MATERIAL SAFETY DATA SHEET

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@nanostring.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.

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.
Chronic effects	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

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 CRF 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.
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