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**SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

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**Contact information**

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**Product identifier** Part Number 101-8818 - TSP Reverse Transcriptase

**Synonyms** None Identified

**Trade names** None Identified

**Chemical family** Mixture

**Relevant identified uses of the substance or mixture and uses advised against** For research use only. Not for use in diagnostic procedures.

**Note** This SDS is written to address potential worker health and safety issues associated with the handling of the formulated product.

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**SECTION 2 - HAZARDS IDENTIFICATION**

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**Classification of the substance or mixture**

**Globally Harmonized System [GHS]** Not classified.

**Other/Supplemental** Mixture not yet fully tested

**Label elements**

**GHS hazard pictogram** None required

**GHS signal word** None required

**GHS hazard statements** None required

**SECTION 2 - HAZARDS IDENTIFICATION ...continued**

<b>GHS precautionary statements</b>	None required
<b>Other hazards</b>	The potential health hazards associated with exposure/handling of this mixture are unknown; no data specific for the mixture were identified. The following data describe the hazards of individual ingredients, where applicable.
<b>Note</b>	This mixture does not meet criteria for classification under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). Nevertheless, it should be handled with caution as it has not yet been fully tested.

**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ELIN CS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Glycerol	56-81-5	200-289-5	40-70%	Not classified
Triton X-100	9002-93-1	N/A	≤0.1%	ATO4:H302; SI2:H315; EI2:H319; AA1:H400

**Note** The ingredients listed above are considered hazardous and/or are one of the primary ingredients. Glycerol is listed because it has OELs. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

**SECTION 4 - FIRST AID MEASURES**
**Description of first aid measures**

<b>Immediate Medical Attention Needed</b>	No. If exposed or concerned: Get medical advice/attention.
<b>Eye Contact</b>	If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.
<b>Skin Contact</b>	Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.
<b>Inhalation</b>	Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.
<b>Ingestion</b>	Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.
<b>Protection of first aid responders</b>	See Section 8 for Exposure Controls/Personal Protection recommendations.

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**SECTION 4 - FIRST AID MEASURES ...continued**

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**Most important symptoms and effects, both acute and delayed** See Sections 2 and 11

**Indication of immediate medical attention and special treatment needed, if necessary** Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

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**SECTION 5 - FIREFIGHTING MEASURES**

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**Extinguishing media** Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

**Specific hazards arising from the substance or mixture** May emit carbon monoxide and carbon dioxide.

**Flammability/Explosivity** No explosivity or flammability data identified. As product is an aqueous solution, it is not expected to be flammable or explosive.

**Advice for firefighters** In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

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**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures** If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated. Do not breathe mist/vapors/spray.

**Environmental precautions** Avoid release to the environment.

**Methods and material for containment and cleaning up** DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g., paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.

**Reference to other sections** See Sections 8 and 13 for more information.

**SECTION 7 - HANDLING AND STORAGE**

**Precautions for safe handling** Follow recommendations for handling pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed). Avoid contact with skin and eyes. Wash thoroughly after handling. Avoid breathing vapor/ mist/spray.

**Conditions for safe storage including any incompatibilities** Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Specific end use(s)** No information identified.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Control Parameters/Occupational Exposure Limit Values**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>	
Glycerol	ACGIH,	TWA-8 HR	10 mg/m <sup>3</sup> (listed as glycerin mist)	
	Belgium,			
	Netherlands,			
	Portugal,			
	United Kingdom,			
	Mexico,			
	Singapore			
	Estonia,	TWA-8 HR		10 mg/m <sup>3</sup>
	France, Greece,			
	Ireland, Poland,			
Spain				
Finland	TWA-8 HR	20 mg/m <sup>3</sup>		
Switzerland	TWA-8 HR	50 mg/m <sup>3</sup>		
Switzerland	STEL	100 mg/m <sup>3</sup> (inhalable)		
United Kingdom	STEL	30 mg/m <sup>3</sup> (mist)		
Triton X-100	--	--	--	

**Exposure/Engineering controls** Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at aerosol/mist-generating points. Emphasis is to be placed on closed material transfer systems and process containment, with limited open handling. High-energy operations should be done within an approved emission control or containment system.

**Respiratory protection** Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. An approved and properly fitted air-purifying respirator with HEPA filters may be considered to provide ancillary protection based on the known or foreseeable limitations of existing engineering controls.

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**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ...continued**


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<b>Hand protection</b>	Wear nitrile or other impervious gloves if skin contact is possible. Double gloves should be considered.
<b>Skin protection</b>	Wear appropriate gloves, lab coat, or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use.
<b>Eye/face protection</b>	Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.
<b>Environmental Exposure Controls</b>	Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.
<b>Other protective measures</b>	Wash hands in the event of contact with this product/mixture, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**


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**Information on basic physical and chemical properties**

<b>Appearance</b>	Liquid
<b>Color</b>	Clear
<b>Odor</b>	No information identified.
<b>Odor threshold</b>	No information identified.
<b>pH</b>	No information identified.
<b>Melting point/freezing point</b>	No information identified.
<b>Initial boiling point and boiling range</b>	No information identified.
<b>Flash point</b>	No information identified.
<b>Evaporation rate</b>	No information identified.
<b>Flammability (solid, gas)</b>	No information identified.
<b>Upper/lower flammability or explosive limits</b>	No information identified.
<b>Vapor pressure</b>	No information identified.

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES** ...continued

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<b>Vapor density</b>	No information identified.
<b>Relative density</b>	No information identified.
<b>Water solubility</b>	Miscible in water.
<b>Solvent solubility</b>	No information identified.
<b>Partition coefficient (<i>n</i>-octanol/water)</b>	No information identified.
<b>Auto-ignition temperature</b>	No information identified.
<b>Decomposition temperature</b>	No information identified.
<b>Viscosity</b>	No information identified.
<b>Explosive properties</b>	No information identified.
<b>Oxidizing properties</b>	No information identified.
<b>Other information</b>	
<b>Molecular formula</b>	Not applicable (Mixture)
<b>Molecular weight</b>	Not applicable (Mixture)

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**SECTION 10 - STABILITY AND REACTIVITY**

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<b>Reactivity</b>	No information identified.
<b>Chemical stability</b>	Stable under normal handling and storage conditions.
<b>Possibility of hazardous reactions</b>	No information identified.
<b>Conditions to avoid</b>	No information identified.
<b>Incompatible materials</b>	No information identified.
<b>Hazardous decomposition products</b>	No information identified.

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

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**Note** No data for this product/mixture were identified. The following data describe the active ingredient and/or the individual ingredients where applicable.

**Information on toxicological effects**

**Route of entry** May be absorbed by inhalation, skin contact, and eye contact.

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**SECTION 11 - TOXICOLOGICAL INFORMATION ...continued**


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**Acute toxicity**

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Glycerol	LD <sub>50</sub>	Oral	Rat	>10000 mg/kg
	LD <sub>50</sub>	Oral	Mouse	>= 4090 mg/kg
	LD <sub>50</sub>	Dermal	Rat	>21900 mg/kg
	LC <sub>50</sub>	Inhalation	Rat	>570 mg/m <sup>3</sup> /1 hour
	LD <sub>50</sub>	Dermal	Mouse	>18700 mg/kg
	LD <sub>50</sub>	Dermal	Rabbit	>10000 mg/kg
Triton X-100	LD <sub>50</sub>	Oral	Rat	1800 mg/kg
	LD <sub>50</sub>	Intravenous (IV)	Mouse	1200 mg/kg

**Irritation/Corrosion** Triton X-100 is considered irritating to eyes and skin.

**Sensitization** No data on product formulation.

**STOT-single exposure** No data on product formulation.

**STOT-repeated exposure/Repeat-dose toxicity** No data on product formulation.

**Reproductive toxicity** No data on product formulation.

**Developmental toxicity** No data on product formulation.

**Genotoxicity** No data on product formulation.

**Carcinogenicity** No data on product formulation. None of the components of the product/mixture present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

**Aspiration hazard** No data on product formulation.

**Human health data** See "Section 2 - Other Hazards"

**Additional information** The toxicological properties of this mixture have not been fully characterized.

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**SECTION 12 - ECOLOGICAL INFORMATION**


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**Toxicity**

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Glycerol	--	--	--
Triton X-100	EC <sub>50</sub> (96 h)	Green Algae	0.21 mg/L
	LC <sub>50</sub> (96 h)	Fathead minnow	4.5 mg/L

**Persistence and Degradability** No data available.

**Bioaccumulative potential** No data available.

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**SECTION 12 - ECOLOGICAL INFORMATION ...continued**

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<b>Mobility in soil</b>	No data available.
<b>Results of PBT and vPvB assessment</b>	Not performed.
<b>Other adverse effects</b>	No data available.
<b>Note</b>	The environmental characteristics of this product/mixture have not been fully investigated. Releases to the environment should be avoided.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

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<b>Waste treatment methods</b>	Used product should be disposed of according to local, state, and federal regulations. Do not discharge into sanitary drains (e.g. non-process drains) or down the toilet. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.
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**SECTION 14 - TRANSPORT INFORMATION**

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<b>Transport</b>	Based on the available data, this product/mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
<b>UN number</b>	None assigned.
<b>UN proper shipping name</b>	None assigned.
<b>Transport hazard classes and packing group</b>	None assigned.
<b>Environmental hazards</b>	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
<b>Special precautions for users</b>	Avoid release to the environment.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.



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**SECTION 15 - REGULATORY INFORMATION**

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<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
<b>Chemical safety assessment</b>	Not conducted.
<b>TSCA status</b>	Not listed.
<b>SARA section 313</b>	Not listed.
<b>California proposition 65</b>	Not listed.
<b>Additional information</b>	No other information identified.

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**SECTION 16 - OTHER INFORMATION**

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<b>Full text of H phrases and GHS classifications</b>	ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. SI2 - Skin irritant Category 2. H315 - Causes skin irritation. EI2 - Eye irritant Category 2. H319 - Causes serious eye irritation. AA1- Aquatic toxicity (acute) - Category 1. H400 - Very toxic to aquatic life.
<b>Sources of data</b>	Information from published literature and internal company data.
<b>Abbreviations</b>	ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System
<b>Issue Date</b>	May 2019
<b>Revisions</b>	Rev A: (SSF) ECN-3393; Refer to PDM for date released; First version of this SDS.

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**SECTION 16 - OTHER INFORMATION ...continued**

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**Disclaimer**

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