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

1.1 Product Identifier
   Product Name   RNAscope® Multiplex TSA Buffer
   Product No    322809

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses For Research Use Only. Not for diagnostic use.

1.3 Details of the supplier of the safety data sheet
   Supplier    Advanced Cell Diagnostics
   7707 Gateway Blvd
   Newark, CA 94560
   Tel: (510) 576-8800

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
   Classification (EC 1272/2008)
   Physical and Chemical Not classified
   Human health     Not classified
   Environment      Not classified

   Classification (1999/45/EEC) Not classified

   The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2 Label elements
   Contains METHYL-2H or METHYL-4 (3:1) Mixture of EC No. 220-239-6
   Label In Accordance with (EC) No. 1272/2008

   Signal Word Warning
   Hazard Statements H317 May cause an allergic skin reaction.
   Precautionary Statements
   P280 Wear protective gloves/protective clothing/eye protection/face protection.
   P501 Dispose of contents/container in accordance with national regulations.
   Supplementary Precautionary Statements
   P272 Contaminated work clothing should not be allowed out of the workplace.
   P261 Avoid breathing vapor/spray.
   P321 Specific treatment (see medical advice on this label.)
   P302+P352 IF ON SKIN: Wash with plenty of soap and water.
   P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
   P363 Wash contaminated clothing before reuse.

2.3 Other Hazards
   Not classified as PBT/vPvB by current EU criteria.
RNAscope® Multiplex TSA BUFFER

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

<table>
<thead>
<tr>
<th>CAS-No. 55965-84-9</th>
<th>EC No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classifications:</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3 – H301</td>
<td>T;R23/24/25</td>
</tr>
<tr>
<td>Acute Tox. 3 – H311</td>
<td>C;R34</td>
</tr>
<tr>
<td>Acute Tox. 3 – H331</td>
<td>R43</td>
</tr>
<tr>
<td>Skin Corr. 1B – H314</td>
<td>N;R50/53</td>
</tr>
<tr>
<td>Skin Sens. 1 – H317</td>
<td></td>
</tr>
<tr>
<td>Aquatic Acute 1 – H400</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 1 – H410</td>
<td></td>
</tr>
</tbody>
</table>

The full test for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: FIRST AID AND MEASURES

4.1 Description of first aid measures

Inhalation
Move the exposed person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

Ingestion
NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Get medical attention if any discomfort continues.

Skin Contact
Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if any discomfort continues.

Eye Contact
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General information
No specific information

4.3 Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Extinguishing Media
This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

5.3 Advice for fire fighters

Special Fire Fighting Procedures
No specific firefighting procedure given.

Protective equipment for fire fighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2 Environmental Precautions

Do not discharge into drains, water courses or onto the ground.
RNAscope® Multiplex TSA BUFFER

6.3 Methods and material for containment and cleaning up
Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush with plenty of water to clean spillage area. Do not contaminate water sources or sewer.

6.4 Reference to other sections
Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid spilling, skin and eye contact.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Keep container in a cool, well-ventilated area.

7.3 Specific end user(s)
The identified uses for this product are detained in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters
Ingredient Comments
No exposure limits noted for ingredient(s).

8.2 Exposure controls
Protective equipment

Engineering measures
Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of vapors.
Respiratory Equipment
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.
Hand Protection
Use suitable protective gloves if risk of skin contact.
Eye Protection
If risk of splashing, wear safety goggles or face shield.
Other Protection
Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures
DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance   Liquid

9.2 Other information
Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
No specific reactivity hazards associated with this product.

10.2 Chemical stability
Stable under normal temperature conditions and recommended use.

10.3 Possibility of hazardous reactions
Not determined.

10.4 Conditions to avoid
Avoid excessive heat for prolonged periods of time. Avoid contact with strong oxidizers. Avoid contact with strong reducing agents.
RNAscope® Multiplex TSA BUFFER

10.5 **Incompatible Materials**
Materials to avoid
Strong oxidizing substances. Strong reducing agents.

10.6 **Hazardous decomposition products**
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 **Information on toxicological effects**

**Toxicological information**
No data on the toxicity of the formulation are available. The classification of the formulation is calculated based on the composition of hazardous components.

**Health warnings**
INHALATION: In high concentrations, vapors may irritate throat and respiratory system and cause coughing.
INGESTION: May cause discomfort if swallowed. SKIN CONTACT: Liquid may irritate skin. EYE CONTACT: Spray and vapor in the eyes may cause irritation andsmarting.

SECTION 12: ECOLOGICAL INFORMATION

12.1 **Toxicity**

**Acute Fish Toxicity**
Not considered toxic to fish.

12.2 **Persistence and degradability**

**Degradability**
No data available

12.3 **Bioaccumulative potential**

**Bioaccumulative potential**
No data available on bioaccumulation

12.4 **Mobility in soil**

**Mobility**
No data available

**Adsorption/Desorption Coefficient**
Not determined.

12.5 **Results of PBT and vPvB assessment**
Not classified as PBT/vPvB by current EU criteria.

12.6 **Other adverse effects**
Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

**General Information**
Waste is classified as hazardous waste. Dispose to licensed waste disposal site in accordance with the local Waste Disposal Authority.

13.1 **Waste treatment methods**
Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

14.1 **UN Number**
Not applicable.

14.2 **UN proper shipping name**
Not applicable.

14.3 **Transport hazard class(es)**
Not applicable.

14.4 **Packing group**
Not applicable.
SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Statutory Instruments

Approved Code of Practice
Classification and Labelling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.

Guidance Notes
Workplace Exposure Limits EH40. CHIP HSG(108).

EU Legislation

15.2 Chemical Safety Assessment
No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Risk Phrases in Full
R34   Causes burns.
R61   May cause sensitization by skin contact.
NC   Not classified.
R23/24/25   Toxic by inhalation, in contact with skin and if swallowed.
R50/53   Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Statements in Full
H314   Causes skin irritation
H317   May cause an allergic skin reaction.
H331   Toxic if inhaled.
H301   Toxic if swallowed.
H311   Toxic in contact with skin.
H410   Very toxic to aquatic life with long-lasting effects.
H400   Very toxic to aquatic life.

Disclaimer
This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company’s knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user’s responsibility to satisfy himself as to the suitability of such information for his own particular use.