Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifier
   Product Name: Xpert Xpress MVP
   Product Code: 900-0788; 900-0836; 900-0968; 900-0969; RXPRSMVP-10; XPRSMVP-CE-10; XPRSMVP-10; XPRSMVP-120

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against
   Relevant Identified Use(s): Laboratory use

1.3 Details of the Supplier of the Safety Data Sheet
   Manufacturer: Cepheid
   904 Caribbean Drive
   Sunnyvale, CA 94089
   United States
   www.cepheid.com
   US: techsupport@cepheid.com
   Telephone (General): 1 (888) 838-3222 - US Option 2
   Telephone (General): 1 (408) 541-4191 - Outside of the US

1.4 Emergency Telephone Number
   Manufacturer: 1 (800) 535-5053 - INFOTRAC - 24 hr Emergency
   Manufacturer: 1 (352) 323-3500 - Outside of the US

Section 2: Hazards Identification

The following SDS is for the final finished mixture product only as used in the laboratory. The product contains beads and reagents in the cartridge or in off-board containers. Exemptions for disclosing some component information are pursuant to CLP Article 1(5)(d) and 29 CFR 1910.1200(g)(2)(i)(C)(1)&(2).

EU/EEC

2.1 Classification of the Substance or Mixture
   CLP: Not Classified

2.2 Label Elements
   CLP: No label element(s) required

2.3 Other Hazards
   CLP: According to Regulation (EC) No. 1272/2008 (CLP) this material is not considered hazardous.
UN GHS
According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition

2.1 Classification of the Substance or Mixture
UN GHS
Acute Toxicity Oral 5
Acute Toxicity Dermal 5
Eye Irritation 2B

2.2 Label Elements
UN GHS
WARNING
Hazard Statements
May be harmful if swallowed
May be harmful in contact with skin
Causes eye irritation

Precautionary Statements
Prevention
Wash thoroughly after handling.
Response
Call a POISON CENTER or doctor/physician if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
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.

2.3 Other Hazards
UN GHS
According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)
According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the Substance or Mixture
OSHA HCS 2012
Eye Irritation 2B

2.2 Label Elements
OSHA HCS 2012
WARNING
Hazard Statements
Causes eye irritation

Precautionary Statements
Prevention
Wash 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.

2.3 Other Hazards
OSHA HCS 2012
According to Regulation 29 CFR 1910.1200 (Hazard Communication Standard) this product is considered hazardous.
2.1 Classification of the Substance or Mixture

WHMIS Eye Irritation 2B

2.2 Label Elements

WHMIS

WARNING

Hazard Statements Causes eye irritation

Precautionary Statements
Prevention Wash 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.

2.3 Other Hazards

WHMIS

According to the Workplace Hazardous Materials Information System (WHMIS), this product is considered hazardous.

2.4 Other Information

All other reagents, beads, and other constituents are at concentrations less than 1% in the mixture or not considered hazardous under US hazard communication regulations (29 CFR 1910.1200), EU directives for classification and labeling of substances or mixtures or the Global Harmonization System for classification and labeling of substances or mixtures.

Section 3: Composition/Information on Ingredients

3.1 Substances

Material does not meet the criteria of a substance.
3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>Classifications According to Regulation/Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidinium thiocyanate</td>
<td>CAS:593-84-0</td>
<td>10 - 20%</td>
<td>EU CLP: Acute Tox. 4, H302</td>
</tr>
<tr>
<td></td>
<td>EINECS:209-812-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Section 16 for full text of H-statements.

Section 4: First Aid Measures

4.1 Description of First Aid Measures

Inhalation
First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing.

Skin
First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.

Eye
First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion
First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed
Refer to Section 11 - Toxicological Information.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to Physician
All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Firefighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media
LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
SMALL FIRES: Dry chemical, CO2 or water spray.

Unsuitable Extinguishing Media
No data available

5.2 Special Hazards Arising from the Substance or Mixture

Unusual Fire and Explosion Hazards
Plastic cartridge containing reagents may emit toxic vapors of carbon oxides, sulfur oxides, nitrogen oxides.
5.3 Advice for Firefighters

Structural firefighters’ protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions

In the event a cartridge is broken these personal precautions are applicable. Wear appropriate protective clothing. Do not walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

Emergency Procedures

No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.

6.2 Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and Material for Containment and Cleaning Up

Containment/ Clean-up Measures

For small spills, wear gloves and absorb spill with paper towel. Do not dispose spilled materials down drain.

6.4 Reference to Other Sections

Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7: Handling and Storage

7.1 Precautions for Safe Handling

Handling

No special handling necessary. If cartridge is broken avoid contact with spilled reagents.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage

Store according to product labeling. Keep away from incompatible materials. Store locked up. Keep container/package tightly closed in a cool, well-ventilated place.

7.3 Specific End Use(s)

Refer to Section 1.2 - Relevant identified uses.
Section 8: Exposure Controls/Personal Protection

8.1 Control Parameters

<table>
<thead>
<tr>
<th>Exposure Limits/Guidelines</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidinium thiocyanate</td>
<td>TWA</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls

Engineering Measures/Controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

Respiratory equipment is not expected to be necessary if material is used under ordinary conditions and as recommended. Otherwise, follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

Wear chemical splash safety goggles.

Skin/Body

Wear protective clothing

Environmental Exposure Controls

Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9: Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
</tr>
<tr>
<td>Color</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
</tr>
<tr>
<td>Specific Gravity/Relative Density</td>
</tr>
</tbody>
</table>

Beads are solid white components in cartridges; reagents are clear liquids which are primarily buffered in aqueous solutions. Components are odorless.
9.2 Other Information
No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability
Stable

10.3 Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

10.4 Conditions to Avoid
Incompatible materials. Burning plastic cartridge containing reagents may liberate toxic byproducts.

10.5 Incompatible Materials
Acids, oxidizing agents.

10.6 Hazardous Decomposition Products
Burning plastic cartridge containing reagents may liberate toxic byproducts.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects

Product Information:
Acute Toxicity
Inhalation May cause irritation
Eye Contact Causes eye irritation
Skin Contact Causes mild skin irritation
Ingestion Harmful if swallowed

Sensitization No data available
Mutagenic effects No data available
Carcinogenic effects No data available
Reproductive effects No data available
STOT - single exposure No data available
STOT - repeated exposure No data available
Aspiration hazard  
No data available

### Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Acute Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidinium thiocyanate</td>
<td>593-84-0</td>
<td>Intraperitoneal-Mouse LD50 • 593 mg/kg</td>
</tr>
</tbody>
</table>

Key to abbreviations

**LD = Lethal Dose**

The following values are calculated based on chapter 3.1 of the GHS document (ATE)

ATEmix (oral) 2,965 mg/kg

### Section 12: Ecological Information

#### 12.1 Toxicity

Guanidinium thiocyanate (593-84-0): LC50 (guppy): 89.1 mg/l @ 96h

#### 12.2 Persistence and Degradability

No data available.

#### 12.3 Bioaccumulative Potential

No data available.

#### 12.4 Mobility in Soil

No data available.

#### 12.5 Results of PBT and vPvB Assessment

No PBT and vPvB assessment has been conducted.

#### 12.6 Other Adverse Effects

No studies have been found.

### Section 13: Disposal Considerations

#### 13.1 Waste Treatment Methods

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Disposal Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Waste</td>
<td>Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.</td>
</tr>
<tr>
<td>Packaging Waste</td>
<td>Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.</td>
</tr>
</tbody>
</table>
13.2 Other Information

Biological specimens, transfer devices, and used cartridges should be considered capable of transmitting infectious agents requiring standard precautions. Follow your institution’s environmental waste procedures for proper disposal of used cartridges and unused reagents. These materials may exhibit characteristics of chemical hazardous waste requiring specific national or regional disposal procedures. If national or regional regulations do not provide clear direction on proper disposal, biological specimens and used cartridges should be disposed per WHO (World Health Organization) medical waste handling and disposal guidelines.

Section 14: Transport Information

<table>
<thead>
<tr>
<th>14.1 UN Number</th>
<th>14.2 UN Proper Shipping Name</th>
<th>14.3 Transport Hazard Class(es)</th>
<th>14.4 Packing Group</th>
<th>14.5 Environmental Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>TDG</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.6 Special Precautions for User

None specified.

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

No data available.

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

SARA Hazard Classifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Acute Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAS</td>
</tr>
<tr>
<td>Guanidinium thiocyanate</td>
<td>NDA</td>
</tr>
</tbody>
</table>

Canada

Labor

- Canada - WHMIS - Classifications of Substances
  - Guanidinium thiocyanate 593-84-0 Not Listed
- Canada - WHMIS - Ingredient Disclosure List
  - Guanidinium thiocyanate 593-84-0 Not Listed

Environment

- Canada - CEPA - Priority Substances List
  - Guanidinium thiocyanate 593-84-0 Not Listed
15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out.

Section 16: Other Information

Relevant Phrases
H302 - Harmful if swallowed

Disclaimer/
Statement of Liability
The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its
use and all persons receiving it must make their own determination of the effects, properties, protections, and disposal which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.

Key to abbreviations
NDA = No data available