MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT INFORMATION

Product Name: S-adenosylmethionine (SAM)

SECTION 2–CHEMICAL INFORMATION

1. Ethanol 10% Cas. #64-17-5
2. Sulfuric Acid 1% Cas. #7664-93-9

SECTION 3–COMPOSITION/ INFORMATION ON INGREDIENT

CHEMICAL NAME: ETHANOL
CHEMICAL FORMULA: C₂H₅OH
CAS No.: 164-17-5 MF: C₂H₆O EC No.: 200-578-6

CAUTION: IRRITANT
Irritating to eyes, respiratory system and skin (rinse immediately with plenty of water, seek medical attention) and respiratory system.

Flammable (USA) Target Organ(s): Nerves, Liver
Highly Flammable (EU) Hygroscopic

SECTION 4 –FIRST AID MEASURES

ORAL EXPOSURE: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE: In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

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. Use water spray to cool fire-exposed containers.

Unusual Fire and Explosions Hazard(s): Flammable Liquid
Vapor may travel considerable distance to source of ignition and flash back.
Container may explode under fire conditions.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

EVACUATE AREA
PROCEDURE(S) OF PERSONAL PRECAUTION(S):
Wear self-contained breathing apparatus, chemical safety goggles, rubber boots, and heavy rubber gloves.
Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP:
Cover with dry-lime, sand or soda ash. Place ion covered containers using non-sparking tools and transport outdoors.
Ventilate area and wash spill site after material pickup is complete. Evacuate area. Shut off all sources of ignition.
SECTION 7 - HANDLING AND STORAGE

Refer to Section 8.

SECTION 8 - EXPOSURE CONTROLS /PPE

Engineering Controls: Safety shower and eye bath. Mechanical exhaust required.  Avoid Breathing Vapor

Personal Protective Equipment:
Respiratory
- NIOSH/MSHA-approved respirator.

Eye:
- Compatible safety goggles.

Hand:
- Compatible chemical-resistant gloves.

General Hygiene Measures:
- Keep away from heat, sparks and open flame.
- Keep tightly closed.
- Store in a dry place.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Flash Point: 62° F  Boiling Point: 78° C  Specific Gravity: 0.794

Swiss Poison Class: FREI

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable

Incompatibilities:
- Strong oxidizing agents, alkali metals
- ammonia and peroxides

Protect from moisture.

Hazardous Decomposition Products:
- Carbon monoxide, Carbon dioxide. Sulfur Oxides

Hazardous Polymerization:
- Will not occur!

SECTION 11- TOXICOLOGICAL INFORMATION

Route of Exposure:

Skin Contact:
- May cause skin irritation
- Harmful if absorbed through skin

Eye Contact:
- Causes eye irritation

Multiple Routes:
- May be harmful by inhalation, ingestion or skin absorption

Material is irritating to mucus membranes and upper respiratory tract.

Can cause CNS depression.

RTECS #: KQ6300000

CHRONICS EFFECTS:
- Nerves, heart, liver.
- This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP or EPA

TARGET ORGAN DATA:
- BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
- BEHAVIORAL (SLEEP)
- BEHAVIORAL (ANTIPSYCHOTIC)
- GASTROINTESTINAL (NAUSEA OR VOMITING)
- LIVER (TUMORS)
- BLOOD (LYMPHOMA INCLUDING HODGKIN'S DISEASE)
- LUNGS THORAX OR RESPIRATION (DYSPNAE)
- SPECIFIC DEV. ABNORMALITIES (CRANIOFACIAL)

IRRITATION DATA:
- SKN-RBT 400 MG OPEN MLD
- SKN-RBT 20 MG/24H MOD
- EYE-RBT 500 MG SEV
- EYE-RBT 500 MG/24H MLD
- EYE-RBT 100 MG/4S RINSE MOD

TOXICITY DATA:
- ORL-CHD LDLD 2 GM/KG
- ORL-HMN LDL 1400 MG/KG
- ORL-RAT LD50 19440 MG/KG
- ORL-RAT LD50 7060 MG/KG
- ORL-RAT LD50 1440 MG/KG
- IHELP-RAT LC50 20000 PPM/10H
- IHELP-RAT LC50 3600 UG/KG
- IVN-RAT LD50 1973 MG/KG
- IVN-MUS LD50 8285 MG/KG

SECTION 12- ECOLOGICAL INFORMATION

Data not yet available
SECTION 13- DISPOSAL CONSIDERATIONS

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state and local environmental regulations.

Contact a licensed professional waste disposal service to dispose of this material.

SECTION 14- TRANSPORT INFORMATION

DOMESTIC (LAND, D.O.T.)

Proper Shipping Name: AEROSOLS, FLAMMABLE N.O.S. (ETHANOL, ISOPROPANOL, METHANOL)
HAZARD CLASS: NONE
UN/NA: UN1950
PACKING GROUP: N/A
INFORMATION REPORTED FOR PRODUCT/SIZE: 11 OZ

INTERNATIONAL (WATER, I.C.A.O.)

Proper Shipping Name: AEROSOLS, FLAMMABLE N.O.S. (ETHANOL, ISOPROPANOL, METHANOL)
HAZARD CLASS: 2.1
UN/NA: UN1950
PACKING GROUP: N/A
INFORMATION REPORTED FOR PRODUCT/SIZE: 11 OZ

INTERNATIONAL (AIR, I.C.A.O.)

Proper Shipping Name: AEROSOLS, FLAMMABLE N.O.S. (ETHANOL, ISOPROPANOL, METHANOL)
HAZARD CLASS: 2.1
UN/NA: UN1950
PACKING GROUP: N/A
INFORMATION REPORTED FOR PRODUCT/SIZE: 11 OZ

SECTION 15- REGULATORY INFORMATION

European Information:
EC INDEX NO: 603-002-00-5
IRRITANT R11
HIGHLY FLAMMABLE S 7
KEEP CONTAINERS CLOSED S 16

Reviews Standards and Regulations:
OEL=MAK
ACGIH TLV: NOT Classifiable as a human carcinogen DTLVS* TLV/BEI, 1999
ACGIH TLV-TWA 1000 PPM DTLVS* TLV/BEI, 1999
EPA FIFRA1988 (B) Pesticide subject to registration or re-registration
OEL-FRANCE: VME 1000 PPM (1900 MG/M3), VLE 5000 PPM (2400 MG/M3)

KEEP AWAY FROM SOURCES OF IGNITION-NO SMOKING

SECTION 16- OTHER INFORMATION

The above information is believed to be correct but does not purport to be allinclusive and shall be used only as a guide.

New England Biolabs shall not be held liable for any damage resulting from handling or from contact with the above product.