

## 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  
 530 Fairview Avenue North Suite 2000 Seattle, WA 98109  
 safetycommittee@nanosting.com  
 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** WARNING!  
  
 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

Components	CAS #	Percent
Potassium chloride	7447-40-7	20 - 40
Tris (hydroxyl methyl amino methane)	77-86-1	20 - 40

**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.

<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Fire fighting equipment/instructions</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Hazardous combustion products</b>	Carbon oxides.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Use Personal Protective Equipment recommended in Section 8 of the MSDS.
<b>Environmental precautions</b>	No specific precautions.
<b>Methods for cleaning up</b>	Wipe up with absorbent material (e.g. cloth, fleece).

## 7. Handling and Storage

<b>Handling</b>	Use personal protective equipment as required. Observe good industrial hygiene practices.
<b>Storage</b>	Keep in original container.

## 8. Exposure Controls / Personal Protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	Wear protective gloves. Lab coat.
<b>Respiratory protection</b>	Not normally needed.
<b>General hygiene considerations</b>	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

<b>Appearance</b>	Clear liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>pH</b>	Not available.
<b>Melting point</b>	Not available.
<b>Freezing point</b>	Not available.
<b>Boiling point</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not applicable.
<b>Flammability limits in air, lower, % by volume</b>	Not applicable.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Specific gravity</b>	Not available.
<b>Solubility (water)</b>	Soluble in water.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	None known.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

### Toxicological data

<b>Components</b>	<b>Test Results</b>
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
<b>Acute effects</b>	Causes skin, eye and respiratory tract irritation.
<b>Local effects</b>	Irritation.
<b>Sensitization</b>	None known.
<b>Chronic effects</b>	None known.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Mutagenicity</b>	None known.
<b>Reproductive effects</b>	None known.

## 12. Ecological Information

### Ecotoxicological data

<b>Components</b>	<b>Test Results</b>
Potassium chloride (7447-40-7)	EC50 Water flea ( <i>Daphnia magna</i> ): 83 mg/l 48 hours LC50 Western mosquitofish ( <i>Gambusia affinis</i> ): 435 mg/l 96 hours
<b>Ecotoxicity</b>	Not expected to be harmful to aquatic organisms.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulation / Accumulation</b>	No data available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Mobility in environmental media</b>	The product is miscible with water. May spread in water systems.

## 13. Disposal Considerations

<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	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

**Superfund 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

\*A "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