

MATERIAL SAFETY DATA SHEET

TRIS/GLYCINE/SDS RUNNING BUFFER

SECTION 1- MATERIAL IDENTIFICATION AND INFORMATION

MANUFACTURER'S NAME: GENOMIC SOLUTIONS, INC.
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ANN ARBOR, MI 48108
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SUBSTANCE: TRIS/GLYCINE/SDS RUNNING BUFFER

TRADE NAMES/SYNONYMS:

80-0079, TRIS/GLYCINE/SDS RUNNING BUFFER, 220.8G; 80-0167, TRIS/GLYCINE/SDS RUNNING BUFFER POWDER, 80-0166, TRIS/GLYCINE/SDS 10X RUNNING BUFFER 3.8 LITERS

CHEMICAL FAMILY: AMINE, ALIPHATIC; ORGANIC SULFATE

CREATION DATE: 6/13/95

REVISED: 2/20/98

SECTION 2-PHYSICAL / CHEMICAL CHARACTERISTICS

COMPONENT	CAS NUMBER	PERCENTAGE
GLYCINE	56-40-6	< 78.0
TRIS (HYDROXYMETHYL) AMINOMETHANE	77-86-1	< 17.0
SODIUM DODECYL SULFATE	151-21-3	< 5.0

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Odorless, white solid

MELTING POINT: not available

SPECIFIC GRAVITY: not available

WATER SOLUBILITY: soluble

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

CERCLA RATINGS (SCALE 0-3): HEALTH = 3 FIRE = 1 REACTIVITY = 0 PERSISTENCE = 1

NFPA RATINGS (SCALE 0-4): HEALTH = 2 FIRE = 1 REACTIVITY = 0

EMERGENCY OVERVIEW:

Odorless, white solid. Causes respiratory tract, skin and eye irritation. May form flammable or explosive dust-air mixtures. Avoid breathing dust. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Avoid creation of dust. Wash thoroughly after handling. Use only with adequate ventilation.

POTENTIAL HEALTH EFFECTS

INHALATION:

Short Term Effects: May cause irritation. Additional effects may include sneezing, coughing, chest pain and difficulty breathing.

Long Term Effects: No information is available.

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SKIN CONTACT:

Short Term Effects: May cause irritation.

Long Term Effects: In addition to effects from short term exposure, may cause reproductive effects.

EYE CONTACT:

Short Term Effects: May cause irritation. Additional effects may include burns and eye damage.

Long Term Effects: Same effects as short term exposure.

INGESTION:

Short Term Effects: May cause gastrointestinal irritation. Additional effects may include burns, vomiting, digestive disorders and weakness.

Long Term Effects: May cause diarrhea.

CARCINOGEN STATUS:

OSHA: N

NTP: N

IARC: N

FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD:

The fire hazard for this product has not been determined. The hazard(s) of the component(s) with the most severe hazard(s) are described below.

Slight fire hazard when exposed to heat or flame. Dust-air mixtures may ignite or explode.

EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water spray or regular foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

For larger fires, use water spray, fog or regular foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

FIREFIGHTING:

Move container from fire area if you can do it without risk. Do not scatter spilled material with high-pressure water streams. Dike fire-control water for later disposal (1993 Emergency Response Guidebook, RSPA P 5800.6, Guide Page 31).

Use agents suitable for type of surrounding fire. Avoid breathing hazardous vapors, keep upwind.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition may release toxic and/or hazardous gases.

SECTION 4- REACTIVITY HAZARD DATA

STABILITY AND REACTIVITY

REACTIVITY:

Reactivity data is not available for this product; however, the following data apply to all the components which compose at least 1% of the product. Stable under normal temperatures and pressures.

CONDITIONS TO AVOID: no data available

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INCOMPATIBILITIES:

GLYCINE:

ALKALIES (STRONG): Incompatible
OXIDIZERS (STRONG): Fire and explosion date

TRIS (HYDROXYMETHYL) AMINOMETHANE:

ACIDS: Vigorous reaction
ALKALIES (STRONG): Incompatible
ALUMINUM: Corrosive
BRASS: Corrosive
COPPER: Corrosive
OXIDIZERS (STRONG): Fire and explosion hazard

DODECYL SODIUM SULFATE (SODIUM LAURYL SULFATE):

OXIDIZERS (STRONG): Fire and explosion hazard

HAZARDOUS DECOMPOSITION:

Thermal decomposition may release toxic and/or hazardous gases.

POLYMERIZATION:

Polymerization data is not available for this product; however, the following data apply to all the components which compose at least 1% of the product.

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 5 - HEALTH HAZARD DATA

EMERGENCY FIRST AID

INHALATION:

First Aid - Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT:

First Aid - Remove contaminated clothing and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

EYE CONTACT:

First Aid - Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

INGESTION:

First Aid - If vomiting occurs, keep head lower than hips to help prevent aspiration. Treat symptomatically and supportively. Get medical attention if needed.

TOXICOLOGY INFORMATION

GLYCINE:

TOXICITY DATA:

7930 mg/kg oral-rat LD50	2600 mg/kg intravenous-rat LD50
4920 mg/kg oral-mouse LD50	2370 mg/kg intravenous-mouse LD50
5200 mg/kg subcutaneous-rat LD50	3000 mg/kg intravenous-cat LDLo

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5060 mg/kg subcutaneous-mouse LD50

4450 mg/kg intraperitoneal-mouse LD50

CARCINOGEN STATUS: None.

ACUTE TOXICITY LEVEL: Slightly toxic by ingestion.

TARGET EFFECTS DATA: No data available.

TRIS (HYDROXYMETHYL) AMINOMETHANE:

TOXICITY DATA:

5900 mg/kg oral-rat LD50

1000 mg/kg oral-rabbit LDLo

1800 mg/kg intravenous-rat LD50

1210 mg/kg intravenous-mouse LD50

CARCINOGEN STATUS: None.

LOCAL EFFECTS: Irritant- inhalation, skin, eye.

ACUTE TOXICITY LEVEL: Slightly toxic by ingestion.

TARGET EFFECTS: No data available.

SODIUM DODECYL SULFATE (SODIUM LAURYL SULFATE):

IRRITATION DATA:

250 mg/24 hours skin-human mild

25 mg/24 hours skin-human mild

50 mg/24 hours skin-rabbit severe

25 mg/24 hours skin-rabbit moderate

250 mg/24 hours skin-rabbit moderate

10 mg/24 hours skin-rabbit

50 mg/24 hours skin-rabbit mild

25 mg/24 hours skin-mouse moderate

25 mg/24 hours skin-dog mild

25 mg/24 hours skin-guinea pig mild

25 mg/24 hours skin-pig mild

100 mg/24 hours eye-rabbit moderate

250 µg eye-rabbit mild

2 mg eye-rabbit

10 mg eye-rabbit moderate

TOXICITY DATA:

1288 mg/kg oral-rat LD50

118 mg/kg intravenous-rat LD50

118 mg/kg intravenous-mouse LD50

210 mg/kg intraperitoneal-rat LD50

250 mg/kg intraperitoneal-mouse LD50

mutagenic data (RTECS)

reproductive effects data (RTECS)

CARCINOGEN STATUS: None.

LOCAL EFFECTS: Irritant- skin, eye.

ACUTE TOXICITY LEVEL: Moderately toxic by ingestion.

TARGET EFFECTS: No data available.

HEALTH EFFECTS

INHALATION:

GLYCINE:

Acute Exposure: Inhalation of dust may cause coughing.

Chronic Exposure: No data available.

TRIS (HYDROXYMETHYL) AMINOMETHANE:

IRRITANT.

Acute Exposure: May cause irritation of the mucous membranes with tightness and pain in the chest, coughing, and difficulty breathing.

Chronic Exposure: No data available.

SODIUM DODECYL SULFATE (SODIUM LAURYL SULFATE):

Acute Exposure: Inhalation of dust may cause irritation, resulting in coughing and sneezing.

Chronic Exposure: No data available.

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SKIN CONTACT:

GLYCINE:

Acute Exposure: May cause irritation. Skin absorption may occur.

Chronic Exposure: Prolonged or repeated contact may cause irritation.

TRIS (HYDROXYMETHYL) AMINOMETHANE:

IRRITANT.

Acute Exposure: May cause irritation with redness, pain, and possibly sensitization.

Chronic Exposure: May cause dermatitis due to irritation or sensitization.

SODIUM DODECYL SULFATE (SODIUM LAURYL SULFATE):

IRRITANT.

Acute Exposure: May cause irritation. Solutions may cause development of contact dermatitis in some individuals, with burning, redness, tightening of the skin, leathery texture, painful fissures, and lamellar exfoliation.

Chronic Exposure: Repeated or prolonged exposure may cause dermatitis, and comedones. Reproductive effects have been reported in animals.

EYE CONTACT:

GLYCINE:

Acute Exposure: Contact may cause redness and irritation.

Chronic Exposure: No data available.

TRIS (HYDROXYMETHYL) AMINOMETHANE:

IRRITANT.

Acute Exposure: May cause irritation with redness, pain, and possibly corneal damage.

Chronic Exposure: Prolonged or repeated exposure to irritants may cause conjunctivitis.

SODIUM DODECYL SULFATE (SODIUM LAURYL SULFATE):

IRRITANT.

Acute Exposure: Dust may cause irritation, and possibly burns. Experiments indicate that it is more irritating to rabbits eyes than to monkeys or humans.

Chronic Exposure: Repeated or prolonged exposure to irritants may cause conjunctivitis.

INGESTION:

GLYCINE:

Acute Exposure: Ingestion of large quantities may cause nausea.

Chronic Exposure: When fed to chicks, large amounts of glycine have been found to cause a peculiar enlargement of the eyeballs.

TRIS (HYDROXYMETHYL) AMINOMETHANE:

Acute Exposure: May cause gastrointestinal irritation and possibly burns to the mouth and stomach. Large doses to laboratory animals caused weakness, collapse and death. The estimated fatal dose is 50 grams.

Chronic Exposure: No data available.

SODIUM DODECYL SULFATE (SODIUM LAURYL SULFATE):

Acute Exposure: Ingestion of large doses may cause stomach irritation, nausea, and vomiting.

Chronic Exposure: Repeated administration produced diarrhea, bloating, and some deaths in animals.

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SECTION 6 - CONTROL AND PROTECTIVE MEASURES

EXPOSURE LIMITS:

No occupational exposure limits established by OSHA, ACGIH, or NIOSH.

VENTILATION:

Provide local exhaust ventilation. Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.

EYE PROTECTION:

Employee must wear splash-proof or dust-resistant safety goggles and a faceshield to prevent contact with this substance.

EMERGENCY WASH FACILITIES:

Where there is any possibility that an employee's eyes and/or skin may be exposed to this substance, the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use.

CLOTHING:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

GLOVES:

Employee must wear appropriate protective gloves to prevent contact with this substance.

RESPIRATOR:

The following respirators are recommended based on information found in the physical data, toxicity and health effects sections. They are ranked in order from minimum to maximum respiratory protection.

The specific respirator selected must be based on contamination levels found in the work place, must be based on the specific operation, must not exceed the working limits of the respirator and must be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA).

Any dust and mist respirator.

Any air-purifying respirator with a high-efficiency particulate filter.

Any powered air-purifying respirator with a dust and mist filter.

Any powered air-purifying respirator with a high-efficiency particulate filter.

Any type 'C' supplied-air respirator operated in the pressure-demand or other positive pressure or continuous-flow mode.

Any self-contained breathing apparatus.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

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SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & USE/LEAK PROCEDURES

ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL:

Sweep up and place in suitable clean, dry containers for reclamation or later disposal. Do not flush spilled material into sewer. Keep unnecessary people away.

HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this substance. Store away from incompatible substances.

DISPOSAL INFORMATION

Observe all federal, state and local regulations when disposing of this substance.

SECTION 8 - TRANSPORTATION AND REGULATORY INFORMATION

TRANSPORTATION INFORMATION:

No classification currently assigned.

REGULATORY INFORMATION:

TSCA STATUS: Y
CERCLA SECTION 103 (40CFR302.4): N
SARA SECTION 302 (40CFR355.30): N
SARA SECTION 304 (40CFR355.40): N
SARA SECTION 313 (40CFR372.65): N
OSHA PROCESS SAFETY (29CFR1910.119): N
CALIFORNIA PROPOSITION 65: N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40 CFR 370.21)

ACUTE HAZARD: Y
CHRONIC HAZARD: N
FIRE HAZARD: N
REACTIVITY HAZARD: N
SUDDEN RELEASE HAZARD: N

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