloxane:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Inhalation Symptoms: No effects on fertility Remarks: Based on test data
Effects on foetal development	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Inhalation Symptoms: No effects on foetal development Remarks: Based on test data
Reproductive toxicity - Assessment	:	No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

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

Exposure routes: inhalation (vapour)
Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

Exposure routes: Skin contact
Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg bw or less.

Decamethylcyclopentasiloxane:
Exposure routes: Skin contact
Assessment: No significant health effects observed in animals at concentrations of 200 mg/kg

bw or less.

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

Exposure routes: inhalation (vapour)
Assessment: No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

Repeated dose toxicity

Components:

Octamethylcyclotetrasiloxane:
Species: Rat
Application Route: Ingestion
Remarks: Based on test data

Species: Rat
Application Route: inhalation (vapour)
Remarks: Based on test data

Species: Rabbit
Application Route: Skin contact
Remarks: Based on test data

Decamethylcyclopentasiloxane:
Species: Rat
Application Route: Skin contact
Remarks: Based on test data

Species: Rat
Application Route: Ingestion
Remarks: Based on test data

Species: Rat
Application Route: inhalation (vapour)
Remarks: Based on test data

Aspiration toxicity

Not classified based on available information.

Further information

Components:

Octamethylcyclotetrasiloxane:
Remarks: Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. Based on the available information on its potential to cause harm to human health, Health Canada, in a 2008 screening assessment, has concluded that octamethylcyclotetrasiloxane is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health (http://www.ec.gc.ca/ese-

ees/default.asp?lang=En&n=2481B508-1). Repeated exposure in rats to D4 resulted in protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Decamethylcyclopentasiloxane:
Remarks: Results from a 2 year repeated vapour inhalation exposure study to rats of decamethylcyclopentasiloxane (D5) indicate effects (uterine endometrial tumors) in female animals. This finding occurred at the highest exposure dose (160 ppm) only. Studies to date have not demonstrated if this effect occurs through a pathway that is relevant to humans. Based on the available information on its potential to cause harm to human health, Health Canada, in a 2008 screening assessment, has concluded that D5 is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health (http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=13CC261E-1).

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Octamethylcyclotetrasiloxane:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia sp.): > 0.015 mg/l Exposure time: 48 h Remarks: No toxicity at the limit of solubility
Toxicity to algae	:	EC50: > 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility NOEC: 0.022 mg/l Exposure time: 96 h Remarks: No toxicity at the limit of solubility
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): >= 0.0044 mg/l Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 0.0079 mg/l Exposure time: 21 d Remarks: No toxicity at the limit of solubility
Toxicity to bacteria	:	IC50: > 10,000 mg/l Method: ISO 8192
Ecotoxicology Assessment Chronic aquatic toxicity	:	May cause long lasting harmful effects to aquatic life.

Decamethylcyclopentasiloxane:

Toxicity to fish (Chronic toxicity)	:	Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other	:	Remarks: No toxicity at the limit of solubility

aquatic invertebrates (Chronic toxicity)

Ecotoxicology Assessment
Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability

Components:

Octamethylcyclotetrasiloxane:
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life: 69.3 - 144 h (24.6 °C) pH: 7
Method: OECD Test Guideline 111

Decamethylcyclopentasiloxane:
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0.14 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Bioaccumulative potential

Components:

Octamethylcyclotetrasiloxane:
Partition coefficient: n-octanol/water : log Pow: 6.48 (25.1 °C)

Decamethylcyclopentasiloxane:
Bioaccumulation : Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): >= 500
Remarks: Based on test data
Trophic magnification factor <1
Biomagnification factor <1
Does not biomagnify along the food chain.

Mobility in soil

No data available

Other adverse effects

Components:

Octamethylcyclotetrasiloxane:
Results of PBT and vPvB assessment : Remarks: Octamethylcyclotetrasiloxane (D4) meets the current REACh Annex XIII criteria for PBT and vPvB. In Canada, D4 has been assessed and deemed to meet the PiT criteria. However, D4 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D4 is not biomagnifying in aquatic and terrestrial food webs. D4 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D4 in air

that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms.

Components:

Decamethylcyclopentasiloxane:

Results of PBT and vPvB assessment	:	Remarks: Decamethylcyclopentasiloxane (D5) meets the current REACh Annex XIII criteria for vPvB. However, D5 does not behave similarly to known PBT/vPvB substances. The weight of scientific evidence from field studies shows that D5 is not biomagnifying in aquatic and terrestrial food webs. D5 in air will degrade by reaction with naturally occurring hydroxyl radicals in the atmosphere. Any D5 in air that does not degrade by reaction with hydroxyl radicals is not expected to deposit from the air to water, to land, or to living organisms. Based on an independent scientific panel of experts, the Canadian Minister of the Environment has concluded that "D5 is not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity, or that constitute or may constitute a danger to the environment on which life depends".

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with local regulations.
Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

International Regulation

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.

15. REGULATORY INFORMATION

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

Hazardous Substance Act B.E. 2535	:	Not applicable
Emergency Decree on Controlling the Use of Volatile Substances B.E. 2533	:	Not applicable
Notification of Ministry of Interior on Working Safety Relating to Hazardous Chemicals B.E. 2534	:	

The components of this product are reported in the following inventories:

REACH	:	All ingredients (pre-)registered or exempt.
TSCA	:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
AICS	:	All ingredients listed or exempt.
IECSC	:	All ingredients listed or exempt.
PICCS	:	All ingredients listed or exempt.
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).
NZIoC	:	All ingredients listed or exempt.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

16. OTHER INFORMATION

Further information

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

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

Date format	:	yyyy/mm/dd

Full text of other abbreviations

DCC OEL	:	Dow Corning Guide
DCC OEL / TWA	:	Time weighted average

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

TH / EN