1. Identification of The Substance/Mixture and of The Company/Undertaking

**Identification of the substance/preparation**

   Product name  Recombinant MMLV retrovirus particles

**Company/undertaking identification**

   VectorBuilder Inc.
   1010 W 35th Street, Suite 515
   Chicago, IL 60609, USA
   Tel: (800) 517-2189
   (9:00 am to 5:30 pm CST)

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

2. Composition/Information on Ingredients

**Hazardous/non-hazardous components**

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

3. Hazards Identification

**GHS - classification**

   **Signal word**
   Not hazardous

   **Health hazards**
   Not hazardous

   **Physical hazards**
   Not hazardous

   **Principle routes of exposure/potential health effects**

<table>
<thead>
<tr>
<th>Component</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>May cause eye irritation with susceptible persons.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause skin irritation in susceptible persons.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled.</td>
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<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
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   **Specific effects**

<table>
<thead>
<tr>
<th>Effect</th>
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<tbody>
<tr>
<td>Carcinogenic</td>
<td>None</td>
</tr>
<tr>
<td>Mutagenic</td>
<td>None</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>None</td>
</tr>
<tr>
<td>Sensitization</td>
<td>None</td>
</tr>
</tbody>
</table>

   **Target organ effects**

   No known effects under normal use conditions.
This product is a potential biohazard and should be handled according to good lab practices, with proper personal protective equipment, proper engineering controls and within the parameters of the purchaser’s safety program.

### 4. First Aid Measures

**Skin contact**
Rinse with plenty of water. If symptoms arise, call a physician.

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

**Ingestion**
Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Do not induce vomiting without medical advice.

**Inhalation**
Move to fresh air. If symptoms persist, call a physician. If not breathing, give artificial respiration.

**Notes to physician**
Treat symptomatically.

### 5. Fire-fighting Measures

**Suitable extinguishing media**

**Special protective equipment for firefighters**
Wear self-contained breathing apparatus and protective suit.

### 6. Accidental Release Measures

**Personal precautions**
Use personal protective equipment.

**Methods for cleaning up**
Take up mechanically and collect in suitable container for disposal.

### 7. Handling and Storage

Follow Universal Precautions and established laboratory procedures when handling material. Handle as a potentially biohazardous material under Biosafety Level 2 containment.

### 8. Exposure Controls/Personal Protection

**Exposure limits**
We are not aware of any national exposure limit.

**Engineering measures**
Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**
- **Respiratory protection**
  In case of insufficient ventilation, wear suitable respiratory equipment.
- **Hand protection**
  Wash hand after use. Gloves recommended.
- **Eye protection**
  Safety glasses or goggles recommended.
- **Skin and body protection**
  Lightweight protective clothing.
- **Hygiene measures**
  Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls
Prevent product from entering drains.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>General information</th>
</tr>
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<tbody>
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</tr>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>Boiling point/range</td>
</tr>
<tr>
<td>Melting point/range</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Autoignition temperature</td>
</tr>
<tr>
<td>Oxidizing properties</td>
</tr>
<tr>
<td>Water solubility</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Stability
Stable under normal conditions.

Materials to avoid
No data available

Hazardous decomposition products
No data available

Polymerization
Hazardous polymerisation does not occur.

11. Toxicological Information

Acute toxicity
Not hazardous

Principle routes of exposure/potential health effects

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Target organ effects
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12. Ecological Information

<table>
<thead>
<tr>
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<th>No data available</th>
</tr>
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<tr>
<td>Mobility</td>
<td>No data available</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>Inherently biodegradable</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>Does not bioaccumulate</td>
</tr>
</tbody>
</table>

13. Disposal Considerations

Dispose of in accordance with local regulations.

14. Transport Information

**IATA**

- **Proper shipping name**: Not classified as dangerous in the meaning of transport regulations.
- **Hazard Class**: No information available
- **Subsidiary Class**: No information available
- **Packing group**: No information available
- **UN-No**: No information available

15. Regulatory Information

**US Federal regulations**

- **SARA 313**: This product is not regulated by SARA.
- **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**: This product does not contain HAPs.

**US State regulations**

- **California Proposition 65**: This product does not contain chemicals listed under Proposition 65.

**WHMIS hazard class**

- **Non-controlled**: This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.
16. Other Information

Reason for Revision  MSDS sections updated.

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The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS MSDS DOES NOT CONSTITUTE A WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

End of Safety Data Sheet