

Material Name: POLARIS™ SINGLE-CELL mRNA SEQ REAGENT KIT

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

Contact information

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Product identifier	Polaris™ Single-Cell mRNA Seq Reagent Kit
Manufacturer's Part Number:	100-9170, 100-9168, 100-9169, 101-0080, 101-0081
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 health and safety issues associated with the handling of this reagent kit. For occupational health and safety issues associated with manufacture of this kit, please consult the SDSs of the individual ingredients.

SECTION 2 - HAZARDS IDENTIFICATION

This product contains seventeen (17) parts. The following provides the hazard classification for each part.

Part 1: Polaris™ Lysis Reagent (Part #: 101-1367)

Classification of the substance or mixture

Globally Harmonized System [GHS]	Irritant (eye) – Category 2.
AU Hazard Classification (NOHSC)	Hazardous Substance. Hazardous goods.

Label elements

GHS hazard pictogram



GHS signal word Warning

GHS hazard statements H319 – Causes serious eye irritation.

GHS precautionary statements P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves/eye protection/face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice/attention.

Other hazards May cause eye corrosion/irritation. Part/mixture not yet fully tested.

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Note This part of the product is classified as hazardous according to Regulation EC No 1272/2008 (EU CLP) and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological and ecological properties of this part/mixture have not been fully characterized.

Part description and number

- Part 2: Cell Wash Buffer (Part #: 100-5314)**
- Part 3: Cell Suspension Reagent (Part #: 101-0434)**
- Part 4: Polaris™ Blocking Reagent (Part #: 101-0435)**
- Part 5: Polaris™ Cell Capture Beads (Part #: 100-9571)**
- Part 6: Polaris™ Bead Linking Reagent (Part #: 100-9964)**
- Part 7: Polaris™ Bead Suspension Reagent (Part #: 101-1364)**
- Part 8: Valve Priming Reagent (Part #: 100-9940)**
- Part 9: Actuation Fluid (Part #: 100-9166)**
- Part 10: Harvest Reagent (Part #: 100-9941)**
- Part 11: Preloading Reagent (Part #: 100-9942)**
- Part 12: Loading Reagent (Part #: 101-1004)**
- Part 13: DNA Dilution Reagent (Part #: 100-9167)**
- Part 14: Polaris™ Lysis Plus Rgt (Part #: 101-1365)**
- Part 15: Polaris™ RT Plus Rgt (Part #: 101-1366)**
- Part 16: Polaris™ Initialization Rgt (Part #: 101-7371)**
- Part 17: Polaris™ Imaging Rgt (Part #: 101-5401)**

GHS and Australian Hazard Classification

- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.
- None required.

Other hazards None identified.

Note Parts 2-17 are not classified as hazardous according to Regulation EC No 1272/2008 (EU CLP) and Hazard Communication Standard No. 1910.1200 (US OSHA).

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Part 1: Polaris™ Lysis Reagent (Part #: 101-1367)

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Triton X-100	9002-93-1	N/A	0.5-5%	ATO4:H302; EI1:H318; CA2:H411

Note Triton X-100 is considered hazardous. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

The components within Parts 2-17 are non-hazardous and/or present at amounts below reportable limits.

SECTION 4 - FIRST AID MEASURES

Description of first aid measures

- Immediate Medical Attention Needed** Yes for Part 1 only; all other parts immediate medical attention would not necessarily be needed.
- Eye Contact** 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.
- Skin Contact** Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

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Inhalation	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.
Ingestion	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.
Protection of first aid responders	See Section 8 for Exposure Controls/Personal Protection recommendations.
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.

SECTION 5 - FIREFIGHTING MEASURES

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	No information identified. May emit carbon monoxide, carbon dioxide, nitrogen-, sulfur-, and chloride-containing compounds.
Flammability/Explosivity	Not expected to be flammable or explosive.
Advice for firefighters	Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

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	Do not empty into drains. 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 with an appropriate solvent (see Section 9).
Reference to other sections	See Sections 8 and 13 for more information.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling	Avoid breathing mist/vapors/spray. Do not permit eating/drinking/smoking near this material.
Conditions for safe storage including any incompatibilities	Store at 2-8 °C in a well-ventilated area; keep containers upright and tightly closed.
Specific end use(s)	No information identified.

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Note	Dispose of broken vials in a sharps container.								
Control Parameters/Occupational Exposure Limit Values	The following values are for those ingredients in the parts of the kit that are considered hazardous.								
<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Compound</u></th> <th style="text-align: center;"><u>Issuer</u></th> <th style="text-align: center;"><u>Type</u></th> <th style="text-align: center;"><u>OEL</u></th> </tr> </thead> <tbody> <tr> <td>Triton X-100</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> <td style="text-align: center;">--</td> </tr> </tbody> </table>	<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>	Triton X-100	--	--	--	
<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>						
Triton X-100	--	--	--						
Exposure/Engineering controls	None required for normal handling of packaged product. 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.								
Respiratory protection	None required for normal handling of packaged product. Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. If needed for routine liquid handling tasks, an approved and properly fitted air purifying respirator should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a powered air-purifying respirator equipped with HEPA filters or combination filters or a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where a lower level of respiratory protection may not provide adequate protection.								
Hand protection	Wear nitrile or other impervious gloves if skin contact is possible. When the material is diluted in an organic solvent, wear gloves that provide protection against the solvent.								
Skin protection	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.								
Eye/face protection	Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary, especially for those parts of the kit that are irritants or corrosive to the eye. 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.								
Environmental Exposure Controls	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.								
Other protective measures	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).								

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquids (supplied as individually packaged reagents)
Color	No information identified.
Odor	No information identified.
Odor threshold	No information identified.
pH	No information identified.

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Melting point/freezing point	No information identified.
Initial boiling point and boiling range	No information identified.
Flash point	No information identified.
Evaporation rate	No information identified.
Flammability (solid, gas)	No information identified.
Upper/lower flammability or explosive limits	No information identified.
Vapor pressure	No information identified.
Vapor density	No information identified.
Relative density	No information identified.
Water solubility	No information identified.
Solvent solubility	No information identified.
Partition coefficient (n-octanol/water)	No information identified.
Auto-ignition temperature	No information identified.
Decomposition temperature	No information identified.
Viscosity	No information identified.
Explosive properties	No information identified.
Oxidizing properties	No information identified.

Other information

Molecular weight	Not applicable (Mixture)
Molecular formula	Not applicable (Mixture)

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	No information identified.
Chemical stability	Stable when stored as recommended.
Possibility of hazardous reactions	No information identified.
Conditions to avoid	No information identified.
Incompatible materials	No information identified.
Hazardous decomposition products	No information identified.

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SECTION 11 - TOXICOLOGICAL INFORMATION

Note No data were identified for the product/mixture. The following provides the toxicological properties of the hazardous ingredients identified in this kit.

Information on toxicological effects

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

Acute toxicity

Compound	Type	Route	Species	Dose
Triton X-100	LD ₅₀	Oral	Rat	707-1800 mg/kg
	LD ₅₀	Dermal	Rabbit	>5000 mg/kg

Irritation/Corrosion Triton X-100 may cause eye irritation.

Sensitization No studies identified.

STOT-single exposure No studies identified.

STOT-repeated exposure/Repeat-dose toxicity No studies identified.

Reproductive toxicity No studies identified.

Developmental toxicity No studies identified.

Genotoxicity No studies identified.

Carcinogenicity No studies identified. No ingredients contained in this product/mixture are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

Aspiration hazard No studies identified.

Human health data See Section 2 - "Other hazards"

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity

Compound	Type	Species	Concentration
Triton X-100	EC ₅₀ /48h	Daphnia	26 mg/L
	LC ₅₀ /96h	Fathead minnow	8.9 mg/L

Persistence and Degradability Triton X-100 is not readily biodegradable. No data identified for the remaining components.

Bioaccumulative potential No data identified.

Mobility in soil No data identified.

Results of PBT and vPvB assessment Not performed.

Other adverse effects No data identified.

Note The environmental characteristics of this product/mixture have not been fully investigated. The above data are for the identified hazardous ingredient. Releases to the environment should be avoided.

Material Name: POLARIS™ SINGLE-CELL mRNA SEQ REAGENT KIT**SECTION 13 - DISPOSAL CONSIDERATIONS**

Waste treatment methods Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. 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.

SECTION 14 - TRANSPORT INFORMATION

Transport 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.

UN number None assigned.

UN proper shipping name None assigned.

Transport hazard classes and packing group None assigned

Environmental hazards Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.

Special precautions for users Avoid release to the environment.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Hazardchem Code/HIN None assigned.

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture This SDS complies with the requirements under US, EU and GHS (EU CLP - Regulation EC No 1272/2008) guidelines. Consult your local/regional authorities for more information.

Chemical safety assessment Not conducted.

WHMIS classification Part 1: E12:H319

TSCA status Triton X-100 is listed in TSCA.

SARA section 313 None of the ingredients of this product are listed.

California proposition 65 None of the ingredients of this product are listed.

Component Analysis - State None of the ingredients of this product are listed.

Component Analysis – Chemical Inventory Triton X-100 is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, New Zealand, the Philippines, and USA

Additional information No other information identified.

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SECTION 16 - OTHER INFORMATION

NFPA Ratings	Triton X-100	Health: 1	Fire: 0	Reactivity: 0
Full text of H phrases and GHS classifications	ATO4 – Acute Toxicity (Oral) Category 4. H302 – Harmful if swallowed. EC1 – Eye corrosion Category 1. H318 – Causes serious eye damage. EI2 – Eye irritant Category 2. H318 – Causes serious eye irritation. CA2 – Chronic Aquatic Toxicity Category 2. H411 – Toxic to aquatic life with long lasting effects.			
Sources of data	Information from published literature and internal company data.			
Abbreviations	<p>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; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; US – United States; WHMIS - Workplace Hazardous Materials Information System</p>			
Revisions	(SSF) ECN-2948: Refer to PDM for date released; Initial release of SDS.			
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