1. Product and Company Identification

Material name: miRNA Annealing Buffer  
Revision date: 04-04-2012  
Version #: 01  
CAS #: Mixture  
Product code: 100063  
Product use: Industrial use.  
Synonym(s): Annealing Buffer  
Manufacturer/Supplier: NanoString Technologies  
Address: 530 Fairview Avenue North Suite 2000 Seattle, WA 98109  
Contact Person: Safety Committee  
Telephone number: 206-378-6266  
Emergency: Emergency telephone 206-378-6266

2. Hazards Identification

Physical state: Liquid.  
Appearance: Clear liquid.  
Emergency overview: Causes skin, eye and respiratory tract irritation.  
OSHA regulatory status: This product is hazardous according to OSHA 29 CFR 1910.1200.  
Potential health effects:  
- Eyes: Causes eye irritation.  
- Skin: Causes skin irritation. Prolonged contact may cause dryness of the skin.  
- Inhalation: Causes respiratory tract irritation.  
- Ingestion: No harmful effects expected in amounts likely to be ingested by accident.  
Potential environmental effects: The product is not expected to be hazardous to the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium chloride</td>
<td>7447-40-7</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Tris (hydroxyl methyl amino methane)</td>
<td>77-86-1</td>
<td>20 - 40</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures:  
- Eye contact: Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. Get medical attention promptly if symptoms occur after washing.  
- Skin contact: Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.  
- Inhalation: Move to fresh air. Get medical attention if any discomfort continues.  
- Ingestion: Rinse mouth. Get medical attention if any discomfort continues.  
Notes to physician: Treat symptomatically.

5. Fire Fighting Measures

Flammable properties: No unusual fire or explosion hazards noted.
Extinguishing media
Suitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Fire fighting equipment/instructions
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Hazardous combustion products
Carbon oxides.

6. Accidental Release Measures

Personal precautions
Use Personal Protective Equipment recommended in Section 8 of the MSDS.

Environmental precautions
No specific precautions.

Methods for cleaning up
Wipe up with absorbent material (e.g. cloth, fleece).

7. Handling and Storage

Handling
Use personal protective equipment as required. Observe good industrial hygiene practices.

Storage
Keep in original container.

8. Exposure Controls / Personal Protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Engineering controls
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection
Wear safety glasses with side shields (or goggles).

Skin protection
Wear protective gloves. Lab coat.

Respiratory protection
Not normally needed.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance
Clear liquid.

Color
Colorless.

Odor
None.

Odor threshold
Not available.

Physical state
Liquid.

Form
Liquid.

pH
Not available.

Melting point
Not available.

Freezing point
Not available.

Boiling point
Not available.

Flash point
Not available.

Evaporation rate
Not available.

Flammability limits in air, upper, % by volume
Not applicable.

Flammability limits in air, lower, % by volume
Not applicable.

Vapor pressure
Not available.

Vapor density
Not available.

Specific gravity
Not available.

Solubility (water)
Soluble in water.

Partition coefficient (n-octanol/water)
Not available.

Auto-ignition temperature
Not available.

Decomposition temperature
Not available.
10. Chemical Stability & Reactivity Information

Chemical stability
Material is stable under normal conditions.

Conditions to avoid
None known.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
No hazardous decomposition products are known.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components | Test Results |
---|---|
Potassium chloride (7447-40-7) | Acute Oral LD50 Rat: 2600 mg/kg |
Tris (hydroxyl methyl amino methane) (77-86-1) | Acute Oral LD50 Rat: 5900 mg/kg |

Acute effects
Causes skin, eye and respiratory tract irritation.

Local effects
Irritation.

Sensitization
None known.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Mutagenicity
None known.

Reproductive effects
None known.

12. Ecological Information

Ecotoxicological data

Components | Test Results |
---|---|
Potassium chloride (7447-40-7) | EC50 Water flea (Daphnia magna): 83 mg/l 48 hours |
| | LC50 Western mosquitofish (Gambusia affinis): 435 mg/l 96 hours |

Ecotoxicity
Not expected to be harmful to aquatic organisms.

Persistence and degradability
No data available.

Bioaccumulation / Accumulation
No data available.

Partition coefficient (n-octanol/water)
Not available.

Mobility in environmental media
The product is miscible with water. May spread in water systems.

13. Disposal Considerations

Waste from residues / unused products
Dispose of in accordance with local regulations.

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.
TDG
Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)
Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)
None

Supervised Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A)
No

Section 311/312 (40 CFR 370)
Yes

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)
Not controlled

Canadian regulations
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS status
Controlled

WHMIS classification
D2B - Other Toxic Effects-TOXIC

WHMIS labeling

Inventory status

Country(s) or region | Inventory name | On inventory (yes/no)*
--- | --- | ---
Australia | Australian Inventory of Chemical Substances (AICS) | Yes
Canada | Domestic Substances List (DSL) | Yes
Canada | Non-Domestic Substances List (NDSL) | No
China | Inventory of Existing Chemical Substances in China (IECSC) | Yes
Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes
Europe | European List of Notified Chemical Substances (ELINCS) | No
Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes
Korea | Existing Chemicals List (ECL) | Yes
New Zealand | New Zealand Inventory | Yes
Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

* "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information
HMIS® is a registered trade and service mark of the NPCA.
| **HMIS® ratings** | Health: 2  
|                 | Flammability: 0  
|                 | Physical hazard: 0  
| **NFPA ratings** | Health: 2  
|                 | Flammability: 0  
|                 | Instability: 0  

**Disclaimer**  
This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

**Issue date**  
04-04-2012