Safety Data Sheet

National Institute of Advanced Industrial Science and Technology
AIST

1. Identification of the Substance/Mixture and the Supplier

Supplier : The National Institute of Advanced Industrial Science and Technology
Address : 1-3-1, Kasumigaseki, Chiyoda, Tokyo, Japan
Department : Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan
Person in Charge : Certified Reference Material Staff
Phone Number : 029-861-4059 Fax Number : 029-861-4009
Emergency Contact : Same as above

Prepared on : April 9, 2013
Revised on : April 1, 2015
ID Number : 6204001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 6204-a
Ribonucleic Acid (RNA) Solutions for Quantitative Analysis
(Ribonucleic Acid (RNA) Solutions for Quantitative Analysis)

Recommended Use of the Chemical and Restriction on Use : This reference material is a suite of five ribonucleic acid (RNA) solutions featuring different base sequences. Each sample solution contains single-strand of RNA of 533 base or 1033 base. This reference material can be used, in the RNA quantification analysis using DNA microarray (DNA chip), quantitative RT-PCR (reverse transcription polymerase chain reaction), next-generation sequencer, etc., for evaluation and quality control of quantification equipment and analysis methods. This reference material can also be used for assigning values of RNA reference materials for DNA chip evaluation. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification : Not classifiable
GHS Label Element : —
Signal Word : —
Hazards Statement : —
Precautionary Statement :

［Precaution］
Few hazards in normal conditions of use.
［Action］
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician when feeling unwell.
If on skin (or hair): Wash with soap and plenty of water. If experiencing inflammation: Get medical advice/attention.
If in eyes: Rinse immediately with plenty of water for at least 15 minutes. If there are any problems: Get medical advice/attention.
If swallowed: Rinse mouth. Call a doctor/physician when feeling unwell.
［Storage］
Store in a freezer with temperature of −20 °C or lower.

［Disposal］
Comply with applicable legislation and local government ordinance. Entrust disposal of this reference material to a professional waste disposal company licensed by prefectural governor.

The other hazards than the above do not result in classification or are not classifiable.

3. Composition/Information on Ingredients

Substance/Mixture	:	Substance
Chemical Identity	:	Ribonucleic acid
Ingredient 1		(Sample Identity: RNA500-A)
Chemical Identity	:	RNA (Sequence Identify: Accession No.: 500-1)
Concentration (Content)	:	30.6 ng/μL
ID Number in Official Gazette	:	Not specified
CAS Number	:	Not specified
Hazardous Ingredient	:	Nothing special
Ingredient 2		(Sample Identity: RNA500-B)
Chemical Identity	:	RNA (Sequence Identify: Accession No.: 500-2)
Concentration (Content)	:	27.3 ng/μL
ID Number in Official Gazette	:	Not specified
CAS Number	:	Not specified
Hazardous Ingredient	:	Nothing special
Ingredient 3		(Sample Identity: RNA500-C)
Chemical Identity	:	RNA (Sequence Identify: Accession No.: 500-4)
Concentration (Content)	:	32.4 ng/μL
ID Number in Official Gazette	:	Not specified
CAS Number	:	Not specified
Hazardous Ingredient	:	Nothing special
Ingredient 4		(Sample Identity: RNA1000-A)
Chemical Identity	:	RNA (Sequence Identify: Accession No.: 1000-3)
Concentration (Content)	:	58.3 ng/μL
ID Number in Official Gazette	:	Not specified
CAS Number	:	Not specified
Hazardous Ingredient	:	Nothing special
Ingredient 5		(Sample Identity: RNA1000-B)
Chemical Identity	:	RNA (Sequence Identify: Accession No.: 1000-4)
Concentration (Content)	:	59.5 ng/μL
ID Number in Official Gazette	:	Not specified
CAS Number	:	Not specified

Hazardous Ingredient : Nothing special

4. First-Aid Measures

If inhaled	:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician when feeling unwell.
If on skin	:	Wash with soap and plenty of water. If inflammation occurs: Get medical advice/attention.
If in eyes	:	Rinse immediately with plenty of water for at least 15 minutes. If there are any problems: Get medical advice/attention.
If swallowed	:	Rinse mouth. Call a doctor/physician when feeling unwell.
Expected Acute and Delayed Symptom	:	-
Most Critical Characteristic and Symptom	:	-
Protection of First-Aid Responder	:	-

5. Fire-Fighting Measures

Extinguishing Media	:	Dry chemical extinguisher, Foam extinguishing agent, Carbon dioxide, Sand, Sprayed water
Fire-Specific Hazards	:	In case of fire, may emit irritating or toxic fume (or gas).
Specific Fire-Fighting Method	:	Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers, cool their surroundings with sprayed water.
Protection of Fire-Fighters	:	Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, compressed air open-circuit self-contained breathing apparatus, compressed oxygen closed-circuit self-contained breathing apparatus, rubber gloves and rubber boots.

6. Accidental Release Measures

Personal Precaution Personal Protective Equipment and Emergency Procedures	:	Remove potential ignition sources from the vicinity promptly. Get fire-fighting kit ready to be prepared for ignition. Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
Environmental Precautions	:	Take precautions to prevent spillage from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding environment.
Recovery and Neutralization	:	Collect spillage in empty containers by getting it adsorbed to wiping cloth, rag or earth and sand, etc.
Prevention of Secondary Disaster	:	Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

7. Handling and Storage Precautions

Handling

Engineering Precautions	:	Nothing special Keep container tightly closed and use local ventilation system if vapor/mist is generated.
Precautions for Safe Handling	:	Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers.

Storage

Appropriate Storage Conditions	:	Protect from sunlight. Store in a tightly-closed container in a freezer with temperature of −20 °C or lower.
Engineering Precautions	:	Nothing special
Incompatible Materials	:	No data available
Safe Container Packaging Material	:	Polyethylene, Polypropylene

8. Exposure Controls/Personal Protection

Threshold Limit Value

Not specified

Permissible Concentration (Ribonucleic acid)

- ACGIH TLV-TWA : No data available
- Value recommended by Japan Society for Occupational Health : Not specified

Engineering Controls

Ventilation/Exhaust	:	Keep container tightly closed and use local ventilation system if vapor/mist is generated.
Safety Control/ Gas Detection	:	-
Storage Precaution	:	-

Personal Protective Equipment (PPE)

Respiratory System	:	Protective mask
Hands	:	Protective gloves
Eyes	:	Eye protector
Skin and Body	:	Protective clothing

9. Physical and Chemical Properties

・Appearance, etc.	:	Liquid
・Color	:	Colorless
・Odor	:	Odorless
・pH	:	No data available
・Melting Point	:	No data available
・Boiling Point	:	No data available
・Flash Point	:	No data available
・Explosive Range	:	No data available
・Vapor Pressure	:	No data available

・Relative Vapor Density (Air=1)	:	No data available
・Solubility	:	Soluble in water
・Partition Coefficient : n-octanol/water log Po/w	:	No data available
・Auto-Ignition Temperature		No data available
・Decomposition Temperature	:	No data available
・Viscosity	:	No data available

10. Stability and Reactivity

◇Chemical Stability

・Stable under normal conditions

◇Reactivity

・No data available

◇Conditions to Avoid

・Sunlight, Heat

◇Incompatible Materials

・No data available

◇Hazardous Decomposition Products

・No data available

11. Toxicological Information

No data available

12. Ecological Information

Ecotoxicity

・No data available

Persistence and Degradability

・No data available

Bioaccumulative Potential

・No data available

Mobility in Soil

・No data available

13. Disposal Considerations

Residual Waste	:	Incineration method
Contaminated Container and Package	:	Dispose of containers after thoroughly emptying them.

14. Transport Information

UN Number : Not applicable

UN : Not applicable

Classification		
Shipping Name	:	-
Packing Group	:	-
Marine Pollutant	:	Not applicable
Precautions	:	Transport this reference material carefully while ensuring that the containers are not leaking. Load the containers in a way to prevent overturning, falling, collapsing and damages. Take note of appropriate conditions for storage and keep this reference material frozen during transportation.

15. Applicable Legislation

No applicable legislation

16. Other Information

Others

The information in this Safety Data Sheet is not intended to be exhaustive and is based on currently-available information and data. The precautions given in this data sheet are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety precautions appropriate to each specific application and context of use. This Safety Data Sheet (SDS) is intended to provide information and not intended to guarantee anything in handling the reference material. This Safety Data Sheet (SDS) is prepared based on JIS Z7253, and presents identical information to Material Safety Data Sheet (MSDS) prepared based on JIS Z7250:2010.