

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

TRADE NAME (AS LABELED):

LabChip XT DNA 750 Kit

LabChip XT DNA 300 Kit

CODE NUMBERS:

PN 760541

PN 760601

PRODUCT USE:

Laboratory Biological Research

Supplier of the Safety Data Sheet

U.S. SUPPLIER/MANUFACTURER'S NAME:

Caliper Life Sciences

Address:

68 Elm Street

Hopkinton, MA 01748

Business Phone:

+1-800-LAB-CHIP (toll-free)

+1-800-522-2447 (toll-free)

+1-508-435-3439 (outside North America)

AUSTRALIAN SUPPLIER/DISTRIBUTOR'S NAME:

Address:

Business Phone:

EUROPEAN SUPPLIER/ DISTRIBUTOR'S NAME:

Address:

Business Phone:

EMERGENCY PHONE:

CHEM-TEL: 1-800-255-3924 in U.S., Canada, Puerto Rico, U.S.

Virgin Islands (24hrs)

+1-813-248-0585 (outside areas above, call collect)

Technical Support: Tech.Support@caliperls.com

EMAIL ADDRESS/COMPETENT PERSON FOR MSDS:

July 16, 2010

DATE OF PREPARATION:

January 18, 2011

DATE OF REVISION:

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], European Union [Regulation (EC) 1907/2006 Annex II], Australian [NOHSC:2011 (2003)], EU CLP 1278: 2008, Japanese Industrial Standard (JIS Z 7250: 2000) and Global Harmonization Standard required information is included in appropriate sections based on the U.S. ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

## 2. HAZARD IDENTIFICATION

**TSCA Status:** Some components of this product contain ingredients not included in the TSCA Inventory. In accordance with the conditions listed in 40 CFR 720.36 and 721.47, this product must be used only for research and development, pharmaceutical manufacture, or export. It must be used by, or directly under the supervision of, a technically qualified individual. The manufacturer should be consulted prior to using this compound for other applications. Other requirements may apply.

**GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION:** This product has been classified as per the CLP Regulation (EC) 1272/2008 and the Japanese Z7250:2005 Standard.

All Components:

Classification: Not Applicable Signal Word: Not Applicable Precautionary Statement Codes: Not Applicable

**EU/AUSTRALIAN LABELING AND CLASSIFICATION:** This product has been classified as per the European Union Council Directive 67/548/EEC and subsequent Directives and by the Australian National Occupational Health and Safety Commission [NOHSC(1008:2004)].

All Components:

Classification: Not applicable. Risk Phrases: Not applicable.

**Health Hazards:**

LabChip XT DNA Reagent Kit: Chronic ingestion may affect the liver and kidneys.

LabChip XT DNA Chip Kit: The chief hazard in event of overexposure is the potential for irritation of contaminated skin or eyes.

**Flammability Hazards:** The components of this product present no significant fire hazards. In the event of a fire, this product will not contribute significant additional hazards.

**Reactivity Hazards:** This product is normally not reactive. An explosive hazard that may exist in hospital and clinical laboratory plumbing systems due to sodium azide formulated in many *in vitro* diagnostic products. See Section 13 (Disposal Considerations) for more information.

**Environmental Hazards:** The components of this product present negligible hazards to the environment.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

This Material Safety Data sheet describes the LabChip XT DNA Kits. These products consist of two solutions. This Material Safety Data Sheet provides complete information on all the components described in the following tables. Unless otherwise specified, the information in each of the following sections (Sections 3–16) of this document is pertinent to each solution. The components of this product are mixtures (preparations) of the following chemical components:

CHEMICAL NAME	CAS #	EINECS#	ENCS#	% v/v	EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC)
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#### COMPONENT 1: LABCHIP XT DNA REAGENT KIT

Proprietary Polysaccharide		Unlisted	Proprietary	1–3	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.
Dimethyl Sulfoxide	67-68-5	200-664-3	2-1553	2-5	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.
Proprietary Polyacrylamide Polymer				2-5	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.
TRIS Acetate	6850-28-8	229-939-6	Unlisted	2-5	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.
Glycerol	56-81-5	200-289-5	2-242	3-7	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.
Water and other constituents. Each of the other constituents is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).				Balance	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable.

#### COMPONENT LABCHIP XT DNA CHIP KIT

Sodium Azide	26628-22-8	247-852-1	1-482	0.03	EU 67/548 HAZARD CLASSIFICATION: Not Applicable GHS & EU 1272/2008 CLASSIFICATION: Not Applicable
Agarose	9012-36-6	232-731-8	Unlisted	1–5	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable
TRIS Acetate	6850-28-8	229-939-6	Unlisted	4-7	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable
Proprietary Polysaccharide		Unlisted	Proprietary	20-30	EU 67/548 HAZARD CLASSIFICATION: Not Applicable. GHS & EU 1272/2008 CLASSIFICATION: Not Applicable
Water and other constituents. Each of the other constituents is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).				Balance	EU 67/548 HAZARD CLASSIFICATION: Not Applicable GHS & EU 1272/2008 CLASSIFICATION: Not Applicable

See Section 16 for full text of Ingredient Risk Phrases

NOTE: Unless otherwise indicated, the hazard assessments in the following sections are pertinent to all component reagents.

### 4. FIRST-AID MEASURES

Contaminated individuals must seek medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to physician or health professional with the contaminated individual.

**SKIN EXPOSURE:** If this product contaminates the skin, begin decontamination with copious amounts of running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Contaminated clothing must be removed and laundered before re-use. The contaminated individual must seek medical attention if any adverse effect develops after the area is flushed.

**EYE EXPOSURE:** If this product contaminates the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have the contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if adverse effects occur after flushing.

**INHALATION:** If vapors, mists or sprays from this product are inhaled, remove contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers. Seek medical attention if adverse effect continues after removal to fresh air.

**INGESTION:** If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING unless directed by medical personnel. Have contaminated individual rinse mouth with water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to

#### LabChip XT DNA Reagent Kit

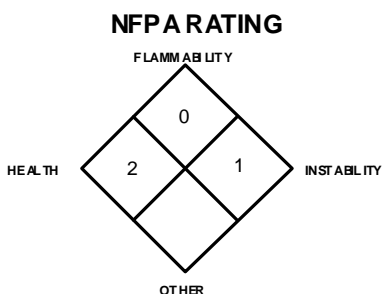
#### LabChip XT DNA Chip Kit

swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

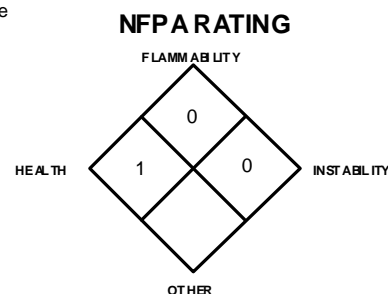
**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing dermatitis, other skin conditions, respiratory conditions, and liver disorders may be aggravated by overexposure to components of this product.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate overexposure.

### 5. FIRE-FIGHTING MEASURES



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate  
3 = Serious 4 = Severe



## 5. FIRE-FIGHTING MEASURES (Continued)

**FLASH POINT:** Not flammable.

**AUTOIGNITION TEMPERATURE:** Not applicable.

**FLAMMABLE LIMITS (in air by volume, %):** Not applicable.

**FIRE EXTINGUISHING MEDIA:** In the event of a fire, use suppression methods for surrounding materials (e.g., water spray, dry chemical, carbon dioxide, foam, any "ABC" class extinguisher).

**UNSUITABLE FIRE EXTINGUISHING MEDIA:** Halon extinguishers should not be used for fires involving this product.

**SPECIAL FIRE AND EXPLOSION HAZARDS:** When involved in a fire, this product's components will decompose and produce irritating vapors and toxic gases (including carbon oxides, dimethyl amine, hydrogen sulfide, cyanides, sodium oxides, and nitrogen oxides).

**ADVICE TO FIRE-FIGHTERS:** Do not use halogenated extinguishing media. Move containers from fire area if it can be done without risk to personnel. Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

## 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** In the event of a spill, clear the area and protect people. Trained personnel using pre-planned procedures should respond to uncontrolled releases. The atmosphere must have levels of components lower than those listed in Section 8, (Exposure Controls and Personal Protective Equipment) if applicable, and have at least 19.5 percent oxygen before personnel can be allowed into the area without Self-Contained Breathing Apparatus (SCBA). Monitor area and confirm levels are below exposure limits given in Section 8 (Exposure Controls-Personal Protection), if applicable, before non-response personnel are allowed into the spill area.

**PROTECTIVE EQUIPMENT:**

**Small Spills:** For incidental spills (e.g., 1 bottle), wear lightweight gloves, a lab coat, and eye protection.

**Large Spills:** For large spills (e.g., a case of bottles), protective apparel should be Level C: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hardhat, and Air-Purifying respirator with organic vapor cartridge. Self-Contained Breathing Apparatus must be selected if release occurs in confined or poorly ventilated areas or in situations in which the level of oxygen is below 19.5%.

**METHODS FOR CLEANUP AND CONTAINMENT:**

**Small Spills:** Absorb spilled liquid with paper towels.

**Large Spills:** Absorb spilled liquid with poly pads or other suitable absorbent materials. Dike or otherwise contain spill and remove with vacuum truck or pump to storage/salvage vessels.

**All Spills:** Decontaminate the area of the spill thoroughly using detergent and water. Place all spill residue in an appropriate container and seal. Do not mix with wastes from other materials. If necessary, discard contaminated response equipment or rinse with soapy water before returning such equipment to service. Dispose of in accordance with applicable international, national, state, and local procedures (see Section 13, Disposal Considerations).

**ENVIRONMENTAL PRECAUTIONS:** Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

## 7. HANDLING and STORAGE

**PRECAUTIONS FOR SAFE HANDLING:** All employees who handle this material should be trained to handle it safely. As with all chemicals, avoid getting this product's components ON YOU or IN YOU. Open containers slowly on a stable surface. Avoid splashing or spraying this product's components. Avoid breathing vapors, mists, or sprays generated by this product's components. Do not eat or drink while handling this product's components. Wash thoroughly after handling this product's components.

**CONDITIONS FOR SAFE STORAGE:** Ensure containers of this product's components are properly labeled. Store vials as directed in the product insert. Store away from incompatible materials. Material should be stored in secondary containers, as appropriate. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Keep vials tightly closed when not in use. Inspect vials containing this product's components for leaks or damage. Read instructions provided with the product prior to use.

**SPECIFIC END USE(S):** This product is for use in laboratory biological research. Follow all industry standards for use.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, as applicable. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures standards.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

**VENTILATION, ENGINEERING, AND OCCUPATIONAL EXPOSURE CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below, if applicable. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information. As with all products that contain chemicals, ensure proper decontamination equipment (e.g., eyewash/safety shower stations) are available near areas where this product is used as necessary.

**EXPOSURE LIMITS/GUIDELINES/CONTROL PARAMETERS:**

**NOTE:** For components not specifically listed, those components are primarily water and trace constituents, no exposure limits are applicable.

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	IDLH mg/m <sup>3</sup>	mg/m <sup>3</sup>
Dimethyl Sulfoxide	67-68-5	NE	NE	NE	NE	NE	NE	250	DFG MAK: Danger of Cutaneous absorption

### COMPONENT 1: LABCHIP XT DNA REAGENT KIT

Dimethyl Sulfoxide	67-68-5	NE	NE	NE	NE	NE	NE	250	DFG MAK: Danger of Cutaneous absorption
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## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

### EXPOSURE LIMITS/GUIDELINES/CONTROL PARAMETERS (continued):

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELS		NIOSH	OTHER
		TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	IDLH mg/m <sup>3</sup>	mg/m <sup>3</sup>

#### COMPONENT 1: LABCHIP XT DNA REAGENT KIT (continued)

Glycerol		10 (mist)	NE	15 (total dust) 5 (resp. frac.) 10 (total dust) 5 (resp. frac.) [vacated 1989 PEL]	NE	NE	NE	NE	NE	DFG MAKs: TWA = 50 (Inhalable fraction) PEAK = 2•MAK 15 min, average value, 1-hr interval, 4 per shift Pregnancy Risk Group C
Proprietary Polysaccharide Exposure limits are for cellulose CAS# 9004-34-6		10	NE	15 (total dust) 5 (resp. frac.)	NE	10 (total dust) 5 (resp. frac.)	NE	NE	NE	NE
Poly(N,N-dimethylacrylamide)		NE	NE	NE	NE	NE	NE	NE	NE	NE
TRIS Acetate	6850-28-8	NE	NE	NE	NE	NE	NE	NE	NE	NE

#### COMPONENT 2: LABCHIP XT DAN CHIP KIT

Agarose	9012-36-6	NE	NE	NE	NE	NE	NE	NE	NE	NE
Proprietary Polysaccharide Exposure limits are for cellulose CAS# 9004-34-6		10	NE	15 (total dust) 5 (resp. frac.)	NE	10 (total dust) 5 (resp. frac.)	NE	NE	NE	NE
Sodium Azide	26628-22-8	NE	0.29 (ceiling) [as NaN <sub>3</sub> ]	0.3 (skin) [as NaN <sub>3</sub> ] (vacated 1989 PEL)	NE	NE	0.3 (skin) [as NaN <sub>3</sub> ]	NE	NE	DFG MAKs: TWA = 0.2 (inhalable fraction) PEAK = 1•MAK 15 min, average value, 1-hr interval, 4 per shift Pregnancy Risk Group D Carcinogen: TLV-A4
TRIS Acetate	6850-28-8	NE	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established.

See Section 16 for Definitions of Terms Used.

**INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS:** Currently the following international exposure limits are in place for the some constituents of this product. Values given may not be the most current; individual country lists should be consulted to determine most current values available.

#### DIMETHYL SULFOXIDE:

Denmark: TWA = 100 ppm (tentative), OCT 2002  
Finland: TWA = 50 ppm, Skin, SEP 2009  
The Netherlands: MAC-TGG = 150 mg/m<sup>3</sup>, Skin, 2003  
Russia: STEL = 20 mg/m<sup>3</sup>, JUN 2003  
Sweden: TWA = 50 ppm (150 mg/m<sup>3</sup>); STEL = 150 ppm  
(500 mg/m<sup>3</sup>), Skin, JUN 2005  
Switzerland: MAK-W = 50 ppm (160 mg/m<sup>3</sup>), Skin, DEC  
2006  
**GLYCEROL:**  
Belgium: TWA = 10 mg/m<sup>3</sup>, MAR 2002  
Finland: TWA = 20 mg/m<sup>3</sup>, SEP 2009  
France: VME = 10 mg/m<sup>3</sup>, FEB 2006  
Korea: TWA = 10 mg/m<sup>3</sup> (mist), 2006  
Mexico: TWA = 10 mg/m<sup>3</sup> (inhalable), 2004  
The Netherlands: MAC-TGG = 10 mg/m<sup>3</sup>, 2003

#### GLYCEROL (continued):

New Zealand: TWA = 10 mg/m<sup>3</sup> (mist), JAN 2002  
Switzerland: MAK-W = 50 mg/m<sup>3</sup>, KZG-W = 100 mg/m<sup>3</sup>,  
DEC 2006  
United Kingdom: TWA = 10 mg/m<sup>3</sup>, 2005  
In Argentina, Bulgaria, Colombia, Jordan, Singapore,  
Vietnam check ACGIH TLV  
**SODIUM AZIDE:**  
Australia: CL = 0.11 ppm (0.3 mg/m<sup>3</sup>), JUL 2008  
Belgium: TWA = 0.1 mg/m<sup>3</sup>, STEL = 0.3 mg/m<sup>3</sup>, Skin,  
MAR 2002  
Denmark: TWA = 0.1 mg/m<sup>3</sup>, OCT 2002  
EC: TWA = 0.1 mg/m<sup>3</sup>; STEL = 0.3 mg/m<sup>3</sup> (skin), FEB  
2006  
Finland: TWA = 0.1 mg/m<sup>3</sup>, STEL = 0.3 mg/m<sup>3</sup>, Skin,  
SEP 2009

#### SODIUM AZIDE (continued):

France: VME = 0.1 mg/m<sup>3</sup>, VLE 0.3 mg/m<sup>3</sup>, Skin, FEB  
2006  
Germany: MAK = 0.2 mg/m<sup>3</sup> (inhalable), 2005  
Hungary: TWA = 0.1 mg/m<sup>3</sup>, STEL = 0.3 mg/m<sup>3</sup>, SEP  
2000  
Korea: CL = 0.1 ppm (0.3 mg/m<sup>3</sup>), 2006  
The Netherlands: MAC-TGG = OEL-NEW ZEALAND:  
CL 0.11 ppm (0.29 mg/m<sup>3</sup>), JAN 2002  
Sweden: TWA = 0.1 mg/m<sup>3</sup>; STEL = 0.3 mg/m<sup>3</sup>, Skin,  
JUN 2005  
Switzerland: MAK-W = 0.2 mg/m<sup>3</sup>, KZG-W = 0.4e mg/m<sup>3</sup>,  
DEC 2006  
United Kingdom: TWA = 0.1 mg/m<sup>3</sup>; STEL = 0.3 mg/m<sup>3</sup>  
(skin), 2005  
In Argentina, Bulgaria, Colombia, Jordan, Singapore,  
Vietnam check ACGIH TLV

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), equivalent standards of Canada (including CSA Standard Z94.4-02 and CSA Standard Z94.3-07), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

**RESPIRATORY PROTECTION:** Respiratory protection is not generally needed when using this product. Maintain airborne contaminant concentrations below limits listed in this section. If mists, sprays or vapors from this product are created during use, use appropriate respiratory protection. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-02, European Standard EN 529:2005, EU member state standards, Australian Standard 1716-Respiratory Protective Devices and Australian Standard 1715-Selection, Use, and Maintenance of Respiratory Protective Devices, or Japanese Standard JIS T 8150:2006. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998).

**EYE PROTECTION:** Depending on the use of this product, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian CSA Standard Z94.3-07, European Standard CR 13464:1999, Australian Standard 1337-Eye Protection for Industrial Applications and Australian Standard 1336-Recommended Practices for Eye Protection in the Industrial Environment, or Japanese Standard JIS T 8147:2003.

**HAND PROTECTION:** Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. Use triple gloves for spill response. If necessary, refer to U.S. OSHA 29 CFR 1910.138, Australian Standard 2161-Industrial Safety Gloves and Mittens, European Standard CEN/TR 15419:2006, or Japanese Standard JIS T 8116:2005.

**BODY PROTECTION:** Use body protection appropriate for task, such as a lab coat. If necessary, refer to OSHA Technical Manual (Section VII: Personal Protective Equipment), European Standard CEN/TR 15419:2006, Australian Standard 3765-Clothing for Protection Against Hazardous Chemicals, or Japanese Standard JIS T 8030:2005. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136, Canadian CSA Standard Z195.1-02, *Guideline on Selection, Care, and Use of Protective Footwear*, or European Standard CEN ISO/TR 18690:2006.

## 9. PHYSICAL and CHEMICAL PROPERTIES

### APPEARANCE AND COLOR:

LabChip XT DNA Reagent Kit: Clear, red liquid with a mildly garlic-like odor.

LabChip XT DNA Chip Kit: Clear, odorless, colorless liquid.

### HOW TO DETECT THIS SUBSTANCE:

LabChip XT DNA Reagent Kit: The odor may act as a warning property associated with this component.

LabChip XT DNA Chip Kit: There are no unusual warning properties associated with this component.

pH: Not established.

BOILING POINT: Not established.

FLASH POINT: Not flammable.

EXPLOSIVE PROPERTIES: Not explosive

VAPOR PRESSURE: Not established.

SOLUBILITY:

LabChip XT DNA Reagent Kit: Miscible in organic solvents.

LabChip XT DNA Chip Kit: Miscible in methanol and ethanol.

VISCOSITY: Not established.

EVAPORATION RATE: Similar to water.

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

FREEZING/MELTING POINT: Not established.

FLAMMABILITY: Not flammable.

OXIDIZING PROPERTIES: Not an oxidizer.

SPECIFIC GRAVITY: Not established.

SOLUBILITY IN WATER: Completely soluble.

RELATIVE VAPOR DENSITY (air = 1): Not established.

ODOR THRESHOLD: Not established.

## 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

### DECOMPOSITION PRODUCTS:

Combustion: Carbon oxides, dimethyl amine, hydrogen sulfide, cyanides, sodium oxides, and nitrogen oxides.

Hydrolysis: None known.

### MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:

LabChip XT DNA Reagent Kit: Strong oxidizers, acetyl chloride, cyanuric chloride, acid chlorides, phosphorus halides, strong acids, strong reducers, substances that are incompatible with water.

LabChip XT DNA Chip Kit: Strong oxidizers, strong acids, some metals, substances that are incompatible with water.

POSSIBILITY OF HAZARDOUS REACTION/POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Any conditions that are incompatible with water, mixing this product with incompatible chemicals.

## 11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: No adverse health effects should occur from routine, occupational use of this product's components in the manner specified by the manufacturer's instructions. The potential health effects of this product's components, via route of exposure, are described on the following pages.

### INHALATION:

LabChip XT DNA Reagent Kit: Inhalation of vapors, mists, or sprays of this component may irritate the nose, throat, and lungs. Symptoms may include nausea, headache, and vomiting.

LabChip XT DNA Chip Kit: Inhalation of vapors, mists, or sprays of this component may slightly irritate the nose, throat, and lungs. Symptoms are generally alleviated upon breathing fresh air.

### CONTACT WITH SKIN or EYES:

LabChip XT DNA Reagent Kit: Depending on the duration of overexposure, skin and eye contact may irritate contaminated tissue. Symptoms of skin overexposure may include redness and discomfort. Symptoms of eye overexposure may include redness, tearing, and pain.

LabChip XT DNA Chip Kit: Contact with the skin or eyes may cause mild irritation, which is alleviated upon rinsing.

### SKIN ABSORPTION:

LabChip XT DNA Reagent Kit: The Dimethyl Sulfoxide constituent of this component can be absorbed through the skin and may carry dissolved chemicals with it into the body. Symptoms of overexposure for a prolonged period of time and a large area of skin may include redness, burning, itching, scaling, vision disturbance, photophobia, headache, and diarrhea.

LabChip XT DNA Chip Kit: No constituents of this component are known to be absorbed via intact skin.

INGESTION: Ingestion is not anticipated to be a significant route of exposure for the product's solutions. If ingested, symptoms of such overexposure are described below.

LabChip XT DNA Reagent Kit: If this component is swallowed, it may cause gastric distress. Large doses may cause nausea, vomiting, chills, cramps, and lethargy.

LabChip XT DNA Chip Kit: If this component is swallowed they may cause gastric distress. Large doses may cause nausea, vomiting, and diarrhea.

INJECTION: Accidental injection of this product's components, via laceration or puncture by a contaminated object, may cause local reddening, tissue swelling, and discomfort in addition to the wound.

### HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.

#### Acute:

LabChip XT DNA Reagent Kit: Large oral doses may cause nausea, vomiting, chills, cramps, and lethargy.

LabChip XT DNA Chip Kit: Beyond mild irritation of the skin or eyes, contact with this component does not usually cause acute health effects.

#### Chronic:

LabChip XT DNA Reagent Kit: The Dimethyl Sulfoxide component of this product can cause anaphylactic reaction by unspecified exposure routes; symptoms may include rash, abdominal cramps, nausea, chills, and chest pain. Chronic ingestion of the Dimethyl Sulfoxide constituent of these components may affect the liver and kidneys.

LabChip XT DNA Chip Kit: This component is not known to cause any significant chronic health effects.

### TARGET ORGANS:

#### Acute:

LabChip XT DNA Reagent Kit: Eyes, gastrointestinal tract.

LabChip XT DNA Chip Kit: Eyes, gastrointestinal tract.

#### Chronic:

LabChip XT DNA Reagent Kit: Liver, kidneys, skin.

LabChip XT DNA Chip Kit: None known.

## 11. TOXICOLOGICAL INFORMATION (Continued)

**TOXICITY DATA:** The following information is available for the constituents in constituents in this product present in greater than

percent concentration.

### DIMETHYL SULFOXIDE:

TDLo (intravenous, man) = 606 mg/kg; Gastrointestinal: nausea or vomiting; Liver: jaundice, other or unclassified

LD<sub>50</sub> (oral, rat) = 14500 mg/kg; Eye: hemorrhage, conjunctive irritation

LD<sub>50</sub> (oral, mouse) = 7920 mg/kg

LD<sub>50</sub> (oral, dog) > 10 g/kg

LD<sub>50</sub> (oral, chicken) = 12 g/kg

LD<sub>50</sub> (intraperitoneal, rat) = 8200 mg/kg

LD<sub>50</sub> (intraperitoneal, mouse) = 2500 mg/kg

LD<sub>50</sub> (subcutaneous, rat) = 12 g/kg; Behavioral: changes in motor activity (specific assay); Lungs, Thorax, or Respiration: dyspnea

LD<sub>50</sub> (subcutaneous, mouse) = 14 g/kg; Behavioral: changes in motor activity (specific assay); Lungs, Thorax, or Respiration: other changes; Kidney, Ureter, Bladder: hematuria

LD<sub>50</sub> (intravenous, rat) = 5360 mg/kg; Behavioral: tremor; muscle weakness; Lungs, Thorax, or Respiration: dyspnea

LD<sub>50</sub> (intravenous, mouse) = 3100 mg/kg; Eye: hemorrhage; conjunctive irritation

LD<sub>50</sub> (skin, mouse) = 50 g/kg

LD<sub>50</sub> (skin, rat) = 40 g/kg

TDLo (oral, rat) = 1070 g/kg/13 weeks/intermittent; Blood changes; weight loss or decreased weight gain

TDLo (oral, rat) = 59 g/kg/81 weeks/intermittent; Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Skin and Appendages: tumors

TDLo (oral, mouse) = 65340 mg/kg/66 weeks/intermittent; Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Blood: leukemia; Skin and Appendages: tumors

TDLo (oral, mouse) = 16 mg/kg/female 5–9 days after conception; Reproductive: Fertility: pre-implantation mortality; Effects on Embryo or Fetus: fetotoxicity; Specific Developmental Abnormalities: musculoskeletal system

TDLo (oral, hamster) = 11 g/kg/female 7 days after conception; Reproductive: Specific Developmental Abnormalities: Central Nervous System, musculoskeletal system

TDLo (oral, monkey) = 4864 g/kg/78 weeks/intermittent

### DIMETHYL SULFOXIDE (continued):

TDLo (intraperitoneal, rat) = 56 g/kg/female 6–12 days after conception; Reproductive: Fertility: abortion

TDLo (intraperitoneal, rat) = 192 g/kg/4 weeks/intermittent; Blood: normocytic anemia; weight loss or decreased weight gain

TDLo (intraperitoneal, hamster) = 5500 mg/kg/female 8 days after conception; Reproductive: Specific Developmental Abnormalities: musculoskeletal system, Central Nervous System, craniofacial

TDLo (intraperitoneal, mouse) = 210 g/kg/female 6-12 days after conception; Reproductive: Specific Developmental Abnormalities: Central Nervous System, musculoskeletal system

TDLo (subcutaneous, rat) = 220 g/kg/82 weeks/intermittent; Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Skin and Appendages: tumors

TDLo (ocular, rabbit) = 250 µg/kg/30 days/intermittent; Eye: effect, not otherwise specified

TDLo (skin, pig) = 4698 mL/kg/58 weeks/intermittent; Eye: changes in refraction; Behavioral: fluid intake

Mutation in Microorganisms (*Salmonella typhimurium*) = 25 pph

Mutation in Microorganisms (*Escherichia coli*) = 551 g/L

Mutation Test Systems (*Salmonella typhimurium*) = 70 g/L

Open Irritation Test (skin, rabbit) = 10 mg/24 hours

Standard Draize Test (skin, rabbit) = 500 mg/24 hours; mild

Standard Draize Test (eye, rabbit) = 100 mg

Standard Draize Test (eye, rabbit) = 500 mg/24 hours; mild

**GLYCEROL:**  
Skin Irritancy (rabbit) = 500 mg/24 hours; mild

Eye Irritancy (rabbit) = 126 mg; mild

Eye Irritancy (rabbit) = 500 mg/24 hours; mild LD<sub>50</sub> (oral, rat) = 12600 mg/kg; general anesthetic, muscle weakness, Liver: other changes

LC<sub>50</sub> (inhalation, rat) > 570 mg/m<sup>3</sup>/1 hour

LD<sub>50</sub> (oral, mouse) = 4090 mg/kg

LD<sub>50</sub> (oral, rabbit) = 27 g/kg

LD<sub>50</sub> (oral, guinea pig) = 7750 mg/kg

LD<sub>50</sub> (skin, rabbit) > 10 g/kg

### GLYCEROL (continued):

LD<sub>50</sub> (subcutaneous, rat) = 100 mg/kg

LD<sub>50</sub> (subcutaneous, mouse) = 91 mg/kg

LD<sub>50</sub> (intravenous, rat) = 5566 mg/kg

LD<sub>50</sub> (intravenous, mouse) = 4250 mg/kg

LD<sub>50</sub> (intravenous, rabbit) = 53 g/kg

LD<sub>50</sub> (intraperitoneal, mouse) = 8700 mg/kg

LD<sub>50</sub> (intraperitoneal, rat) = 4420 mg/kg; toxic psychosis; Cardiac; other changes; Kidney, Urethra, Bladder: other changes

TDLo (oral, rat) = 16800 mg/kg/28 days/continuous; Endocrine: changes in adrenal weight

TDLo (oral, rat) = 100 mg/kg/male 1 day pre-mating; Reproductive: Fertility: post-implantation mortality

TDLo (oral, rat) = 96 g/kg/30 days/intermittent; Blood: changes in leukocyte (WBC) count, changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase

TDLo (intratesticular, rat) = 280 mg/kg/male 2 days pre-mating; Reproductive: Paternal Effects: spermatogenesis, testes, epididymis, sperm duct

TDLo (intratesticular, rat) = 1600 mg/kg/male 1 day pre-mating; Reproductive: male fertility index

TDLo (intratesticular, rat) = 862 mg/kg/male 1 day pre-mating; Reproductive: Paternal Effects: spermatogenesis

TDLo (intratesticular, monkey) = 119 mg/kg/male 1 day pre-mating; Reproductive: Paternal Effects: spermatogenesis, testes, epididymis, sperm duct

TDLo (oral, mouse) = 560 g/kg/8 weeks/continuous; Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi

DNA Inhibition (human, lymphocyte) = 200 mmol/L

Cytogenetic Analysis (oral, rat) = 1 g/kg

**PROPRIETARY POLYSACCHARIDE:**

LDLo (Intravenous-Woman) 5100 mg/kg/6 days-intermittent; Brain and Coverings: increased intracranial pressure; Behavioral: somnolence (general depressed activity); Vascular: change in plasma or blood volume

TDLo (Intraperitoneal-Mouse) 500 mg/kg; female 3-7 day(s) after conception; Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

**CARCINOGENIC POTENTIAL:** The components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

**SODIUM AZIDE:** ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen)

The remaining constituents in the components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore are neither considered to be nor suspected to be cancer causing agents by these agencies.

### IRRITANCY OF PRODUCT:

**LabChip XT DNA Reagent Kit:** Depending on the duration of overexposure, skin and eye contact can irritate contaminated tissue.

**LabChip XT DNA Chip Kit:** Contact with the skin or eyes may cause mild irritation, which is alleviated upon rinsing.

### SENSITIZATION TO THE PRODUCT:

**LabChip XT DNA Reagent Kit:** The Dimethyl Sulfoxide component of this product can cause anaphylactic reaction by unspecified exposure routes; symptoms may include rash, abdominal cramps, nausea, chills, and chest pain.

**LabChip XT DNA Chip Kit:** All other components of this product are not known to cause skin or respiratory sensitization.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

**Mutagenicity:** The constituents in the components in this product are not reported to produce mutagenic effects in humans. Human mutation data are available for the Dimethyl Sulfoxide and Glycerol constituents in this product's components; these data were obtained during clinical studies on specific human tissues exposed to high doses of these compounds.

**Embryotoxicity:** The constituents in the components in this product are not reported to cause human embryotoxic effects.

**Teratogenicity:** The constituents in the components in this product are reported to cause teratogenic effects in humans. Clinical studies on test animals exposed to relatively high doses of the Dimethyl Sulfoxide constituent in this product's components, indicate teratogenic effects.

**Reproductive Toxicity:** The constituents in the components in this product are not reported to cause adverse reproductive effects in humans. Clinical studies on test animals exposed to relatively high doses of the Dimethyl Sulfoxide and Glycerol constituents in this product's components indicate adverse reproductive effects.

*A **mutagen** is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An **embryotoxin** is a chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance that interferes in any way with the reproductive process.*

**BIOLOGICAL EXPOSURE INDICES:** Currently, there are no Biological Exposure Indices (BEIs) determined for the constituents in this product's components.

## 12. ECOLOGICAL INFORMATION

**MOBILITY:** This product has not been tested for mobility in soil. Additional environmental data for components are available as follows:

### DIMETHYL SULFOXIDE:

The Koc of Dimethyl Sulfoxide is estimated as 4, using a log Kow of -1.35 and a regression-derived equation. According to a classification scheme, this estimated Koc value suggests that Dimethyl Sulfoxide is expected to have very high mobility in soil.

## 12. ECOLOGICAL INFORMATION (Continued)

### MOBILITY (continued):

#### **GLYCEROL:**

Based on an experimental log octanol/water partition coefficient of -1.76 and its water solubility, 1,220,000 mg/L at 5°C, soil adsorption coefficients for Glycerin can be estimated at 3 and 2, respectively, using regression-derived equations. The magnitude of these values indicate that glycerin will display very high mobility in soil.

**PERSISTENCE AND BIODEGRADABILITY:** This product has not been tested for persistence or biodegradability. It is expected that the constituents of this product will slowly degrade in the environment and form a variety of organic and inorganic materials; however, no specific information is known. Additional environmental data for components are available as follows:

#### **DIMETHYL SULFOXIDE:**

If released to air, a vapor pressure of  $6.1 \times 10^{-1}$  mm Hg at 25°C indicates Dimethyl Sulfoxide will exist solely as a vapor phase in the atmosphere. Vapor-phase dimethyl sulfoxide will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 6.2-6.6 hours. Dimethyl Sulfoxide does not absorb light at wavelengths >290 nm and therefore is not expected to be susceptible to direct photolysis by sunlight. If released to soil, Dimethyl Sulfoxide is expected to have very high mobility based upon an estimated Koc of 4. Volatilization from water and moist soil surfaces is not expected to be an important fate process based upon a Henry's Law constant of  $1.5 \times 10^{-9}$  atm-cu m/mole. Dimethyl Sulfoxide is expected to slowly volatilize from dry soil surfaces based upon its vapor pressure. A 3% theoretical BOD after 2 weeks in activated sludge indicates that biodegradation is not expected to be an important environmental fate process. If released into water, dimethyl sulfoxide is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. A low experimental BCF of <1 suggests that bioconcentration in aquatic organisms is low. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions.

#### **GLYCEROL:**

If released to soil, glycerin is expected to undergo rapid biodegradation under aerobic conditions. It is expected to display very high mobility in soil and it is not expected to significantly volatilize to the atmosphere. If released to water, glycerin is expected to rapidly degrade under aerobic conditions. Biodegradation in seawater and under anaerobic conditions is also expected. Glycerin is not expected to bioconcentrate in fish and aquatic organisms nor is it expected to adsorb to sediment and suspended organic matter. Volatilization to the atmosphere is expected to be slower than for water itself. If released to the atmosphere, Glycerin may undergo a gas-phase oxidation with photochemically produced hydroxyl radicals with a half-life of 33 hrs. It may also undergo atmospheric removal by wet deposition processes.

**BIO-ACCUMULATION POTENTIAL:** This product has not been tested for bio-accumulation potential. Additional data for components are available as follows:

#### **DIMETHYL SULFOXIDE:**

A BCF of < 1 was observed for Dimethyl Sulfoxide, using orange-red killifish (*Oryzias latipes*) which were exposed over an 8-week period. According to a classification scheme, this BCF suggests that bioconcentration in aquatic organisms is low.

#### **GLYCEROL:**

Based on an experimental log octanol/water partition coefficient of -1.76 and its water solubility, 1,220,000 mg/L at 5°C, bioconcentration factors for Glycerin can be estimated at 3 and 0.2, respectively, using regression-derived equations. The magnitude of these values indicate that bioconcentration of Glycerin in fish and aquatic organisms will not be significant. Log  $K_{ow}$  = -1.76.

**ECOTOXICITY:** This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. Additional aquatic toxicity data are available as follows:

#### **DIMETHYL SULFOXIDE:**

TLm (bluegill) 48 hours = 33,500 ppm; fresh water

LC<sub>50</sub> (*Salvelinus fontinalis* Brook trout) 24 hours = 54 g/L; static; 95% CI (50.9-58.3)

LC<sub>50</sub> (*Salvelinus namaycush* Lake trout) 24 hours = 47.8 g/L; static; 95% CI (42.3-54.0)

LC<sub>50</sub> (*Oncorhynchus mykiss* Rainbow trout) 24 hours = 53.0 g/L; static; 95% CI (48.6-57.8)

LC<sub>50</sub> (*Cyprinus carpio* Carp) 24 hours = 44.0 g/L; static; 95% CI (48.6-57.8)

LC<sub>50</sub> (*Ictalurus melas* Black bullhead) 24 hours = 42.5 g/L; static; 95% CI (37.9-47.6)

LC<sub>50</sub> (*Ictalurus punctatus* Channel catfish) 24 hours = 39.0 g/L; static; 95% CI (36.1-42.1)

LC<sub>50</sub> (*Lepomis cyanellus* Green sunfish) 24 hours = 65.0 g/L; static; 95% CI (61.3-68.9)

LC<sub>50</sub> (*Lepomis macrochirus* Bluegill) 24 hours = 72.0 g/L; static; 95% CI (63.2-82.1)

#### **DIMETHYL SULFOXIDE (continued):**

LC<sub>50</sub> (*Perca flavescens* Yellow perch) 24 hours = 65.0 g/L; static; 95% CI (61.3-68.9)

LC<sub>50</sub> (*Salvelinus fontinalis* Brook trout) 24 hours = 54.5 g/L; static; 95% CI (50.9-58.3)

LC<sub>50</sub> (*Salvelinus fontinalis* Brook trout) 48 hours = 46.0 g/L; static; 95% CI (42.2-50.1)

LC<sub>50</sub> (*Pimephales promelas* Fathead minnow) 96 hours = 34 g/L; static

LC<sub>50</sub> (*Lepomis macrochirus* Bluegill) 96 hours = > 40 g/L; static

LC<sub>50</sub> (*Salvelinus fontinalis* Brook trout) 96 hours = 36.5 g/L; static; 95% CI (33.2-40.2)

EC<sub>50</sub> (*Daphnia magna* water flea) 24 hours = 7000 mg/L; toxic effect: inhibition of mobility

#### **GLYCEROL:**

EC<sub>0</sub> (*Pseudomonas putida* bacteria) 16 hours = >10,000 mg/L

EC<sub>0</sub> (*Microcystis aeruginosa* algae) 8 days = 2,900 mg/L

EC<sub>0</sub> (*Scenedesmus quadricauda* green algae) 7 days = > 10,000 mg/L

EC<sub>0</sub> (*Entosiphon sulcatum* protozoa) 72 hours = 3,200 mg/L

EC<sub>0</sub> (*Uronema parduizi* Chatton-Lwoff protozoa) = > 10,000 mg/L

LC<sub>50</sub> (goldfish) 24 hours = > 5,000 mg/L

**RESULTS OF PBT AND vPvB ASSESSMENT:** No data available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

**OTHER ADVERSE EFFECTS:** This product does not contain any constituents with known ozone depletion potential.

**ENVIRONMENTAL EXPOSURE CONTROLS:** Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

## 13. DISPOSAL CONSIDERATIONS

**WASTE TREATMENT/DISPOSAL METHODS:** Do NOT dispose of any solution of this product by pouring down the drain. It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

**SPECIAL INSTRUCTIONS:** The National Institute for Occupational Safety and Health (NIOSH) issued an alert about an explosive hazard that may exist in hospital and clinical laboratory plumbing systems due to sodium azide formulated in many *in vitro* diagnostic products. NIOSH advised that accumulation of lead and copper azides in plumbing systems can be retarded by thoroughly flushing any drain known to receive azides with copious amounts of water several times a day. See [http://www/cdc.gov/niosh/78127\\_13.html](http://www/cdc.gov/niosh/78127_13.html) for more information. Observe all federal, state, and local laws and regulations.

**DISPOSAL CONTAINERS:** Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

**PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING:** Wear proper protective equipment when handling waste materials.

**U.S. EPA WASTE NUMBER:** Not applicable.

**EWC WASTE CODE:** Wastes from research, diagnoses, treatment, or preventions of disease involving animals: chemicals other than containing dangerous substances: 18-02-06

## 14. TRANSPORTATION INFORMATION

This product is not classified under any jurisdiction as Dangerous Goods and has no UN Number, Hazard Class or Packing Group or Special Precautions for User.

## 14. TRANSPORTATION INFORMATION (Continued)

**U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS:** This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

**TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:** This product is NOT classified as Dangerous Goods, per regulations of Transport Canada.

**INTERNATIONAL AIR TRANSPORT ASSOCIATION/ICAO (IATA/ICAO):** This product is NOT classified as dangerous goods, per rules of IATA.

**INTERNATIONAL MARITIME ORGANIZATION (IMO):** This product is NOT classified as dangerous goods, per the rules of IMO.

**EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):** This product is NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

**AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL:** This product is NOT dangerous goods, per regulations of the Office of Road Safety.

**ENVIRONMENTAL HAZARDS:** This product is neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) nor a marine pollutant according to the IMDG Code.

**TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:** Not applicable.

## 15. REGULATORY INFORMATION

### ADDITIONAL U.S. REGULATIONS:

**U.S. SARA REPORTING REQUIREMENTS:** The constituents in components of this product are not subject to Sections 302, 304, and 313 reporting requirements under the Superfund Amendment and Reauthorization Act.

**U.S. SARA THRESHOLD PLANNING QUANTITY:** There are no specific Threshold Planning Quantities for the constituents in components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) therefore applies, per 40 CFR 370.20.

**U.S. CERCLA REPORTABLE QUANTITY (RQ):** Not applicable.

**U.S. TSCA INVENTORY STATUS:** Some solutions of this product contain ingredients not included in the TSCA Inventory. In accordance with the conditions listed in 40 CFR 720.36 and 721.47, this product must be used only for research and development, pharmaceutical manufacture, or export. It must be used by, or directly under the supervision of, a technically qualified individual. The manufacturer should be consulted prior to using this product for other applications. Other requirements may apply.

**OTHER U.S. FEDERAL REGULATIONS:** Not applicable.

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):** No component of this product is on the California Proposition 65 lists.

### ADDITIONAL CANADIAN REGULATIONS:

**CANADIAN DSL/NDSL INVENTORY STATUS:** Some components of this product contain ingredients not included in the DSL/NDSL Inventory. This product must be used only for research and development purposes. The manufacturer should be consulted prior to using this product for other applications. Other requirements may apply.

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITY SUBSTANCES LISTS:** The constituents in components of this product are not on the CEPA Priority Substances Lists.

**CANADIAN WHMIS CLASSIFICATION AND SYMBOLS:** Not applicable.

### ADDITIONAL EUROPEAN UNION REGULATIONS:

**SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE PRODUCT:** Currently, there is no specific legislation pertaining to this product.

**CHEMICAL SAFETY ASSESSMENT:** No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

### ADDITIONAL AUSTRALIAN REGULATIONS:

**AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS:** The constituents in components of this product are on the AICS as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

**LIST OF DESIGNATED SUBSTANCES:** Not applicable.

**STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS:** Not applicable.

### ADDITIONAL JAPANESE REGULATIONS:

**JAPANESE ENCS:** The constituents in components of this product are on the ENCS Inventory as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

**POISONOUS AND DELETERIOUS SUBSTANCES CONTROL LAW:** No constituent in the components of this product is a listed Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

**JAPANESE MINISTRY OF ECONOMY, TRADE, AND INDUSTRY (METI) STATUS:** There is Biodegradation and Bioconcentration information from tests conducted according to the Chemical Substances Control Law on the following components: Glycerol.

## 16. OTHER INFORMATION

**ANSI LABELING (Z129.1; Provided to Summarize Occupational Hazard Information):**

**LabChip XT DNA Reagent Kit: CAUTION! MAY CAUSE SENSITIZATION BY UNSPECIFIED ROUTE OF EXPOSURE. MAY CAUSE SKIN, EYE, AND RESPIRATORY TRACT IRRITATION. MAY CAUSE DISCOMFORT IF SWALLOWED.** Do not taste or swallow. Avoid skin or eye contact. Avoid breathing mists or sprays. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves and goggles. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention if necessary. **IN CASE OF FIRE:** Use water fog, dry chemical, CO<sub>2</sub>, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with polypads and place in suitable container. Consult Material Safety Data Sheet for additional information.

**LabChip XT DNA Chip Kit: CAUTION! MAY CAUSE SKIN, EYE, AND RESPIRATORY TRACT IRRITATION. MAY CAUSE DISCOMFORT IF SWALLOWED.** Do not taste or swallow. Avoid skin or eye contact. Avoid prolonged or repeated skin contact. Avoid breathing mists or sprays. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves and goggles. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention if necessary. **IN CASE OF FIRE:** Use water fog, dry chemical, CO<sub>2</sub>, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with polypads and place in suitable container. Consult Material Safety Data Sheet for additional information.

**16. OTHER INFORMATION (Continued)**

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: This product has been classified as per the CLP Regulation (EC) 1272/2008 and the Japanese Z7250:2005 Standard.

All Components:

Classification: Not Applicable    Signal Word: Not Applicable    Precautionary Statement Codes: Not Applicable

EU/AUSTRALIAN LABELING AND CLASSIFICATION: This product has been classified as per the European Union Council Directive 67/548/EEC and subsequent Directives and by the Australian National Occupational Health and Safety Commission [NOHSC(1008:2004)].

All Components:

Classification: Not applicable.    Risk Phrases: Not applicable.

LABELING/CLASSIFICATION FOR CONSTITUENTS:

**Sodium Azide:**

Hazard Classification: [T+]: [N]: Dangerous for the Environment    Risk Phrases: [R: 28]: Very toxic if swallowed. [R: 32]: Contact with acids liberates very toxic gas. [R: 50/53]: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases: [S: 1/2]: Keep locked up and out of the reach of children. [S: 28]: After contact with skin, wash immediately with plenty of water. [S: 45]: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). [S: 60]: This material and its container must be disposed of as hazardous waste. [S: 61]: Avoid release to the environment. Refer to special instructions/safety data sheet.

Annex II Hazard Symbols: F+, N

**For All Other Constituents:**

An official classification for these substances has not been published in Commission Directives 93/72EEC, 94/69/EC, 96/56/EC, or 98/98/EC.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

**PREPARED BY:**

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