

Safety Data Sheet

MEASURE AST R-1

1. Product and Company Identification

Name: MEASURE AST R-1
Manufacturer's name: UMA, Co., Ltd.

Manufacturer's name: UMA Co., Ltd.
Address: 2-19-6, Yokosuka, Matsudo. Chiba, 270-0031, Japan
Tel: +81- 47-710-4871
Fax: +81- 47-710-4872

2.Com-position information on ingredients

- Tris (CAS: 77-86-1) buffer pH ,9.1
L-Aspartic Acid(CAS: 56-84-8):
NADH(CAS;53-84-9)
NaN3(CAS;22628-22-8)
LDH(EC1.1.1.78)
MDH(EC1.1.1.38) I

3. Hazard Identification

May cause respiratory irritation and/or sensitization. Irritating to eyes, respiratory system and skin.

4.First Aid Measures

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical.
Skin: Flush skin with plenty of water. Seek medical aid if symptoms persist.
Ingestion: Wash mouth out with water. Get medical aid.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

5. Fire fighting measures

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

6. Accidental Release Measures

General Information: Use proper protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or weep up material and place into a suitable disposal container.

7. Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.

Storage: Store in a cool, dry place. Store in a tightly closed container.

8. Exposure Controls/Personal Protection

The solid should be handled suitably with ventilation, such as Reverse Flow Dust Cabinet. Where indicated by Risk Assessment control measures may need to be supplemented by suitable Personal Protective Equipment such as gloves, eye protection and air filtering respirator.

9. Physical and Chemical Properties

Appearance and Odor:	Colorless clear liquid.
pH (as supplied)	9.00~9.50
Melting point:	Not available
Boiling point:	Not available
Specific gravity:	Not available

10. Stability and reactivity

Chemical stability: This material is stable under normal and anticipated ambient storage and handling conditions.

Condition to avoid: Freeze, heat, and sunlight

Incompatibility with other materials: Strong oxidizers, acids, bases, heavy metals

11. Toxicological information

No toxicological studies have been performed on this reagent.

Acute exposure may result in respiratory irritation causing coughing, and skin irritation causing redness and pain.

12. Ecological information

There are no likely adverse effects on the aquatic environment in quantities likely to be encountered in normal laboratory practice.

13. Disposal Considerations

Any disposal practice must be in compliance with local, state, and federal laws and regulations (contact local or state environmental agency specific rules).

Sodium azide may react with copper or lead plumbing to form explosive compounds. Even

though the reagents contain minute quantities of sodium azide, drains should be well flushed with large amount of water when discarding the reagents. Incinerate and dispose of waste in accordance with all applicable regulations.

14. Transport information

IATA: Not regulated as a hazardous material.

IMO: Not regulated as a hazardous material.

RID/ADR: Not regulated as a hazardous material.

15. Regulatory information

No information found

16. Other information

The information above 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, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for loss of profit or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

Safety Data Sheet

MEASURE AST R-2

1. Product and Company Identification

Name: MEASURE AST R-2
Manufacturer's name: UMA, Co., Ltd.
S H-488
Address: 2-19-6, Yokosuka, Matsudo. Chiba, 270-0031, Japan
Tel: +81- 47-710-4871
Fax: +81- 47-710-4872

2. Composition information on ingredients

Tris (CAS: 77-86-1) buffer pH 5.5:
 α -KG (CAS;328-50-7):
Sodium azide (CAS: 26628-22-8): 0.086 mmol/l

3. Hazard Identification

May cause respiratory irritation and/or sensitization. Irritating to eyes, respiratory system and skin.

4. First Aid Measures

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical.
Skin: Flush skin with plenty of water. Seek medical aid if symptoms persist.
Ingestion: Wash mouth out with water. Get medical aid.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

5. Fire fighting measures

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

6. Accidental Release Measures

General Information: Use proper protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or weep up material and place into a suitable disposal container.

7. Handling and Storage

Handling:	Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.
Storage:	Store in a cool, dry place. Store in a tightly closed container.

8. Exposure Controls/Personal Protection

The solid should be handled suitably with ventilation, such as Reverse Flow Dust Cabinet. Where indicated by Risk Assessment control measures may need to be supplemented by suitable Personal Protective Equipment such as gloves, eye protection and air filtering respirator.

9. Physical and Chemical Properties

Appearance and Odor:	Slightly yellow
pH (as supplied)	5.00~6.50
Melting point:	Not available
Boiling point:	Not available
Specific gravity:	Not available

10. Stability and reactivity

Chemical stability:	This material is stable under normal and anticipated ambient storage and handling conditions.
Condition to avoid:	Freeze, heat, and sunlight
Incompatibility with other materials:	Strong oxidizers, acids, bases, heavy metals

11. Toxicological information

No toxicological studies have been performed on this reagent.

Acute exposure may result in respiratory irritation causing coughing, and skin irritation causing redness and pain.

12. Ecological information

There are no likely adverse effects on the aquatic environment in quantities likely to be encountered in normal laboratory practice.

13. Disposal Considerations

Any disposal practice must be in compliance with local, state, and federal laws and regulations (contact local or state environmental agency specific rules).

Sodium azide may react with copper or lead plumbing to form explosive compounds. Even though the reagents contain minute quantities of sodium azide, drains should be well flushed

with large amount of water when discarding the reagents. Incinerate and dispose of waste in accordance with all applicable regulations.

14.Transport information

IATA: Not regulated as a hazardous material.

IMO: Not regulated as a hazardous material.

RID/ADR: Not regulated as a hazardous material.

15.Regulatory information

No information found

16.Other information

The information above 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, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lose profit or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.