

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name: EnzyChrom™ Malate Assay Kit
Item Number: EMAL-100
Manufacturer: BioAssay Systems
3191 Corporate Place
Hayward, CA 94545. USA
Tel: 510-782-9988; Fax: 510-782-1588
Email: info@bioassaysys.com

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 2), H341
Specific target organ toxicity (Category 3), Respiratory system, H335

GHS Label elements, including precautionary statements**Pictogram**

Signal word: Warning

Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.

Precautionary statements

P273 Avoid release to the environment.
P280 Wear protective gloves/clothing and eye/face protection.
P302 + P352: *If on skin:* Wash with plenty of soap and water.
P304 + P340: *If inhaled:* Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338: *If in eyes:* Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a doctor/ physician if you feel unwell.
P332 + P313: *If skin irritation occurs:* Get medical advice/ attention.
P337 + P313: *If eye irritation persists:* Get medical advice/ attention.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

This product contains the following components and mixture of the following substances with non-hazardous additions.

Assay Buffer: 10 mL liquid.

Contains 0.1-5% L-glutamate (CAS#: 142-47-2).

Enzyme A: 120 µL liquid.

Non-hazardous

Enzyme B: 120 µL liquid.

Non-hazardous

NAD/MTT: 1mL liquid.

Contains 1-10% Thiazolyl Blue Tetrazolium Bromide (CAS#: 298-93-1).

Standard: 1 mL liquid.

Contains 0.1-5% L-malic acid (CAS#: 97-67-6).

SECTION 4. FIRST AID MEASURES

Eye: Eye irritation. Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

Skin: Itching or burning of the skin. Immediately flush the skin with plenty of water while removing contaminated clothing and shoes. Get immediate medical attention. Wash contaminated clothing before reuse.

Inhalation: Remove exposed person from source of exposure to fresh air. If not breathing, clear airway and start cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

Ingestion: Get immediate medical attention. Do not induce vomiting unless directed by medical personnel.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing media: water spray, carbon dioxide, dry chemical powder or appropriate foam.

Special firefighting procedures: wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosion hazards: emits toxic fumes under fire conditions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Keep unnecessary people away; isolate hazard area and deny entry. Small spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Large spills: Dike far ahead of liquid spill for later disposal. Do not flush to sewer or waterways. Prevent release to the environment if possible.

SECTION 7. HANDLING AND STORAGE

Keep receptacles tightly sealed and store according to the instructions in the assay protocol.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Follow standard laboratory safety procedures, including wearing chemical safety goggles, face shield, gloves, NIOSH approved respiratory protection and protective clothing. Wash and dry hands.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Refer to Section 3. COMPOSITION/INFORMATION ON INGREDIENTS.

SECTION 10. STABILITY AND REACTIVITY

Thermal Decomposition: no decomposition if used according to specifications. **Dangerous Products of Decomposition:** nitrogen and sulfur oxides. **Dangerous Reactions:** none.

SECTION 11. TOXICOLOGICAL INFORMATION

The toxicological effects of this product have not been thoroughly studied. We recommend handling all chemicals with caution.

L-Glutamate - LD50 Oral rat: 17.3 g/kg; Inhalation: no data available; LD50 Dermal rat: > 2,000 mg/kg; Skin corrosion/irritation rabbit: No skin irritation 4 h.

Thiazolyl Blue Tetrazolium Bromide (CAS#: 298-93-1) - Acute toxicity no data available; Inhalation: no data available; Dermal: no data available; no data available; Skin corrosion/irritation: no data available Serious eye damage/eye irritation; no data available.

L-Malic acid - Acute toxicity: no data available; Dermal: no data available; Skin corrosion/irritation: no data available; Serious eye damage/eye irritation: no data available.

SECTION 12. ECOLOGICAL INFORMATION

Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

SECTION 13. DISPOSAL INFORMATION

Dispose in accordance with local, state or national regulations.

SECTION 14. TRANSPORT INFORMATION

DOT (US) - Not dangerous goods.

IMDG - Not dangerous goods.

IATA - Not dangerous goods.

Additional Transport Information: transport in accordance with local, state and national regulations.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards: Target Organ Effect, Combustible Liquid.

SARA 311/312 Hazards: Fire Hazard, Chronic Health Hazard.

SECTION 16. OTHER INFORMATION

The above information is believed to be accurate, but does not purport to be all inclusive and shall be used only as a guide. BioAssay Systems makes no warranty, express or implied, and assumes no responsibility as to the accuracy or suitability of such information or application to the User's intended purpose or for consequences of its use. The Users should make independent decisions regarding the completeness of information based on all sources available.