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

1.1 Product Identifier  
Product Name: RNAscope® 2.5 HD Duplex AMP 3  
Product No: 322503

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: Repr. 1B – H360D  
- Environment: Not classified  
Classification (1999/45/EC):  
- Repr. Cat. 2; R61.

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

2.2 Label elements  
Contains: FORMAMIDE  
Label In Accordance with (EC) No. 1272/2008

Signal word: Danger

Hazard statements:  
- H360D: May damage the unborn child.

Precautionary Statements:  
- P201: Obtain special instructions before use.  
- P308+P313: IF exposed or concerned: Get medical advice/attention.  
- P501: Dispose of contents/container in accordance with national regulations.

Supplemental Precautionary Statements:  
- P202: Do not handle until all safety precautions have been read and understood.  
- P281: Use personal protective equipment as required.  
- P405: Store locked up.  
- P501: Dispose of contents/container to...

Supplemental label information: RCH002

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>Formamidé</th>
<th>10 - 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No: 75-12-7</td>
<td>EC No.: 200-842-0</td>
</tr>
<tr>
<td>Classification (EC 1272/2008)</td>
<td>Classification (67/548/EEC)</td>
</tr>
<tr>
<td>Repr. 1B – H360D</td>
<td>Repr. Cat. 2, R61</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium Hydroxide</th>
<th>&lt; 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No: 1310-73-2</td>
<td>EC No.: 215-185-5</td>
</tr>
<tr>
<td>Classification (EC 1272/2008)</td>
<td>Classification (67/548/EEC)</td>
</tr>
<tr>
<td>Skin Corr. 1A H314</td>
<td>C;R35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hydrochloric Acid</th>
<th>&lt; 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No: 7647-01-0</td>
<td>EC No.: 231-595-7</td>
</tr>
<tr>
<td>Classification (EC 1272/2008)</td>
<td>Classification (67/548/EEC)</td>
</tr>
<tr>
<td>Skin Corr. 1B H314</td>
<td>C;R34</td>
</tr>
<tr>
<td>STOT SE 3 - H335</td>
<td>X;R37</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

General information
Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

Inhalation
Move the exposed person to fresh air at once. Provide rest, warmth, and fresh air. Get medical attention if any discomfort continues. Perform artificial respiration if breathing has stopped. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Ingestion
DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Provide rest, warmth and fresh air. Get medical attention immediately!

Skin Contact
Remove affected person from source of contamination. Wash the skin immediately with soap and water. Get medical attention promptly if symptoms occur after washing.

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

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. 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
Cool containers exposed to flames with water until well after the fire is out. Move container from fire area if it can be done without risk. Dike and collect extinguishing water.

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.

6.3 Methods and material for containment and cleaning up
Wear necessary protective equipment. Stop leak if possible without risk. DO NOT touch spilled material. Absorb in vermiculite, dry sand or earth and place into containers.

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 contact with eyes, skin and clothing. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level.

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/PERSOAL PROTECTION

8.1 Control Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>STD</th>
<th>TWA – 8 Hrs</th>
<th>STEL – 15 Min</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formamide</td>
<td>WEL</td>
<td>20 ppm</td>
<td>30 ppm</td>
<td>56 mg/m³</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>%</td>
<td>1 ppm</td>
<td>5 ppm</td>
<td>8 mg/m³</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>WEL</td>
<td>2 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WEL = Workplace Exposure Limit

8.2 Exposure controls
Protective equipment

Engineering measures
Provide adequate general and local exhaust ventilation.

Respiratory Equipment
No specific recommendation made, but respiratory protection must be used if the general level exceeds the recommed occupational exposure limit.

Hand Protection
Use protective gloves.

Eye Protection
Use approved safety goggles or face shield.

Other Protection
Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapor 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. When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance: Clear 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 head, flames and other sources of ignition. 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
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
This material is toxic.

Health warnings
INGESTION: May cause stomach pain or vomiting. INHALATION: May cause irritation to the respiratory system. SKIN CONTACT: May cause skin irritation/eczema. May cause sensitization by skin contact. EYE CONTACT: Irritating to eyes.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
There are no data on the ecotoxicity of this product.

12.1 Toxicity
No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
Bioaccumulative potential
No data available on bioaccumulation.

12.4 Mobility in soil
Mobility
No data available.

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)
ADR/RID/AND Class Not classified for transportation.

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
   Environmental Listing
   Statutory Instruments
   The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of
   Substances Hazardous to Health.
   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. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).
   EU Legislation
   System of specific information relating to Dangerous Preparations. 2001/58/EC. Regulation (EC) No 1907/2006 of the
   European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation
   2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives

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.
   R37   Irritating to respiratory system/
   R61   May cause harm to the unborn child.

Hazard Statements in Full
   H314   Causes severe skin burns and eye damage.
   H335   May cause respiratory irritation.
   H360D  May damage the unborn child.

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.