

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: April 29, 2013

SPI #09910-AB, 09910-RA

Triton™ X-100

Section 1: Identification

Chemical Name/Synonyms..... Triton™ X-100

Chemical Family..... Surfactant

Manufacturer: The Dow Chemical Company, 2030 Willard H. Dow Center, Midland, MI 48674

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name..... Triton™ X-100

CAS #'s..... 9036-19-5, 25322-68-3

Chemical Formula..... Not available

OSHA Hazards Classification:

Irritant

GHS Classification:

Acute toxicity, Oral – Category 5

Serious eye damage – Category 1

Pictogram



Signal word Danger

Hazard Statements:

H303..... May be harmful if swallowed

H318..... Causes serious eye damage

Precautionary Statements:

P280..... Wear protective gloves / eye protection/ face protection

P305+351+338..... IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Hazardous Material Information System USA

Health..... 3
Fire Hazard..... 1
Reactivity..... 0
Personal Protection.....

NFPA Rating (estimated)

Health..... 3
Flammability..... 1
Reactivity..... 0

Section 2: Composition

Component Name	CAS #	Percent	EINECS/ELINCS
Glycols, polyethylene, mono[(1,1,3,3-tetramethylbutyl)phenyl]ether	9036-19-5	>=97%	polymer
Polyethylene glycol	25322-68-3	<=3%	500-038-2

Section 3: Hazard Identification

Emergency overview:

Harmful. Skin and eye irritant. Harmful if swallowed. Risk of serious damage to eyes.

Appearance: Clear to slightly hazy yellow liquid.

Odor: Mild

Flash Point: 251°C (485°F) Pensky-Martens Closed Cup ASTM D93
290°C (555°F) Cleveland Open Cup ASTM D92

Warning!

Harmful. Skin and eye irritant. Harmful if swallowed. Risk of serious damage to eyes.

Target Organs: Eyes

Potential Health Effects

Eye: Causes severe eye irritation. Risk of serious damage to eyes. Chemical burns of the cornea and iritis may occur, which may result in permanent impairment of vision, even blindness. Mist may cause eye irritation.

Skin: Brief contact is essentially nonirritating to skin. Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness.

Ingestion: Low toxicity if swallowed. May cause gastro-intestinal irritation, accompanied by nausea, vomiting and diarrhea. Harmful if swallowed in large amounts.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Mist may cause respiratory tract irritation. Aspiration may cause lung damage.

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

Birth Defects/ Developmental Effects: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. These effects were only observed at exaggerated doses.

Section 4: First Aid Measures

Indication of immediate medical attention and special treatment needed:

Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Eyes: Flush eyes with copious amounts of water for at least 15 minutes, holding the eyelids open. Remove contact lenses AFTER THE FIRST 4 MINUTES and continue washing. Seek immediate medical attention, preferably from an ophthalmologist.

Skin: Immediately wash with plenty of soap and water. Flush skin with copious amounts of water for at least 15 minutes. If irritation develops or persists seek medical attention. Remove all contaminated clothing and wash before reuse.

Ingestion: Do not induce vomiting. Wash out mouth with water, provided person is conscious. If victim is conscious and alert, give 2-4 cupfuls of water. Seek medical attention.

Inhalation: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Seek medical attention, especially if cough or other symptoms appear.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

Suitable extinguishing media:

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Extinguishing media to avoid: Do not use direct water stream, it may spread the fire.

Special hazards arising from the substance or mixture:

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for Firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use waters pray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6: Accidental Release Measures

General Information: Use chemically resistive protective clothing and a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment.

Spills/Leaks: Absorb on sand, vermiculite, or dry lime/soda ash. Pickup, keep in closed container and hold for waste disposal. Ventilate area and wash site after material pickup is complete.

Environmental Precautions: Avoid contaminating water supply. Do not allow material to enter drains or water courses.

Section 7: Handling and Storage

Handling: Wash thoroughly after handling. Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Avoid repeated or prolonged exposure. Use with adequate ventilation.

Ventilation: provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Other Precautions: Surfactants can cause foaming problems in biological waste-water treatment plants and other high shear operations.

Storage: Store in tightly closed container in a cool well-ventilated area away from incompatible substances. Do not store in direct sunlight.

Section 8: Exposure Controls and Personal Protection

Exposure Limits:

Poly(ethylene oxide)	AIHA WEEL	TWA, particulate	10 mg/m ³
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Personal Protection:

Eye/Face Protection: Use chemical splash goggles.

Skin Protection: Wear Clean, body-covering clothing.

Hand Protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include butyl rubber, ethyl vinyl alcohol laminate (EVAL). Examples of acceptable glove barrier materials include natural rubber (latex), neoprene, nitrile/butadiene rubber (nitrile or NBR), polyvinyl chloride (PVC or vinyl), viton. 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.

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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls: Eye wash station and safety shower required.

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Section 9: Physical and Chemical Properties

Physical State: Liquid

Appearance: Clear pale yellow

Odor: mild

pH: 6 Calculated (5% aqueous solution)

Vapor Pressure: <0.01 mm Hg@20 °C

Vapor Density: >1 (Air=1) calculated

Evaporation Rate: <0.01 calculated

Percent Volatiles: 0.0065 weight per cent

Viscosity: n/a

Boiling Point: >200°C

Freezing/Melting Point: See Pour Point

Autoignition Temperature: n/a

Flash Point: 251°C (485°F) Pensky-Martens Closed Cup ASTM D93
290°C (555°F) Cleveland Open Cup ASTM D92

Decomposition Temperature: n/a

Explosion Limits, Lower: n/a

Upper: n/a

Solubility in water: Soluble in Water

Specific Gravity/Density: 1.06

Pour point: 2°C (36°F)

Molecular Formula: n/a

Section 10: Stability and Reactivity

Reactivity:

No dangerous reaction known under conditions of normal use.

Chemical stability:

Thermally stable at typical use temperatures.

Possibility of hazardous reactions:

Polymerization will not occur.

Conditions to avoid:

Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials:

Avoid contact with: Strong acids. Strong oxidizers.

Hazardous decomposition products:

Decomposition products depend upon temperature, air supply and the presence of other materials.

Decomposition products can include and are not limited to: Aldehydes, ketones, organic acids.

Section 11: Toxicological Information

Acute Toxicity:

Ingestion

Typical for this family of materials. LD50, Rat 1,900-5,000 mg/kg

Dermal

Typical for this family of materials. LD50, rabbit >3,000 mg/kg

Inhalation

As product: The LC50 has not been determined.

Eye damage / eye irritation:

Brief contact is essentially nonirritating to skin. Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness.

Sensitization:

Skin

Did not cause allergic skin reactions when tested in humans.

Respiratory

No relevant data found.

Repeated Dose Toxicity

No relevant data found.

Chronic Toxicity and Carcinogenicity

No relevant data found.

Developmental Toxicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. These effects were only observed at exaggerated doses. Did not cause birth defects in laboratory animals.

Reproductive Toxicity

No relevant data found.

Genetic Toxicology

No relevant data found.

Section 12: Ecological Information

Toxicity

For this family of materials: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

For this family of materials: LC50, fathead minnow (*Pimephales promelas*), static, 96h:4-8.9 mg/L.

Aquatic Invertebrate Acute Toxicity

For this family of materials: EC50, water flea *Daphnia magna*, static, 48h: 18-26 mg/L.

Toxicity to Micro-organisms

For this family of materials: IC50, bacteria, static, 16h: 5,000 mg/L.

Persistence and Degradability

For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Bio-degradation Tests:

For this family of materials: Bio-degradation 60%, 28d, OECD 301B Test, 10 Day Window: pass.

Biological oxygen demand (BOD):

BOD 5: 17-30%

BOD 10: 25-40%

BOD 20: 23-51%

Chemical Oxygen Demand: 1.71-2.18 mg/mg

Theoretical Oxygen Demand: 2.05 – 2.61 mg/mg

Bio-accumulative potential

Partition coefficient, n-octanol/water (log P_{0w}): 2.7 Estimated.

Bio-concentration Factor (BCF): 15; Estimated.

Mobility in Soil

Mobility in soil: No specific, relevant data available for assessment.

Section 13: Disposal Considerations

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.

For UNUSED and UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. Waste water treatment system.

Section 14: Transport Information

DOT Non-Bulk: Not regulated

DOT Bulk: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated.

Section 15: Regulatory Information

United States:

TSCA:

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical: as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III:

Section 302

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Sections 311 and 312

Immediate (Acute) health hazard	yes
Delayed (Chronic) health hazard	No
Fire hazard	No
Reactive hazard	No
Sudden Release of Pressure Hazard	No

Section 313: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

State Right-to-Know:

CAS# 9036-19-5 is listed on the New Jersey and Pennsylvania Right-to-Know Lists.

CAS# 25322-68-3 is listed on the New Jersey and Pennsylvania Right-to-Know Lists.

European Labeling in Accordance with EC Directives

Hazard Symbols: Xn Harmful

Risk Phrases:

R 22 Harmful if swallowed.

R 41 Risk of serious damage to eyes.

R 52 Harmful to aquatic organisms

R 53 May cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 7 Keep container tightly closed.

S 25 Avoid contact with eyes.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 39 Wear eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible)

S 60 This material and its container must be disposed of as hazardous waste.

Canada DSL/NDSL:

Canadian Ingredient Disclosure List:

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

WHMIS: This product has a **WHMIS** classification of **D2B**.

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

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