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**1. IDENTIFICATION**

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|----------------------------------------------------------------|-------------------------------------------------------------|
| <b>Product Name</b>                                            | 5X Lysis Buffer                                             |
| <b>Recommended use of the chemical and restrictions on use</b> |                                                             |
| <b>Identified Uses</b>                                         | For Research and Development Use Only                       |
| <b>Product Numbers</b>                                         | 190202, 190274                                              |
| <b>Company Identification</b>                                  | Covaris, Inc.<br>14 Gill Street, Unit H<br>Woburn, MA 01801 |
| <b>Customer Information Number</b>                             | (781) 932-3959                                              |
| <b>Emergency Telephone Number</b>                              | (800) 424-9300 (for emergencies only)                       |
| <b>Chemtrec Number</b>                                         | (800) 424-9300                                              |
| <b>Issue Date</b>                                              | October 28, 2013                                            |
| <b>Supersedes Date</b>                                         |                                                             |

*Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)*

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**2. HAZARD IDENTIFICATION**

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**Hazard Classification**  
Serious eye damage/eye irritation - Category 2B

**Label Elements**  
Hazard Symbols



Signal Word: Warning

**Hazard Statements**  
Causes eye irritation.

**Precautionary Statements**

**Prevention**  
Wash hands thoroughly after handling.

**Response**  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists, get medical advice/attention.

**Storage**  
None

**Disposal**  
Dispose of contents/container in accordance with local regulation.

**Other Hazards**  
None

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**2. HAZARD IDENTIFICATION**

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**Specific Concentration Limits**

The values listed below represent the percentages of ingredients of unknown toxicity.

|                           |          |
|---------------------------|----------|
| Acute oral toxicity       | 0 - 10%  |
| Acute dermal toxicity     | 0 - 10%  |
| Acute inhalation toxicity | 60 - 70% |
| Acute aquatic toxicity    | 60 - 70% |

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

| <b>Component</b>                          | <b>CAS Number</b> | <b>Concentration</b> |
|-------------------------------------------|-------------------|----------------------|
| Water                                     | 7732-18-5         | 30 - 40%             |
| Glycerol                                  | 56-81-5           | 45 - 55%             |
| p-tertiary-Octylphenoxy polyethyl alcohol | 9002-93-1         | 1 - 10%              |

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**4. FIRST- AID MEASURES**

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**Description of necessary first-aid measures****Eyes**

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

**Skin**

Wash affected area with plenty of water. Seek medical attention if symptoms persist.

**Ingestion**

Do not induce vomiting. Have victim drink 1-3 glasses of water to dilute stomach contents. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing. Obtain medical attention immediately.

**Inhalation**

Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention if symptoms persist.

**Most important symptoms/effects, acute and delayed**

Aside from the information found under description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

**Indication of immediate medical attention and special treatment needed****Notes to Physicians**

Treat symptomatically.

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**5. FIRE - FIGHTING MEASURES**

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**Suitable (and unsuitable) Extinguishing Media**

Use foam, dry chemical or carbon dioxide. Use water spray for surroundings and containers.

**Specific hazards arising from the chemical**

None known.

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**5. FIRE - FIGHTING MEASURES**

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**Special Protective Actions for Fire-Fighters**

Wear full protective clothing and self-contained breathing apparatus.

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**6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures**

Wear appropriate protective clothing.

**Environmental Precautions**

Prevent the material from entering drains or watercourses. Notify authorities if spill has entered watercourse or sewer or has contaminated soil or vegetation.

**Methods and materials for containment and cleaning up**

Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal.

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**7. HANDLING AND STORAGE**

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**Precautions for safe handling**

Wear appropriate protective equipment when handling. Do not eat or drink while handling this material. Avoid contact with eyes, skin and clothing.

**Conditions for safe storage**

Store at room temperature. Keep container tightly closed when not in use. Storage area should be: cool - dry - well ventilated - out of direct sunlight - away from sources of ignition (heat, sparks, flames, pilot lights) - away from incompatible materials (see Section 10)

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Control parameters**

Exposure limits are listed below, if they exist.

**Glycerol (as Glycerin mist)**

OSHA: PEL 5 mg/m<sup>3</sup>, respirable fraction  
15 mg/m<sup>3</sup>, total dust

**Appropriate engineering controls**

Use engineering methods to prevent or control exposure. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

**Individual protection measures****Respiratory Protection**

Respiratory protection not normally required.

**Skin Protection**

Chemical resistant gloves

**Eye/Face Protection**

Chemical goggles or safety glasses with side shields

**Body Protection**

Normal work wear.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**Appearance**

|                                                |                   |
|------------------------------------------------|-------------------|
| <b>Physical State</b>                          | Liquid            |
| <b>Color</b>                                   | Clear             |
| <b>Odor</b>                                    | Odorless          |
| <b>Odor Threshold</b>                          | No data available |
| <b>pH</b>                                      | 7.5               |
| <b>Specific Gravity</b>                        | No data available |
| <b>Boiling Range/Point (°C/F)</b>              | No data available |
| <b>Melting Point (°C/F)</b>                    | No data available |
| <b>Flash Point (PMCC) (°C)</b>                 | Not flammable     |
| <b>Vapor Pressure</b>                          | No data available |
| <b>Evaporation Rate (BuAc=1)</b>               | No data available |
| <b>Solubility in Water</b>                     | Soluble           |
| <b>Vapor Density (Air = 1)</b>                 | No data available |
| <b>VOC (g/l)</b>                               | No data available |
| <b>Partition coefficient (n-octanol/water)</b> | No data available |
| <b>Viscosity</b>                               | No data available |
| <b>Auto-ignition Temperature</b>               | No data available |
| <b>Decomposition Temperature</b>               | No data available |
| <b>Upper explosive limit</b>                   | No data available |
| <b>Lower explosive limit</b>                   | No data available |
| <b>Flammability (solid, gas)</b>               | Not applicable    |

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**10. STABILITY AND REACTIVITY**

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**Reactivity**

No known reactivity.

**Chemical Stability**

Stable under normal conditions.

**Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**Conditions to Avoid**

Heat - high temperatures

**Incompatible Materials**

Strong oxidizing agents - strong acids - strong bases

**Hazardous Decomposition Products**

Oxides of carbon - nitrogen oxides - sulfur oxides - hydrogen chloride gas - sodium oxides

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**11. TOXICOLOGICAL INFORMATION**

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**Acute Toxicity**Glycerol:

Oral LD50 (rat) >10,000 mg/kg

Dermal LD50 (rabbit) >10,000 mg/kg

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**11. TOXICOLOGICAL INFORMATION**

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p-tertiary-Octylphenoxy polyethyl alcohol

Oral LD50 (rat) 1800 mg/kg

Dermal LD50 (rabbit) 8000 mg/kg

**Specific Target Organ Toxicity (STOT) – single exposure**

Glycerol: Available data indicates this component will not cause target organ effects after a single exposure.

p-tertiary-Octylphenoxy polyethyl alcohol: No data available to this component will cause target organ effects after single exposure.

**Specific Target Organ Toxicity (STOT) – repeat exposure**

Glycerol: Available data indicates this component will not cause target organ effects after repeated exposure.

p-tertiary-Octylphenoxy polyethyl alcohol: No data available to indicate this component will cause target organ effects after repeated exposure.

**Serious Eye damage/Irritation**

Glycerol: Not irritating in rabbit studies

p-tertiary-Octylphenoxy polyethyl alcohol: In animal studies (rabbits) this component caused moderate eye irritation.

**Skin Corrosion/Irritation**

Glycerol: Not irritating in rabbit studies

p-tertiary-Octylphenoxy polyethyl alcohol: Available data indicates this component may cause mild skin irritation.

**Respiratory or Skin Sensitization**

Glycerol: No data available to indicate this component may cause skin or respiratory sensitization.

p-tertiary-Octylphenoxy polyethyl alcohol: No data available to indicate this component may cause skin or respiratory sensitization.

**Carcinogenicity**

Not considered carcinogenic by IARC, NTP or OSHA.

**Germ Cell Mutagenicity**

Glycerol: Not mutagenic in in vitro laboratory studies.

p-tertiary-Octylphenoxy polyethyl alcohol: No data available to indicate this component is mutagenic or genotoxic.

**Reproductive Toxicity**

Glycerol: Available data indicates this component will not cause reproductive toxicity or birth defects.

p-tertiary-Octylphenoxy polyethyl alcohol: No data available to indicate this component may cause reproductive toxicity or birth defects.

**Aspiration Hazard**

No data available to indicate product is an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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**Ecotoxicity**

p-tertiary-Octylphenoxy polyethyl alcohol

LC50 (fathead minnow) 8.9 mg/l 96h

EC50 (Daphnia) 26 mg/l 48h

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**12. ECOLOGICAL INFORMATION**

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**Mobility in soil**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bioaccumulative Potential**

No relevant studies identified.

**Other adverse effects**

No relevant studies identified.

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal Methods**

Dispose of in accordance with all applicable local and national regulations.

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**14. TRANSPORT INFORMATION**

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DOT - Not Regulated

IATA - Not Regulated

IMDG - Not Regulated

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**15. REGULATORY INFORMATION**

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**United States TSCA Inventory**

Components of this product have been verified for the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

**Canada DSL Inventory**

Components of this product have been verified for inclusion on the Domestic Substance List (DSL).

**WHMIS Classification**

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

**SARA Title III Sect. 311/312 Categorization**

Immediate (Acute)

**California Proposition 65**

This product contains chemicals which the State of California has found to cause cancer, birth defects or other reproductive harm.

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**16. OTHER INFORMATION**

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**NFPA Ratings**

NFPA Code for Flammability - 1

NFPA Code for Health - 2

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards – None

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**16. OTHER INFORMATION**

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**HMIS Ratings**

HMIS Code for Flammability - 1

HMIS Code for Health - 2

HMIS Code for Physical Hazard - 0

HMIS Code for Personal Protection - See Section 8

\*Chronic

**Legend**

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service

ECHA: European Chemicals Agency

IARC: International Agency for Research on Cancer

N/A: Denotes no applicable information found or available

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

**Information Source and References**

This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

**Prepared By:** EnviroNet LLC.

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