Safety Data Sheet

Cat. # DG507C

Octylphenolpoly(ethyleneglycolether)x, 10% Aqueous Solution (Proteomic Grade)

Size: 50ml
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Substance name: Triton X-100 (10% purified solution)
Product code: 203T
Type of product: Polymer
Formula: C₃₄H₆₂O₁₂
Synonyms: 2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethanol / 4(1,1,3,3-tetramethylbutyl)phenyl polyethylene glycol / poly(oxy-1,2-ethanediyl), alpha-(4-(1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / polyethylene glycol tert-octylphenyl ether / tert-octylphenoxypolyethoxethanol / TRITON X-100

Product group: Trade product
BIG No: 18801
REACH authorisation exemptions: Exempted from REACH registration

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture: Surfactant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre) Royal Victoria Hospital</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre) City Hospital</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre) Gwnwyn Ward, Llandough Hospital</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4 H302
Serious eye damage/eye irritation, Category 2 H319
Hazardous to the aquatic environment — Chronic Hazard, Category 2 H411
Triton X-100 (10% purified solution)

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
Harmful if swallowed. Causes serious eye irritation. Toxic to aquatic life with long lasting effects. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

<table>
<thead>
<tr>
<th>GHS07</th>
<th>GHS09</th>
</tr>
</thead>
</table>

CLP Signal word: Warning
Hazard statements (CLP):
H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP):
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 - Collect spillage.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances
Substance type: Polymer
Name: Triton X-100 (10% purified solution)

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water, Nuclease free</td>
<td>(CAS-No.) 7732-18-5 (EC-No.) 231-791-2</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>polyethyleneglycol para-(1,1,3,3-tetramethylbutyl) phenyl ether substance listed as REACH Candidate (4-(1,1,3,3-tetramethylbutyl) phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues])</td>
<td>(CAS-No.) 9002-93-1</td>
<td>10 - 50</td>
<td>Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after skin contact: Slight irritation.
Symptoms/effects after eye contact: Irritation of the eye tissue.
Chronic symptoms: No effects known.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Unsuitable extinguishing media: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture
Fire hazard: DIRECT FIRE HAZARD: Not easily combustible. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard.
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas.
Firefighting instructions: No specific fire-fighting instructions required.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Protective equipment: Gloves. Safety glasses. Protective clothing.
Emergency procedures: Mark the danger area. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply.
Methods for cleaning up: Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

5/11/2017

Storage temperature: 2 - 8 °C
Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids.
(stong) bases.
Storage area: Meet the legal requirements.
Special rules on packaging: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements.
Secure fragile packagings in solid containers.
Packaging materials: SUITABLE MATERIAL: metal. glass. MATERIAL TO AVOID: copper. bronze.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Materials for protective clothing:
GIVE EXCELLENT RESISTANCE: nitrile rubber

Hand protection:
Protective gloves against chemicals (EN374)

Eye protection:
Safety glasses

Skin and body protection:
Protective clothing

Respiratory protection:
Respiratory protection not required in normal conditions

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>646.37 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>9.7</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting point</td>
<td>6 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 200 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>251 °C (Closed cup)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 1.33 hPa (20 °C)</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.007</td>
</tr>
<tr>
<td>Density</td>
<td>1007 kg/m³</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water. Soluble in ethanol. Soluble in acetone. Soluble in aromatic hydrocarbons. Water: complete</td>
</tr>
<tr>
<td>Log Pow</td>
<td>4.86 (Estimated value)</td>
</tr>
</tbody>
</table>
Triton X-100 (10% purified solution)

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
Other properties : Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts with (strong) oxidizers and with (strong) reducers.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Triton X-100 (10% purified solution)

LD50 oral rat 1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit 8000 mg/kg (Rabbit, Literature study, Dermal)

polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)

LD50 oral rat 1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit 8000 mg/kg (Rabbit, Literature study, Dermal)

Skin corrosion/irritation : Not classified
pH: 9.7

Serious eye damage/irritation : Causes serious eye irritation.
pH: 9.7

Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed. Non-toxic in contact with skin (LD50 skin> 5000 mg/kg). Slightly irritant to skin. Causes serious eye irritation. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.


Ecology - water : Harmful to crustacea. Toxic to fishes. pH shift.

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.


**Triton X-100 (10% purified solution)**
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Triton X-100 (10% purified solution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>8.9 mg/l (96 h, Pimephales promelas, Literature study)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>26 mg/l (48 h, Daphnia magna, Literature study)</td>
</tr>
</tbody>
</table>

**polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)**

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triton X-100 (10% purified solution)</td>
</tr>
<tr>
<td>Not readily biodegradable in water.</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>2.19 mg/g</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>2.16 g O₂/g substance</td>
</tr>
</tbody>
</table>

**12.3. Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Triton X-100 (10% purified solution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
</tr>
<tr>
<td>4.86 (Estimated value)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).</td>
</tr>
</tbody>
</table>

**polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)**

| Log Pow                              |
| 4.86 (Estimated value)               |
| Bioaccumulative potential            |
| Potential for bioaccumulation (4 ≥ Log Kow ≤ 5). |

**12.4. Mobility in soil**

<table>
<thead>
<tr>
<th>Triton X-100 (10% purified solution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
<tr>
<td>No (test)data on mobility of the substance available.</td>
</tr>
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</table>

**12.5. Results of PBT and vPvB assessment**

<table>
<thead>
<tr>
<th>Triton X-100 (10% purified solution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
</tr>
<tr>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</td>
</tr>
</tbody>
</table>

**Component**

| polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1) |
| This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII |
| This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

**12.6. Other adverse effects**

| No additional information available |

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

<table>
<thead>
<tr>
<th>Waste treatment methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste treatment methods.</td>
</tr>
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</table>

5/11/2017
EN (English)
### Triton X-100 (10% purified solution)

**Safety Data Sheet**

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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**Product/Packaging disposal recommendations:**

Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. In authorized incinerator equipped with flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent. May be discharged to wastewater treatment installation.

**Additional information:**


**European List of Waste (LoW) code:**

15 01 10* - packaging containing residues of or contaminated by dangerous substances

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### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

- **UN-No. (ADR):** UN 3082
- **UN-No. (IMDG):** UN 3082
- **UN-No. (IATA):** UN 3082
- **UN-No. (ADN):** UN 3082
- **UN-No. (RID):** UN 3082

#### 14.2. UN proper shipping name

- **Proper Shipping Name (ADR):** Environmentally hazardous substance, liquid, n.o.s.
- **Proper Shipping Name (IMDG):** Environmentally hazardous substance, liquid, n.o.s.
- **Proper Shipping Name (IATA):** Environmentally hazardous substance, liquid, n.o.s.
- **Proper Shipping Name (ADN):** Environmentally hazardous substance, liquid, n.o.s.

**Transport document description:**

- **Transport document description (ADR):** UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III, (-)
- **Transport document description (IMDG):** UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III, MARINE POLLUTANT
- **Transport document description (IATA):** UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III
- **Transport document description (ADN):** UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III

#### 14.3. Transport hazard class(es)

**ADR**

- **Transport hazard class(es) (ADR):** 9
  - **Danger labels (ADR):** 9

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**IMDG**

- **Transport hazard class(es) (IMDG):** 9
  - **Danger labels (IMDG):** 9

---

**IATA**

- **Transport hazard class(es) (IATA):** 9
  - **Hazard labels (IATA):** 9

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**ADN**

- **Transport hazard class(es) (ADN):** 9

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5/11/2017

EN (English)

7/9
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Danger labels (ADN) : 9

RID
Transport hazard class(es) (RID) : 9
Danger labels (RID) : 9

14.4. Packing group
Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards
Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Transport regulations (ADR) : Subject
Classification code (ADR) : M6
Hazard identification number (Kemler No.) : 90
Orange plates : 90
Tunnel restriction code (ADR) : -
EAC code : •3Z

Transport by sea
Transport regulations (IMDG) : Subject
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F

Air transport
Transport regulations (IATA) : Subject to the provisions

Inland waterway transport
Classification code (ADN) : M6
Carriage permitted (ADN) : T

Rail transport
Transport regulations (RID) : Subject
Classification code (RID) : M6

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Triton X-100 (10% purified solution) is not on the REACH Candidate List
Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] (CAS 9002-93-1)
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Triton X-100 (10% purified solution) is not on the REACH Annex XIV List
Contains REACH Annex XIV substances:
Triton X-100 (10% purified solution) is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Substance name: Triton X-100 (10% purified solution)
Product code: 203T
Type of product: Polymer
Formula: C34H62O12
Synonyms: 2-(4-(2,4,4-trimethylpentan-2-yl)phenoxy)ethanol / 4(1,1,3,3-tetramethylbutyl)phenyl polyethylene glycol / poly(oxy-1,2-ethanediyl), alpha-(4-(1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / polyethylene glycol tert-octylphenyl ether / tert-octylphenoxypolyethoxylethanol / TRITON X-100
Product group: Trade product
BIG No: 18801
REACH authorisation exemptions: Exempted from REACH registration

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture: Surfactant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

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<tr>
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<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre) Royal Victoria Hospital</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
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<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre) City Hospital</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
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<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre) Gwnwyn Ward, Llandough Hospital</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
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<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
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<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
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<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4: H302
Serious eye damage/eye irritation, Category 2: H319
Hazardous to the aquatic environment — Chronic Hazard, Category 2: H411
2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

- GHS07
- GHS09

CLP Signal word:
- Warning

Hazard statements (CLP):
- H302 - Harmful if swallowed.
- H319 - Causes serious eye irritation.
- H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP):
- P264 - Wash hands, forearms and face thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P351+P338 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P330 - Rinse mouth.
- P337+P313 - If eye irritation persists: Get medical advice/attention.
- P391 - Collect spillage.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Polymer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Triton X-100 (10% purified solution)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water, Nuclease free</td>
<td>(CAS-No.) 7732-18-5 (EC-No.) 231-791-2</td>
<td>&gt;= 80</td>
<td>Not classified</td>
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<tr>
<td>polyethyleneglycol para-(1,1,3,3-</td>
<td>(CAS-No.) 9002-93-1</td>
<td>10 - 50</td>
<td>Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Aquatic Chronic 2, H411</td>
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<tr>
<td>tetramethylbutyl)phenyl ether substance</td>
<td></td>
<td></td>
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<tr>
<td>listed as REACH Candidate (4-(1,1,3,3-</td>
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<tr>
<td>tetramethylbutyl)phenol, ethoxylated</td>
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<tr>
<td>[covering well-defined substances and UVCB-</td>
<td></td>
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<tr>
<td>substances, polymers and homologues)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>substance listed in REACH Annex XIV (4-(1,1,3,3-</td>
<td></td>
<td></td>
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<tr>
<td>Tetramethylbutyl) phenol, ethoxylated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(covering well-defined substances and UVCB-</td>
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<tr>
<td>substances, polymers and homologues)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
- Check the vital functions. Unconscious: maintain adequate airway and respiration.
- Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation.
### First-aid measures after inhalation
- Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

### First-aid measures after skin contact
- Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

### First-aid measures after eye contact
- Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist.

### First-aid measures after ingestion

### 4.2. Most important symptoms and effects, both acute and delayed

#### Symptoms/effects after skin contact
- Slight irritation.

#### Symptoms/effects after eye contact
- Irritation of the eye tissue.

#### Symptoms/effects after ingestion

#### Chronic symptoms
- No effects known.

### 4.3. Indication of any immediate medical attention and special treatment needed
- Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media
- **Suitable extinguishing media**
  - Quick-acting ABC powder extinguisher.
  - Quick-acting BC powder extinguisher.
  - Quick-acting class B foam extinguisher.
  - Quick-acting CO2 extinguisher.
  - Class B foam (alcohol-resistant).
  - Water spray if puddle cannot expand.

- **Unsuitable extinguishing media**
  - Water (quick-acting extinguisher, reel); risk of puddle expansion.
  - Water; risk of puddle expansion.

#### 5.2. Special hazards arising from the substance or mixture
- **Fire hazard**
  - DIRECT FIRE HAZARD: Not easily combustible.
  - INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard.

- **Hazardous decomposition products in case of fire**
  - Toxic fumes may be released.

#### 5.3. Advice for firefighters
- **Precautionary measures fire**
  - Exposure to fire/heat: keep upwind.
  - Exposure to fire/heat: seal off low-lying areas.
  - Exposure to fire/heat: have neighbourhood close doors and windows.

- **Firefighting instructions**
  - No specific fire-fighting instructions required.

- **Protection during firefighting**
  - Heat/fire exposure: compressed air/oxygen apparatus.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel**
  - **Protective equipment**
    - Gloves.
    - Safety glasses.
    - Protective clothing.
  - **Emergency procedures**
    - Mark the danger area.
    - No naked flames.
    - Wash contaminated clothes.

- **For emergency responders**
  - **Protective equipment**
    - Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions
- Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up
- **For containment**
  - Contain released product, pump into suitable containers. Plug the leak, cut off the supply.

- **Methods for cleaning up**
  - Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

- **Other information**
  - Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections
- For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling
- **Precautions for safe handling**

- **Hygiene measures**
  - Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

- **Storage conditions**
  - Store in a well-ventilated place. Keep cool.
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Storage temperature: 2 - 8 °C
Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases.
Storage area: Meet the legal requirements.
Special rules on packaging: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements.
Secure fragile packagings in solid containers.
Packaging materials: SUITABLE MATERIAL: metal. glass. MATERIAL TO AVOID: copper. bronze.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available
8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Materials for protective clothing:
GIVE EXCELLENT RESISTANCE: nitrile rubber

Hand protection:
Protective gloves against chemicals (EN374)

Eye protection:
Safety glasses

Skin and body protection:
Protective clothing

Respiratory protection:
Respiratory protection not required in normal conditions

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Liquid.
Molecular mass: 646.37 g/mol
Colour: Light yellow.
Odour: Mild odour.
Odour threshold: No data available
pH: 9.7
Relative evaporation rate (butylacetate=1): < 1
Melting point: 6 °C
Freezing point: No data available
Boiling point: > 200 °C
Flash point: 251 °C (Closed cup)
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Not applicable
Vapour pressure: < 1.33 hPa (20 °C)
Relative vapour density at 20 °C: > 1
Relative density: 1.007
Density: 1007 kg/m³
Water: complete
Log Pow: 4.86 (Estimated value)
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: No data available

9.2. Other information
Other properties: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reacts with (strong) oxidizers and with (strong) reducers.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Harmful if swallowed.
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

Triton X-100 (10% purified solution)
LD50 oral rat: 1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit: 8000 mg/kg (Rabbit, Literature study, Dermal)

polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)
LD50 oral rat: 1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit: 8000 mg/kg (Rabbit, Literature study, Dermal)

Skin corrosion/irritation: Not classified
pH: 9.7
Serious eye damage/irritation: Causes serious eye irritation.
pH: 9.7
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Potential adverse human health effects and symptoms: Harmful if swallowed. Non-toxic in contact with skin (LD50 skin> 5000 mg/kg). Slightly irritant to skin. Causes serious eye irritation. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Toxic to aquatic life with long lasting effects. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.
Ecology - water: Harmful to crustacea. Toxic to fishes. pH shift.
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Triton X-100 (10% purified solution)</th>
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<tr>
<td>LC50 fish 1</td>
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<td>EC50 Daphnia 1</td>
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<th>polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)</th>
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<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Triton X-100 (10% purified solution)
Persistence and degradability
Not readily biodegradable in water.
Chemical oxygen demand (COD)
2.19 mg/g
ThOD
2.16 g O₂/g substance

<table>
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<th>polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)</th>
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<td>Persistence and degradability</td>
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<tr>
<td>Chemical oxygen demand (COD)</td>
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<td>ThOD</td>
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12.3. Bioaccumulative potential

Triton X-100 (10% purified solution)
Log Pow
4.86 (Estimated value)
Bioaccumulative potential
Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).

<table>
<thead>
<tr>
<th>polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)</th>
</tr>
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<tbody>
<tr>
<td>Log Pow</td>
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<tr>
<td>Bioaccumulative potential</td>
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12.4. Mobility in soil

Triton X-100 (10% purified solution)
Ecology - soil
No (test)data on mobility of the substance available.

<table>
<thead>
<tr>
<th>polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Triton X-100 (10% purified solution)
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Waste treatment methods
: Waste treatment methods.
Product/Packaging disposal recommendations: Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. In authorized incinerator equipped with flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent. May be discharged to wastewater treatment installation.


European List of Waste (LoW) code: 15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : UN 3082
UN-No. (IMDG) : UN 3082
UN-No. (IATA) : UN 3082
UN-No. (ADN) : UN 3082
UN-No. (RID) : UN 3082

14.2. UN proper shipping name
Proper Shipping Name (ADR) : Environmentally hazardous substance, liquid, n.o.s.
Proper Shipping Name (IMDG) : Environmentally hazardous substance, liquid, n.o.s.
Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s.
Proper Shipping Name (ADN) : Environmentally hazardous substance, liquid, n.o.s.
Proper Shipping Name (RID) : Environmentally hazardous substance, liquid, n.o.s.

Transport document description (ADR) : UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III, (-)
Transport document description (IMDG) : UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III, MARINE POLLUTANT
Transport document description (IATA) : UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III
Transport document description (ADN) : UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III
Transport document description (RID) : UN 3082 Environmentally hazardous substance, liquid, n.o.s., 9, III

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 9
Danger labels (ADR) : 9

IMDG
Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) : 9

IATA
Transport hazard class(es) (IATA) : 9
Hazard labels (IATA) : 9

ADN
Transport hazard class(es) (ADN) : 9
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Danger labels (ADN) : 9

RID
Transport hazard class(es) (RID) : 9
Danger labels (RID) : 9

14.4. Packing group
 Packing group (ADR) : III
 Packing group (IMDG) : III
 Packing group (IATA) : III
 Packing group (ADN) : III
 Packing group (RID) : III

14.5. Environmental hazards
Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Transport regulations (ADR) : Subject
Classification code (ADR) : M6
Hazard identification number (Kemler No.) : 90
Orange plates :

Tunnel restriction code (ADR) : -
EAC code : •3Z

Transport by sea
Transport regulations (IMDG) : Subject
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F

Air transport
Transport regulations (IATA) : Subject to the provisions

Inland waterway transport
Classification code (ADN) : M6
Carriage permitted (ADN) : T

Rail transport
Transport regulations (RID) : Subject
Classification code (RID) : M6

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Triton X-100 (10% purified solution) is not on the REACH Candidate List
Contains a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] (CAS 9002-93-1)
Triton X-100 (10% purified solution)
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Triton X-100 (10% purified solution) is not on the REACH Annex XIV List

Contains REACH Annex XIV substances:
Triton X-100 (10% purified solution) is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
</tr>
<tr>
<td>H302</td>
</tr>
<tr>
<td>H319</td>
</tr>
<tr>
<td>H411</td>
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</tbody>
</table>

Safety Data Sheet applicable for regions: GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.