

# MATERIAL SAFETY DATA SHEET

## TRICINE

### SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

**MANUFACTURER'S NAME:** GENOMIC SOLUTIONS , INC.  
**ADDRESS:** 4355 VARSITY DR.  
ANN ARBOR, MI 48108  
**TELEPHONE NUMBER:** (734 975-4800  
**US EMERGENCY PHONE:** (800) 535-5053  
**INTERNATIONAL EMERGENCY PHONE:** 1(352) 323-3500 (Call Collect)

**CAS NUMBER:** 5704-04-1

**SUBSTANCE:** TRICINE

**TRADE NAMES/SYNONYMS:**

80-0163, TRICINE, 500G; 80-0164, TRICINE, 2500G; 70-2881, TRICINE POWDER; GLYCINE, N-(2-HYDROXY-1,1-BIS (HYDROXYMETHYL)ETHYL)-; N-(2-HYDROXY-1,1-BIS (HYDROXYMETHYL)ETHYL) GLYCINE; N-(TRIS(HYDROXYMETHYL) METHYL) GLYCINE; C6H13NO5.

**CHEMICAL FAMILY:** HYDROXYL, ALIPHATIC; AMINO ACID DERIVATIVE

**CREATION DATE:** 6/21/95

**REVISED:** 2/20/98

### SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

**COMPONENT:** N-(TRIS(HYDROXYMETHYL)METHYL)GLYCINE

**CAS NUMBER:** 5704-04-1

**PERCENTAGE:** 100

**OTHER CONTAMINANTS:** NONE

#### PHYSICAL AND CHEMICAL PROPERTIES

**DESCRIPTION:** White crystals

**MOLECULAR WEIGHT:** 179.17

**MOLECULAR FORMULA:** (H-O-C-H<sub>2</sub>)<sub>3</sub>-C-N-H-C-H<sub>2</sub>-C-O<sub>2</sub>-H

**MELTING POINT:** 360-362 F (182-184 C)

**BOILING POINT:** N/A

**VAPOR PRESSURE:** negligible

**VAPOR DENSITY:** N/A

**SPECIFIC GRAVITY:** not available

**WATER SOLUBILITY:** SOLUBLE

**VOLATILITY:** nil

**pH:** N/A

**ODOR THRESHOLD:** no data available

**EVAPORATION RATE:** (N-butyl acetate=1) negligible

# MATERIAL SAFETY DATA SHEET

## TRICINE

### SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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

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

#### **EMERGENCY OVERVIEW:**

White crystals. May be irritating to eyes. May form flammable or explosive dust-air mixtures. Avoid contact with eyes, skin and clothing. Avoid creation of dust. Wash thoroughly after handling.

#### **POTENTIAL HEALTH EFFECTS**

##### **INHALATION:**

*Short Term Effects:* No information is available.

*Long Term Effects:* No information is available.

##### **SKIN CONTACT:**

*Short Term Effects:* No information is available.

*Long Term Effects:* No information is available.

##### **EYE CONTACT:**

*Short Term Effects:* May cause irritation.

*Long Term Effects:* No information is available.

##### **INGESTION:**

*Short Term Effects:* No information is available.

*Long Term Effects:* No information is available.

##### **CARCINOGEN STATUS:**

**OSHA:** N

**NTP:** N

**IARC:** N

#### **FIRE FIGHTING MEASURES**

##### **FIRE AND EXPLOSION HAZARD:**

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.

FLASH POINT: no data available

LOWER FLAMMABLE LIMIT: no data available

UPPER FLAMMABLE LIMIT: no data available

AUTOIGNITION: no data available

##### **HAZARDOUS COMBUSTION PRODUCTS:**

Thermal decomposition products may include toxic oxides of carbon and nitrogen.

# MATERIAL SAFETY DATA SHEET

## TRICINE

### SECTION 4 - REACTIVITY HAZARD DATA

#### STABILITY AND REACTIVITY

**REACTIVITY:**

Stable under normal temperatures and pressures.

**CONDITIONS TO AVOID:**

May burn but does not ignite readily. Avoid contact with strong oxidizers, excessive heat, sparks, or open flame.

**INCOMPATIBILITIES:**

N-(TRIS(HYDROXYMETHYL)METHYL)GLYCINE: OXIDIZERS (STRONG): Fire and explosion hazard.

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products may include toxic oxides of carbon and nitrogen.

**POLYMERIZATION:**

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.

**NOTE TO PHYSICIAN****ANTIDOTE:**

No specific antidote. Treat symptomatically and supportively.

#### TOXICOLOGY INFORMATION

N-(TRIS(HYDROXYMETHYL)METHYL)GLYCINE:

**CARCINOGEN STATUS:** None

**LOCAL EFFECTS:** No data available

**ACUTE TOXICITY LEVEL:** NO DATA AVAILABLE

**TARGET EFFECTS:** No data available

# MATERIAL SAFETY DATA SHEET

## TRICINE

### HEALTH EFFECTS

#### **INHALATION:**

*Acute Exposure:* No data available.

*Chronic Exposure:* No data available.

#### **SKIN CONTACT:**

*Acute Exposure:* No data available.

*Chronic Exposure:* No data available.

#### **EYE CONTACT:**

*Acute Exposure:* May cause transient irritation.

*Chronic Exposure:* No data available.

#### **INGESTION:**

*Acute Exposure:* No data available.

*Chronic Exposure:* No data available.

### **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 to prevent eye contact with this substance.

#### **EMERGENCY WASH FACILITIES:**

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain 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.

# MATERIAL SAFETY DATA SHEET

## TRICINE

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.

## 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:	N
CHRONIC HAZARD:	N
FIRE HAZARD:	N
REACTIVITY HAZARD:	N
SUDDEN RELEASE HAZARD:	N

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