ADVANCED ANALYTICAL TECHNOLOGIES, INC.

Safety Data Sheet
FP-8201 Ultra Sensitivity RNA Diluent Marker

SECTION 1: Identification

1.1 Product identifier

Product name: FP-8201 Ultra Sensitivity RNA Diluent Marker

1.2 Recommended use of the chemical and restrictions on use

For Research and Development/Experimental Use Only

1.3 Supplier's details

Name: Advanced Analytical Technologies, Inc.
Address: 2450 SE Oak Tree Ct.
         Suite 101
         Ankeny, IA 50021
         USA
Telephone: 515-964-8500
Fax: 515-964-7377

1.4 Emergency phone number(s)

515-964-8500 (Monday-Friday 8:00AM-5:00PM CST)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with OSHA (29 CFR 1910.1200)
- Carcinogenicity (chapter 3.6), Cat. 2
- Repr. 1B
- Specific target organ toxicity, repeated exposure, Oral, Blood (chapter 3.9), Cat. 2

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word: Danger
Hazard statement(s)
- H360D: May damage the unborn child.
- H351: Suspected of causing cancer.
- H373: May cause damage to organs (blood) through prolonged or repeated exposure if swallowed.

Precautionary statement(s)
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P308+P313: IF exposed or concerned: Get medical advice/attention.
- P405: Store locked up.
- P501: Dispose of contents/container to an approved waste disposal plant.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

2.3 Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

3.1 Substances

Hazardous components

1. FORMAMIDE
   Concentration: 30 - 50 %*
   Other names / synonyms: CARBAMALDEHYDE; METHANAMIDE
   EC no.: 200-842-0
   CAS no.: 75-12-7
   Index no.: 616-052-00-8

Other Components

2. WATER
   Concentration: > 50 %*
   Other names / synonyms: DIHYDROGEN OXIDE; HYDROGEN OXIDE
   CAS no.: 7732-18-5

3. Proprietary non-hazardous ingredients*
   Concentration: < 0.5 %*
   Trade secret statement (OSHA 1910.1200(i))
   *The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact Wash off with soap and plenty of water. Consult a physician.

In case of eye contact Flush eyes with water as a precaution.

If swallowed Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical
No data available

5.3 Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
1. FORMAMIDE (CAS: 75-12-7)
TWA: 10.000000 ppm; USA (ACGIH)
Eye irritation
Liver damage
Kidney damage
Skin irritation
Danger of cutaneous absorption

2. FORMAMIDE (CAS: 75-12-7)
TWA: 10.000000 ppm 15.000000 mg/m3; USA (NIOSH)
Potential for dermal absorption

8.2 Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/form</td>
<td>Clear, colorless liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight odor</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
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<td>Initial boiling point and boiling range</td>
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</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
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<tr>
<td>Evaporation rate</td>
<td>No data available</td>
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<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Vapor pressure: No data available
Vapor density: No data available
Relative density: 1g/cm³
Solubility(ies): Completely miscible in water
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Acids, bases, oxidizing agents

10.6 Hazardous decomposition products
Carbon oxides, nitrogen oxides

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
Presumed human reproductive toxicant

**STOT-single exposure**
No data available

**STOT-repeated exposure**
Oral - May cause damage to organs through prolonged or repeated exposure. - Blood

**Aspiration hazard**
No data available

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**SECTION 12: Ecological information**

**Toxicity**
No data available

**Persistence and degradability**
No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**Other adverse effects**
No data available

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**SECTION 13: Disposal considerations**

**Disposal of the product**
Dispose of unused product, residues, and containers according to local, regional, state and national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Disposal of contaminated packaging**
Dispose of as unused product.

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**SECTION 14: Transport information**
DOT (US)  
Not dangerous goods

IMDG  
Not dangerous goods

IATA  
Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

SARA 302 Components  
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards  
Chronic Health Hazard

SARA 313 Components  
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components  
Formamide 75-12-7

New Jersey Right To Know Components  
Formamide 75-12-7

Pennsylvania Right To Know Components  
Formamide 75-12-7

California Prop. 65 Components  
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Revision date: October 5, 2016

This information provided concerning this Safety Data Sheet is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information and we assume no liability resulting from its use. Users should make their own investigations to determining the suitability of the information for their particular purposes. This material is for R&D/experimental use only. In no event shall Advanced Analytical be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if Advanced Analytical has been advised of the possibility of such damages.

Responsibility for SDS:  
Advanced Analytical Technologies, Inc.