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

1.1 Product Identifier
   Product Name       RNAscope® 2.5 HD Duplex AMP 9
   Product No         322509

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: Skin Sens. 1 – H317
      Environment: Not classified

   Classification (1999/45/EC) R43.
   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.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS-No.</th>
<th>EC No.</th>
<th>CLASSIFICATION (EC 1272/2008)</th>
<th>CLASSIFICATION (67/548/EEC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHYL-2H or METHYL-4 (3:1) Mixture of EC No. 220-239-6</td>
<td>55965-84-9</td>
<td>&lt;1%</td>
<td>Acute Tox. 3 – H301</td>
<td>T;R23/24/25</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 – H311</td>
<td>C;R34</td>
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<td></td>
<td>Acute Tox. 3 – H331</td>
<td>R43</td>
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<td></td>
<td></td>
<td>Skin Corr. 1B – H314</td>
<td>N;R50/53</td>
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<td>Skin Sens. 1 – H317</td>
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<tr>
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<td>Aquatic Acute 1 – H400</td>
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<td>Aquatic Chronic 1 – H410</td>
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</table>

Hydrogen Peroxide Solution

<table>
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<th>COMPONENT</th>
<th>CAS-No.</th>
<th>EC No.</th>
<th>CLASSIFICATION (EC 1272/2008)</th>
<th>CLASSIFICATION (67/548/EEC)</th>
</tr>
</thead>
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<td>7722-84-1</td>
<td>&lt;1%</td>
<td>Ox. Liq. 1 – H271</td>
<td>R5</td>
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<tr>
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<td></td>
<td></td>
<td>Acute Tox. 4 – H302</td>
<td>O;R8</td>
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<td></td>
<td></td>
<td>Acute Tox. 4 – H332</td>
<td>C;R35</td>
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<td></td>
<td></td>
<td>Skin Corr. 1A – H314</td>
<td>Xn;R20/22</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3 – H335</td>
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</tr>
</tbody>
</table>

The full text 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

General information
Treat symptomatically.

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
Remove victim immediately from source of exposure. 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 and get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact
May cause skin sensitization.

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 fire fighting 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
Avoid discharge into drains, water courses or onto the ground.

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
Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

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
WEL = Workplace Exposure Limit

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
There are no known 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 available.
**RNAscope® 2.5 HD Duplex AMP 9**

10.4 **Conditions to avoid**

Avoid excessive heat for prolonged periods of time. Avoid contact with strong oxidizers. Avoid contact with strong reducing agents.

10.5 **Incompatible Materials**

Materials to avoid:

- Strong oxidizing substances.
- Strong reducing agents.

10.6 **Hazardous decomposition products**

In case of fire, toxic gases (CO, CO₂, NOx) may be formed.

### SECTION 11: TOXICOLOGICAL INFORMATION

11.1 **Information on toxicological effects**

**Toxicological information:**

No information available.

**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 and smarting.

Toxicological information on ingredients.

**HYDROGEN PEROXIDE SOLUTION ... % (CAS: 7722-84-1)**

### SECTION 12: ECOLOGICAL INFORMATION

12.1 **Toxicity**

No data available.

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.

**Surface tension**

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

**Road Transport Notes**

Not classified.

**Rail Transport Notes**

Not classified.

**Sea Transport Notes**

Not classified.

**Air Transport Notes**

Not classified.

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.

14.5 Environmental hazards
Environmentally Hazardous Substance/Marine Pollutant
No

14.6 Special precautions for user
Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
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 for everyone 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.
R35 Causes severe burns.
R8 Contact with combustible material may cause fire.
R20/22 Harmful by inhalation and if swallowed.
R5 Heating may cause an explosion.
R37 Irritating to respiratory system.
R43 May cause sensitization by skin contact.
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 severe skin burns and eye damage.
H332 Harmful if inhaled.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H271 May cause fire or explosion; strong oxidizer.
H335 May cause respiratory irritation.
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.