

Product/Company Identification - Section 1

Product Name: ToughCrete - 1 Gal.
Company Name: Quest Chemical, 13320 Enterprise Ave
Cleveland, Ohio 44135
Emergency Info: (330) 888-0359

Recommended use: Impregnation agents Additives

First Aid Measures - Section 4

General Advice:

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

If Inhaled:

Remove to fresh air and seek medical attention and advice.

In Case of Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention and advice. Wash clothing before reuse and clean shoes.

In Case of Eye Contact:

Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If Swallowed:

DO NOT induce vomiting, seek medical attention and rinse mouth.

Most Important Symptoms/Effects, Both Acute and Delayed:

Causes skin irritation. Suspected of damaging fertility.

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.

Note to Physician:

Treat symptomatically and supportively.

Firefighting Measures - Section 5

Suitable Extinguishing Media - Water spray alcohol resistant foam Carbon Dioxide (CO₂) dry chemical.

Unsuitable Extinguishing Media - None known.

Specific Hazards During Firefighting - Exposure to combustion products may be hazard to health.

Hazardous Combustion Products - Carbon oxides Silicon oxides formaldehyde nitrogen oxides.

Specific Extinguishing Methods - Use extinguishing measures that are appropriate local circumstances. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Hazards Identification - Section 2

GHS Classification

Skin Irritation: Category 2

Reproductive Toxicity: Category 2

GHS Label Elements

Hazard Pictograms:



Signal Word: Warning

Hazard Statements

H315 Causes skin irritation.

H361f Suspected of damaging fertility.

Prevention:

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P261 - Avoid breathing spray.

P264 - Wash skin thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

P280 - Wear protective gloves, protective clothing, eye protection and face protection.

Response:

P302 + P352 - If on skin: Wash with soap and water.

P308 + P313 - If exposed or concerned: Get medical attention and advice.

P332 + P313 - If skin irritation occurs: Get medical attention and advice.

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

Storage: P405 store in a locked up location.

Disposal: P501 Dispose of contents/container to an approved waste disposal facility.

Composition and Information on Ingredients - Section 3

Substance/Mixture: Mixture.

Chemical Nature: Silicone emulsion.

Hazards Ingredients

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Concentration</u> (% w/w)
Triethoxy (octyl) silane	2943751	>=10 <20
Dimethyl siloxane with aminoethylaminopropyl silsesquioxane, hydroxyterm	68554541	>=1 <5
Octamethylcyclotetrasiloxane	556672	>=0.1 <1

Accidental Release Measures - Section 6

Protective Precautions, Protective Equipment and Emergency Procedures:

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 spillage does occur and 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 an 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.

Handling and Storage - Section 7

Technical Measures: See engineering measures under Exposure Controls/ Personal Protection section.

Local/Total Ventilation Advice on Safe Handling: Use only with adequate ventilation.

Advise for 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. 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.

Exposure Controls/Personal Protection - Section 8

Ingredients with workplace control parameters

<u>Ingredients</u>	<u>CAS NO.</u>	<u>Value Type (Form of Exp.)</u>	<u>Control Parameters/ Permissible Concentration</u>	<u>Basis</u>
Octamethylcyclotetrasiloxane	556672	TWA	10 ppm	DCC OEL
		TWA	10 ppm	US WEEL

Hazardous components without workplace control parameters

<u>Ingredients</u>	<u>CAS NO.</u>
Triethoxy (octyl) silane	2943751
Dimethyl siloxane with aminoethylaminopropyl silsesquioxane, hydroxyterm	68554541

Occupational exposure limits of decomposition products

<u>Ingredients</u>	<u>CAS NO.</u>	<u>Value Type (Form of Exp.)</u>	<u>Control Parameters/ Permissible Concentration</u>	<u>Basis</u>
Ethanol	64175	TWA	1,000 pm - 1,900 mg/m3	NIOSH REL
		TWA	1,000 pm - 1,900 mg/m3	OSHA Z1
		STEL	1,000 pm	ACGIH

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

Hand Protection Material: Chemical resistant gloves.

Eye Protection: Wear the following protective equipment: Safety goggles.

Respiratory Protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Remarks: Choose gloves to protect hands against chemicals depending on the concentration 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 the workday.

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).

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 reuse. These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

Physical and Chemical Properties - Section 9

Appearance: Liquid	Lower Explosion Limit: No Data Available
Color: White	Vapor Pressure: No Data Available
Odor: Not Significant	Relative Vapor Density: No Data Available
Odor Threshold: No Data Available	Relative Density: 1
pH: No Data Available	Solubility - Water Solubility: No Data Available
Melting Point/Freezing Point	Partition Coefficient - N Octanol/Water: No Data Available
Initial Boiling Point and Range: >35 C	Autoignition Temperature: No Data Available
Flash Point: >100C	Decomposition Temperature: No Data Available
Evaporation Rate: No Data Available	Viscosity - Viscosity Dynamic: 50mPa.s
Flammability (Solid, Gas): N/A	Explosive Properties: Not explosive
Upper Explosion Limit: No Data Available	Oxidizing Properties: The substance or mixture is not classified as oxidizing

Stability and Reactivity - Section 10

Reactivity: Not classified as a reactivity hazard.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Hazardous decomposition products will be formed upon contact with water or humid air. Hazardous decomposition products will be formed at elevated temperatures.

Conditions to Avoid: Exposure to moisture.

Incompatible Materials: Oxidizing agents, Water.

Hazardous Decomposition Products: Contact with water or humid air: Ethanol. Thermal decomposition: Formaldehyde.

Toxicological Information - Section 11

Information on Likely Routes of Exposure: Inhalation, skin contact, ingestion, or eye contact.

Acute Toxicity: Not classified based on available information.

Ingredients: Triethoxy(octyl)silane: Acute oral toxicity: LD50 (Rat): > 5,110 mg/kg. Assessment: The substance or mixture has no acute oral toxicity. Acute derman toxicity: LD50 (Rat): 6,730 mg/kg. Assessment: The substance or mixture has no acute dermal toxicity. Remarks based on test data.

Ingredients: Octamethylcyclotetrasiloxane: Acute oral toxicity: LD50 (Rat): >4,800 mg/kg. Assessment: The substance or mixture has no acute oral toxicity. Remarks are based on test data. Acute inhalation toxicity: LC50 (Rat): 2975 ppm. Exposure time: 4hr. Test atmosphere: vapor. Assessment: The substance or mixture has no acute inhalation toxicity. Remarks are based on test data. Acute dermal toxicity: LD50 (Rabbit): > 2.5 ml/kg. Assessment: Substance or mixture has no acute dermal toxicity. Remarks on test data.

Skin Corrosion/Irritation: Causes skin irritation.

Ingredients: Triethoxy(octyl)silane: Species (Rabbit). Result: Skin irritation. Remarks are based on test data. **Dimethyl Siloxane with Aminoethylaminopropyl Silsesquioxane, hydroxyterm:** Result: Skin irritation. Remarks based data from similar materials.

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No skin irritation
Remarks: Based on test data
Serious eye damage and irritation: Not classified based on info.

Octamethylcyclotetrasiloxane:
Species: Rabbit
Result: No eye irritation
Remarks: Based on test data
Respiratory or skin sensitization
Skin sensitization: Not classified based on available information
Respiratory sensitization: Not classified based on available information

Carcinogenicity: Not classified based on available information.
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as known or anticipated carcinogen by NTP.
Reproductive toxicity: Suspected of damaging fertility.

Ingredients:
Triethoxy(octyl)silane: Genotoxicity in vitro: Test type: Mutagenicity in vitro mammalian cytogenetic test
Result: Negative
Remarks: Based on test data
Octamethylcyclotetrasiloxane:

Germ Cell Mutagenicity
Not classified based on available info

Genotoxicity in Vivo
Test Type: Mammalian erythrocyte Micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Inhalation (vapor)
Result: Negative
Remarks: Based on test data
Test Type: Rodent dominant lethal
Test (germ cell) (in vino)
Species: Rat
Application Route: Ingestion
Result: Negative
Remarks: Based on test data

Germ cell mutagenicity – Assessment
Animal testing did not show any Mutagenic effects

Ingredients:
Octamethylcyclotetrasiloxane:
Assessment: Does not cause skin sensitization.
Test Type: Maximization
Test Species: Guinea pig
Remarks: Based on test data

Dimethyl Siloxane with Aminoethylaminopropyl Silsesquioxane, hydroxyterm:
Result: Irritation to eyes, reversing within twenty-one days
Remarks: Based on data from similar materials

Triethoxy(octyl)silane:
Species: Rabbit
Result: No eye irritation
Remarks: Based on test data

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
Type 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

Ingredients:

Triethoxy(octyl)silane: Effects on fertility. Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity-screening test. Species: Rat, male and female. Application Route: Ingestion. Symptoms: No effects on fertility. Remarks: Based on test data.

Effects on fetal development. Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test. Species: Rat, male and female. Application Route: Ingestion. Symptoms: No effects on fetal development.

Reproductive toxicity Assessment: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

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

STOT Single exposure: Nont classified based on available information.

STOT Repeated exposure: Nont classified based on available information.

Ingredients:

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

Octamethylcyclotetrasiloxane: Routes of exposure: Ingestion. Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less. Routes of exposure: Inhalation (vapor) Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less. Routes of exposure: Skin Contact. Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Ingredients:

Triethoxy(octyl)silane: Species: Rat. Application Route: Ingestion. Remarks: Based on test data

Octamethylcyclotetrasiloxane: Species: Rat. Application Route: Ingestion. Remarks: Based on test data. Species: Rat. Application Route: Inhalation (vapor). Remarks: Based on test data. Species: Rat. Application Route: ISkin contact. Remarks: Based on test data.

Aspiration toxicity: Not classified based on available information.

Triethoxy(octyl)silane: Remarks: Findings from a combined repeated dose toxicity study with reproductive/developmental screening endpoints on n-octyltriethoxysilane have shown neurological effects in rats at high doses (1000 mg/kg). Paralysis and paresis of the limbs, an demyelination of the brain, spinal cord, sciatic and tibial nerves was noted in some animals.

Octamethylcyclotetrasiloxane: Results from a 2 year repeated vapor inhalation exposure study to rats of octamethyl cyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700ppm) only. Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans. 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.

Ecological Information - Section 12

Triethoxy(octyl)silane: Toxicity to daphnia and other aquatic invertebrates. EC50 (Daphnia sp.) > 0.049 mg/l Exposure time: 48 h. Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility. Toxicity to algae. ErC50 (Pseudokirchneriella subcapitata (green algae)) > 0.13 mg/l Exposure time: 72 h. Method: OECD Test guideline 201 Remarks: No toxicity at the limit of solubility.

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 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 limit of solubility.

Ecotoxicology Assessment: Chronic aquatic toxicity: May cause long lasting harmful effects to aquatic life.

Persistence and degradability: Ingredients: Triethoxy(octyl)silane: Biodegradability. Result: Not readily biodegradable. Biodegradation: 31.5%. Method: OECD Test Guideline 301D Remarks: Based on test data. 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 144h (24.6 C) pH: 7 Method: OECD Test Guideline 111. Bioaccumulative Potential.

Ingredients:**Triethoxy(octyl)silane:** Partition coefficient: n-octanol/water. log Pow: 6.41. Method: OECD Test Guideline 117**Octmethycyclotetrasiloxane:** Partition coefficient: n-octanol/water. log Pow: 6.48 (25.1 C)**Mobility in Soil:** No data available**Ingredients:****Octmethycyclotetrasiloxane:** Results of PBT and vPvB assessment. Remarks: Octmethycyclotetrasiloxane (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.**Disposal Considerations - Section 13****Disposal Methods:** Resource Conservation and Recovery Act (RCYA)

This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form. 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 unused product.

Transport Information - Section 14**UNRTDG:**

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

IATADGR:

Not regulated as a dangerous good

Domestic regulation 49 CFR:

Not regulated as a dangerous good

IMDGCode:

Not regulated as a dangerous good

Regulatory Information - Section 15**EPCRA Emergency Planning and Community Right to Know****CERCLA Reportable Quantity**

<u>Ingredients</u>	<u>CAS NO.</u>	<u>Component RQ (lbs)</u>	<u>Calculated Product RQ (lbs)</u>
Xylene	1330207	100	58824
Acetic acid	64197	5000	*
Ethylbenzene	100414	1000	*

* Calculated RQ exceeds reasonable attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

<u>Ingredients</u>	<u>CAS NO.</u>	<u>Component RQ (lbs)</u>	<u>Calculated Product RQ (lbs)</u>
Ethylenediamine	107153	5000	*

* Calculated RQ exceeds reasonable attainable upper limit.

SARA 311/312 Hazards: Acute Health Hazard. Chronic Health Hazard.**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302**SARA 313:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) Reporting levels establishing by SARA Title III, Section 313.

US State Regulations: Pennsylvania Right to Know

Water: 7732-18-5

Silicic acid, diethoxyoctylsilyl trimethylsilyl ester: 316689-57-5. Triethoxy(octyl)silane: 2943-75-1. Dimethyl siloxane, hydroxy terminated: 70131-67-8. Xylene: 1330-20-7. Acetic acid: 64-19-7.

California Prop. 65

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Methanol: 67-56-1. WARNING: This product contains a chemical known in the State of California to cause cancer.

Ethylbenzene: 100-41-4

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

NZIoC: All ingredients listed or exempt.

AICS: All ingredients listed or exempt.

IECSC: All ingredients listed or exempt.

ENCS/ISHL: All components are listed on

ENCS/ISHL or exempted from inventory listing

PICCS: All ingredients listed or exempt.

DSL: This product contains one or more substances which are not on the Canadian Domestic Substances List (DSL). Import of this product into Canada has volume limitations.

TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

TCSI: All ingredients listed or exempt.

Other Information - Section 16

Further Information: Health: 3. Flammability: 1. Physical Hazard: 0

Sources of key data used to compile the Material Safety Data Sheet

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 relate solely 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.



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