



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(800) 292-5678

Date revised: 02-11-04  
Emergency Telephone Number: (800) 424-9300  
Agent: CHEMTREC

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### Section 1 – Product and Company Information

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Product Name: AGF3000/STAR Tissue DNA - Tissue Digestion Solution A  
Product Number: AGF-M1

Company: AutoGen, Inc.  
Address: 84 October Hill Rd.  
Holliston, MA 01746  
Phone: (800) 292-5678  
Fax: (508) 429-9765

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### Section 2 – Composition/Information on Ingredients

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<u>Chemical name</u>	<u>CAS #</u>
Tris	77-86-1

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### Section 3 - Hazards Identification

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#### Emergency overview

Appearance: white solid.  
Warning! Causes eye, skin, and respiratory tract irritation. Hygroscopic (absorbs moisture from the air).  
Target Organs: Respiratory system, eyes, skin.

#### Potential Health Effects

Eye: Causes eye irritation.  
Skin: Causes skin irritation. May be harmful if absorbed through the skin.  
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.  
Inhalation: Causes respiratory tract irritation. May be harmful if inhaled.  
Chronic: No information found.



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#### **Section 4- First Aid Measures**

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Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

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#### **Section 5- Fire Fighting Measures**

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General Information: As in any fire, wear a self-contained breathing apparatus in pressured demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 1

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#### **Section 6 – Accidental Release Measures**

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General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

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#### **Section 7 – Handling and Storage**

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Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.

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

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#### **Section 8 – Exposure controls/Personal Protection**

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Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits: none listed

OSHA Vacated PELs: Tris(hydroxymethyl)aminomethane: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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## Section 9 – Physical and Chemical Properties

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Physical State: Solid

Appearance: white

Odor: odorless

pH: 10-11.5 (5% aq.sol.)

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 219 - 220 deg C @ 10 mmHg

Freezing/Melting Point: > 168.5 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: Not available.

Molecular Formula: C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>

Molecular Weight: 121.14

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## Section 10 – Stability and Reactivity

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Chemical Stability: Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Incompatible materials, dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents, bases, aluminum, brass, copper.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

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## Section 11 – Toxicological Information

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RTECS#:

CAS# 77-86-1: TY2900000



LD50/LC50:

CAS# 77-86-1:

Oral, rat: LD50 = 5900 mg/kg;

Carcinogenicity:

CAS# 77-86-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

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## Section 12 – Ecological Information

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Ecotoxicity: No data available. No information available.

Environmental: No information found.

Physical: No information found.

Other: Do not empty into drains.

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## Section 13 – Disposal Considerations

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Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

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## Section 14 – Transport Information

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Not Regulated.

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## Section 15 – Regulatory Information

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US FEDERAL

TSCA

CAS# 77-86-1 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.



SARA Codes

CAS # 77-86-1: immediate.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 77-86-1 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 77-86-1: 1

Canada - DSL/NDSL

CAS# 77-86-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

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## Section 16 – Other Information

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### Warranty

The factual information contained in this material safety data sheet is believed to be accurate and reflects, to the best of our knowledge, the currently available data pertaining to the chemicals. This information may be incomplete and is used only as a guide. Users are encouraged to investigate the suitability of the information with respect to their application. AutoGen, Inc. assumes no responsibility resulting from the use or handling of this compound.



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(800) 292-5678

**Date revised:** 02-11-04  
**Emergency Telephone Number:** (800) 424-9300  
**Agent:** CHEMTREC

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### Section 1 – Product and Company Information

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**Product Name:** AGF3000/STAR Tissue DNA - Tissue Digestion Solution B  
**Product Number:** AGF-M2

**Company:** AutoGen, Inc.  
**Address:** 84 October Hill Rd.  
Holliston, MA 01746  
**Phone:** (800) 292-5678  
**Fax:** (508) 429-9765

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### Section 2 – Composition/Information on Ingredients

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<u>Chemical name</u>	<u>CAS #</u>
Tris	77-86-1
EDTA	6381-92-6
Sodium chloride	7647-14-5
N-Lauroylsarcosine sodium	137-16-6
Water	

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### Section 3 - Hazards Identification

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**HAZARD DESCRIPTION:**

**CAUTION! CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.**

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation.  
Ingestion.

**Potential Acute Health Effects**

**Eyes** Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

**Skin** Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.



May be hazardous in case of skin contact (permeator).

Inhalation Hazardous in case of inhalation (lung irritant). May be hazardous in case of inhalation.

Ingestion May be hazardous in case of ingestion.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure:

Repeated or prolonged exposure is not known to aggravate medical condition.

CLASSIFICATION SYSTEM:

The classification was made according to the latest editions of international substances lists.

NFPA rating (scale 0-4)

Health=1 (N-Lauroylsarcosine sodium)

Fire=0

Reactivity=0

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## Section 4- First Aid Measures

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GENERAL INFORMATION

Immediately remove any clothing soiled by the substance .Wash affected area with copious amounts of water for at least 15 minutes and then soap and water. Speed in removing material from skin is extremely important. Use safety shower.

EYE CONTACT:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

SKIN CONTACT:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

INHALATION:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

INGESTION

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

Loosen tight clothing such as a collar, tie, belt or waistband.

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## Section 5- Fire Fighting Measures

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FLAMMABILITY OF THE PRODUCT



Non-flammable.

#### AUTO-IGNITION TEMPERATURE

Not applicable.

#### FLASH POINTS

Not applicable.

#### FLAMMABLE LIMITS

Not applicable.

#### PRODUCTS OF COMBUSTION

Not available.

#### FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCE

Not applicable.

#### EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES

Risks of explosion of the product in presence of static discharge: No.

Risks of explosion of the product in presence of mechanical impact: No.

#### FIRE FIGHTING MEDIA AND INSTRUCTIONS

Water spray

Carbon dioxide, dry chemical powder, or appropriate foam

#### PROTECTIVE CLOTHING (FIRE)

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### SPECIAL REMARKS ON FIRE HAZARDS

Not available.

#### SPECIAL REMARKS ON EXPLOSION HAZARDS

Emit toxic fumes under fire conditions.

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### **Section 6 – Accidental Release Measures**

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#### SMALL SPILL AND LEAK

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

#### LARGE SPILL AND LEAK

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

#### SPILL KIT INFORMATION

No specific spill kit required for this product.

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### **Section 7 – Handling and Storage**

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#### HANDLING:



Do not ingest. Avoid breathing vapors or spray mists. Keep container closed. Do not get in eyes, on skin, or on clothing.

**STORAGE:**

Keep receptacle with tightly sealed, keep container in a cool, well-ventilated area.

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## **Section 8 – Exposure controls/Personal Protection**

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### **ENGINEERING CONTROLS**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### **PERSONAL PROTECTION**

Eyes Splash goggles.

Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### **EXPOSURE LIMITS**

Tris(hydroxymethyl)aminomethane: Not available.

EDTA di-Sodium dehydrate: Not available.

Sodium chloride: Not available

N-Lauroylsarcosine sodium: Not available.

Water: Not available.

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## **Section 9 – Physical and Chemical Properties**

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Odor No.

Color Colorless.

### **APPEARANCE:**

Physical State and Appearance Liquid.

Molecular Weight Not applicable.

Molecular Formula Not applicable.

pH Not available.

Boiling/Condensation Point The lowest known value is 99.9°C (211.8°F) (Water).

Melting/Freezing Point May start to solidify at -0.1°C (31.8°F) based on data for: Water.

Specific Gravity Not available.

Vapor Pressure Not available.

Vapor Density Not available.

Odor Threshold Not available.

Evaporation Rate 0.36 (Water) compared to (n-BUTYL ACETATE=1)

LogKow Not available.

Solubility Soluble in water.



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## Section 10 – Stability and Reactivity

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### STABILITY/REACTIVITY

Stable.

Materials to avoid: Strong oxidizing agents.

### CONDITIONS OF INSTABILITY

Not available.

### INCOMPATIBILITY WITH VARIOUS SUBSTANCE

Not available.

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## Section 11 – Toxicological Information

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### RTECS Number:

Tris(hydroxymethyl)aminomethane: OM2800000

Sodium Chloride: VZ4725000

EDTA di-Sodium Dihydrate: Not available.

N-Lauroylsarcosine sodium: Not available.

Water: ZC0110000

Toxicity: LD50: Not available.

LC50: Not available.

Chronic Effects on Humans: Not available.

Acute Effects on Humans: Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of skin contact (permeator). Hazardous in case of inhalation (lung irritant). May be hazardous in case of inhalation. May be hazardous in case of ingestion.

Synergetic Products (Toxicologically): Not available.

Irritancy Draize Test: Not available.

Sensitization: Not available.

Carcinogenic Effects: This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System: Not available.

Teratogenic Effects: Not available.

Mutagenic Effects: Not available.

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## Section 12 – Ecological Information

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Ecotoxicity: Not available.

BOD5 and COD: Not available.

Toxicity of the Products of Biodegradation

The product of degradation are less toxic than the product itself.

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## Section 13 – Disposal Considerations

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EPA Waste Number: Not available.

Treatment



Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

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## Section 14 – Transport Information

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### DOT CLASSIFICATION

Proper Shipping Name: Chemical, N.O.S.

### IMO/IMDGCLASSIFICATION

Proper Shipping Name: Chemical, N.O.S.

### TDG CLASSIFICATION

Not available

### ICAO/IATA CLASSIFICATION

Chemical, N.O.S.

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## Section 15 – Regulatory Information

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### U.S. FEDERAL REGULATIONS

TSCA 8(b) inventory: Tris(hydroxymethyl)aminomethane; Sodium Chloride; EDTA di-Sodium Dihydrate; N-Lauroylsarcosine sodium; Water

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found. SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: Tris(hydroxymethyl)aminomethane; Sodium Chloride; EDTA di-Sodium Dihydrate; N-Lauroylsarcosine sodium; Water

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

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## Section 16 – Other Information

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This bulletin is for your guidance and is based upon information and tests believed to be reliable. Kurabo makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(508) 429-5965

**Date revised:** 09-04-06  
**Emergency Telephone Number:** (800) 424-9300  
**Agent:** CHEMTREC

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### Section 1 – Product and Company Information

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**Product Name:** AGF3000/STAR Tissue DNA – Resuspension Solution A  
**Product Number:** AGF-R3

**Company:** AutoGen, Inc.  
**Address:** 84 October Hill Rd.  
Holliston, MA 01746  
**Phone:** (508) 429-5965  
**Fax:** (508) 429-9765

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### Section 2 – Composition/Information on Ingredients

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<u>Chemical name</u>	<u>CAS #</u>
Tris-HCl	77-86-1
EDTA	6381-92-6
Water	7732-18-5

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### Section 3 - Hazards Identification

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#### Emergency Overview

CAUTION! Handling care generally in keeping with safe laboratory practices is recommended.

Routes of Entry

#### Potential Acute Health Effects

Eyes: No known acute effects of this product resulting from eye contact.  
Skin: No known acute effects of this product resulting from skin contact.  
Inhalation: No known acute effects of this product resulting from inhalation.  
Ingestion: No known acute effects of this product resulting from ingestion.

#### Potential Chronic Health Effects

Carcinogenic Effects: This material is not known to cause cancer in animals or humans.

Additional information: See Toxicological Information (section 11)



Medical Conditions Aggravated by Overexposure:

Repeated or prolonged exposure is not known to aggravate medical condition.

Hazard Description:

Harmful if swallowed or inhaled. Causes irritation to skin, eyes and respiratory tract.

NFPA Rating (0-4):

Fire hazard	0
Health	0
Reactivity	0
Specific hazard	0

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**Section 4- First Aid Measures**

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General Information:

Immediately remove any clothing soiled by the substance .Wash affected area with copious amounts of water for at least 15 minutes and then soap and water. Speed in removing material from skin is extremely important. Use safety shower.

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.

Loosen tight clothing such as a collar, tie, belt or waistband.

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**Section 5- Fire Fighting Measures**

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Flammability of the Product:

Non-flammable.

Auto-Ignition Temperature:

Not applicable.

Flash Points

Not applicable.

Flammable Limits

Not applicable.



Products of Combustion

Not available.

Fire Hazards in Presence of Various Substances

Not applicable.

Explosion Hazards in Presence of Various Substances

Risks of explosion of the product in presence of static discharge: No.

Risks of explosion of the product in presence of mechanical impact: No.

Fire Fighting Media and Instructions

Not applicable.

Protective Clothing (Fire)

Not applicable.

Special Remarks on Fire Hazards

Not available.

Special Remarks on Explosion Hazards

May emit toxic fumes under fire conditions.

Thermal decomposition may release toxic and/or hazardous gases. (EDTA di-Sodium Dihydrate)

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**Section 6 – Accidental Release Measures**

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Small Spill and Leak

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Spill Kit Information

No specific spill kit required for this product.

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**Section 7 – Handling and Storage**

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Handling:

Avoid breathing vapors or spray mists. Avoid contact with skin and eyes. Do not ingest.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area.

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**Section 8 – Exposure controls/Personal Protection**

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Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.



#### Personal Protection

Eyes: Safety glasses.  
Body: Lab coat.  
Respiratory: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.  
Hands: Gloves.  
Feet: Not applicable.

#### Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

#### Exposure Limits

Tris (hydroxymethyl) aminomethane: Not available.  
EDTA di-Sodium Dihydrate: Not available.  
Water: Not available.

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### **Section 9 – Physical and Chemical Properties**

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Odor: Not available.  
Color: Colorless.

#### Appearance:

Physical State and Appearance: Liquid.  
Molecular Weight: Not applicable.  
Molecular Formula: Not applicable.  
pH: Not available.  
Boiling/Condensation Point: The lowest known value is 99.9°C (211.8°F) (Water).  
Melting/Freezing Point: May start to solidify at -0.1°C (31.8°F) based on data for: Water.  
Specific Gravity: Not available.  
Vapor Pressure: Not available.  
Vapor Density: Not available.  
Odor Threshold: Not available.  
Evaporation Rate: 0.36 (Water) compared to (n-BUTYL ACETATE=1)  
LogKow: Not available.  
Solubility: Soluble in water.

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### **Section 10 – Stability and Reactivity**

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#### Stability/Reactivity

The product is stable.

#### Conditions of Instability

Not available.

#### Incompatibility with Various Substances

Not available.

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## Section 11 – Toxicological Information

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RTECS Number:

Tris (hydroxymethyl) aminomethane: TY2900000

EDTA di-Sodium Dihydrate: Not available.

Water: ZC0110000

Toxicity

LD50: Not available.

LC50: Not available.

Chronic Effects on Humans: Not available.

Acute Effects on Humans: Not available.

Synergetic Products (Toxicologically): Not available.

Irritancy Draize Test: Not available.

Sensitization: Not available.

Carcinogenic Effects: This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System: Not available.

Teratogenic Effects: Not available.

Mutagenic Effects: Not available.

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## Section 12 – Ecological Information

---

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

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## Section 13 – Disposal Considerations

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EPA Waste Number: Not available.

Treatment: Material does not have an EPA Waste Number and is not a listed waste; however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

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## Section 14 – Transport Information

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DOT Classification

Proper Shipping Name: CHEMICALS, N.O.S.

IMO/IMDG Classification

Proper Shipping Name: CHEMICALS, N.O.S.

TDG Classification

Not available

ICAO/IATA Classification

CHEMICALS, N.O.S.

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## Section 15 – Regulatory Information

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### U.S. Federal Regulations

TSCA 8(b) inventory: Tris (hydroxymethyl) aminomethane; EDTA di-Sodium Dihydrate; Water

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found. SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada): Not controlled under WHMIS (Canada).

CEPA DSL: Tris (hydroxymethyl) aminomethane; Water

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

---

## Section 16 – Other Information

---

This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(508) 429-5965

Date revised: 03-01-06  
Emergency Telephone Number: (800) 424-9300  
Agent: CHEMTREC

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### Section 1 – Product and Company Information

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Product Name: AGF Star/3000 Tissue DNA – DNA Precipitation Solution A  
Product Number: AGF-R4

Company: AutoGen, Inc.  
Address: 84 October Hill Rd.  
Holliston, MA 01746  
Phone: (508) 429-5965  
Fax: (508) 429-9765

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### Section 2 – Composition/Information on Ingredients

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<u>Chemical name</u>	<u>CAS #</u>
Isopropanol	66-63-0

---

### Section 3 - Hazards Identification

---

Dangerous Components:  
UN Number: 1993  
Chemical: Isopropanol  
Class: 3, Flammable liquid

Emergency Overview  
Flammable liquid and vapor.  
Vapor may cause flash fire.

Hazard Description:  
Harmful if swallowed or inhaled. Causes irritation to skin, eyes and respiratory tract.



NFPA Rating (0-4)

Fire hazard	3
Health	1
Reactivity	0
Specific hazard	0

---

**Section 4- First Aid Measures**

---

General Information:

Immediately remove any clothing soiled by the substance .Wash affected area with copious amounts of water for at least 15 minutes and then soap and water. Speed in removing material from skin is extremely important. Use safety shower.

Eye Contact:

Rinse opened eye for at least 15 minutes under running water. Then consult at a physician.

Skin Contact:

Immediately wash with water and soap and rinse thoroughly. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Call physician immediately.

Inhalation:

Supply fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call physician immediately.

Swallowing:

If conscious, drink water and induce vomiting immediately as directed by medical personal. Never give an unconscious person anything to ingest.

---

**Section 5- Fire Fighting Measures**

---

Flammability of the Product

Product will burn

Auto-Ignition Temperature

399.05 C

Flash Points

Open cup: 11.9 C



Suitable Extinguishing Agents:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.

Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

---

## **Section 6 – Accidental Release Measures**

---

Small Spill and Leak

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

---

## **Section 7 – Handling and Storage**

---

Handling:

Keep away from heat, sparks and flame. Keep container closed. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not breathe gas/fumes/vapor/spray.

Storage:

Keep container in a cool, well-ventilated area.

---

## **Section 8 – Exposure controls/Personal Protection**

---

Personal Protection

Use chemical safety goggles, protective gloves or vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Engineering Controls



Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

#### Exposure Limits

ACGIH (United States, 1994).

STEL: 1230 mg/m<sup>3</sup>, 500 ppm

TWA: 983 mg/m<sup>3</sup> Period: 10 hour(s), 400 ppm Period: 10 hour(s).

NIOSH REL (United States, 1994).

STEL: 1225 mg/m<sup>3</sup>, 500 ppm

TWA: 980 mg/m<sup>3</sup> Period: 10 hour(s), 400 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989).

STEL: 1225 mg/m<sup>3</sup>, 500 ppm

TWA: 980 mg/m<sup>3</sup>, 400 ppm ON MATERIALS

---

### **Section 9 – Physical and Chemical Properties**

---

#### Appearance:

Colorless liquid with characteristic odor.

Boiling point: 82.4 C

Melting point: -89.5 C

Specific gravity: 0.786 (water=1)

Solubility in /Miscibility with water: Soluble in water.

Vapor density: 2.07

Vapor pressure: 32.4 (20 C) mmHg

---

### **Section 10 – Stability and Reactivity**

---

#### Stability/Reactivity

Stable under ordinary handling conditions.

#### Incompatibility with Various Substances

Highly reactive with oxidizing agents.

---

### **Section 11 – Toxicological Information**

---

#### CAS NO. Designation of Materials:

67-63-0 Isopropyl alcohol

Acute toxicity: oral mouse LD<sub>50</sub>, 4,960 mg/kg

Caustic effect on skin, mucous membranes and eye.

#### Acute Toxicity

Oral LD<sub>50</sub>: mouse 3,600mg/kg

Dermal LD<sub>50</sub>: rabbit 12,800mg/kg



### Acute Effects on Humans

Extremely hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin. Hazardous in case of inhalation. Hazardous in case of ingestion.

---

## **Section 12 – Ecological Information**

---

This product itself and its products of degradation are not toxic.

---

## **Section 13 – Disposal Considerations**

---

Incineration, fuels blending or recycle. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

---

## **Section 14 – Transport Information**

---

### DOT Classification

Proper Shipping Name: ISOPROPANOL

Hazard Class: 3

UN number: UN1993

Packing Group: II

### IMO/IMDG Classification

Proper Shipping Name: ISOPROPANOL

Hazard Class: 3

UN number: UN1993

Packing Group: II

### TDG Classification

Not available

### ICAO/IATA Classification

Proper Shipping Name: ISOPROPANOL

Hazard Class: 3

UN number: UN1993

Packing Group: II

---

## **Section 15 – Regulatory Information**

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### U.S. Federal Regulations

TSCA 4(a) final test rules: ISOPROPYL ALCOHOL



TSCA 8(b) inventory: ISOPROPYL ALCOHOL

TSCA 8(d) H and S data reporting: ISOPROPYL ALCOHOL: 1986

TSCA 12(b) one time export: ISOPROPYL ALCOHOL

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: ISOPROPYL ALCOHOL

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

ISOPROPYL ALCOHOL: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

SARA 313 toxic chemical notification and release reporting: ISOPROPYL ALCOHOL

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

---

## **Section 16 – Other Information**

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This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(508) 429-5965

Date revised: 11-23-04  
Emergency Telephone Number: (800) 424-9300  
Agent: CHEMTREC

---

### Section 1 – Product and Company Information

---

Product Name: AGF STAR/3000 Tissue DNA – DNA Wash Solution A  
Product Number: AGF-R5

Company: AutoGen, Inc.  
Address: 84 October Hill Rd.  
Holliston, MA 01746  
Phone: (508) 429-5965  
Fax: (508) 429-9765

---

### Section 2 – Composition/Information on Ingredients

---

<u>Chemical name</u>	<u>CAS #</u>
Ethanol	2-202
Isopropyl alcohol	67-63-0
Water	

---

### Section 3 - Hazards Identification

---

Dangerous Components:  
UN Number: 1993  
Chemical: Ethanol/Isopropanol alcohol  
Class: 3, Flammable liquid

Emergency Overview  
Poison  
Flammable liquid and vapor. Vapor may cause flash fire.

Hazard Description  
Poison! Flammable liquid and vapor. Vapor may cause flash fire. May be fetal if swallowed. Cannot be made non-poisonous. Birth defect hazard. Harmful if inhaled or absorbed through skin. Causes respiration tract, eye and skin irritation. Contains material which causes danger to the following organs: blood,



kidneys, reproductive system, liver, gastrointestinal, tract, respiratory tract, skin, central nervous system, eye, lens or cornea.

NFPA Rating (0-4)

Fire hazard	3	
Health	1	
Reactivity	0	
Specific hazard		0

---

**Section 4- First Aid Measures**

---

General Information:

Immediately remove any clothing soiled by the substance .Wash affected area with copious amounts of water for at least 15 minutes and then soap and water. Speed in removing material from skin is extremely important. Use safety shower.

Eye Contact:

Rinse opened eye for at least 15 minutes under running water. Then consult at a physician.

Skin Contact:

Immediately wash with water and soap and rinse thoroughly. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Call physician immediately.

Inhalation:

Supply fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call physician immediately.

Swallowing

If conscious, drink water and induce vomiting immediately as directed by medical personal. Never give an unconscious person anything to ingest.

---

**Section 5- Fire Fighting Measures**

---

Flammability of the Product

Product will burn

Auto-Ignition Temperature

The lowest known value is 371 C (as ethanol)

Flash Points

Closed cup: 19.0 C (as ethanol)

Suitable Extinguishing Agents

SMALL FIRE: Use DRY chemical powder.



LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.

#### Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

---

### **Section 6 – Accidental Release Measures**

---

#### Small Spill and Leak

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

#### Large Spill and Leak

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

---

### **Section 7 – Handling and Storage**

---

#### Handling:

Keep away from heat, sparks and flame. Keep container closed. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not breathe gas/fumes/vapor/spray.

#### Storage:

Keep container in a cool, well-ventilated area.

---

### **Section 8 – Exposure controls/Personal Protection**

---

#### Personal Protection

Use chemical safety goggles, protective gloves or vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

#### Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.



### Exposure Limits

#### Isopropyl alcohol

ACGIH (United States, 1994).

STEL: 1230 mg/m<sup>3</sup>, 500 ppm

TWA: 983 mg/m<sup>3</sup> Period: 10 hour(s), 400 ppm Period: 10 hour(s).

NIOSH REL (United States, 1994).

STEL: 1225 mg/m<sup>3</sup>, 500 ppm

TWA: 980 mg/m<sup>3</sup> Period: 10 hour(s), 400 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989).

STEL: 1225 mg/m<sup>3</sup>, 500 ppm

TWA: 980 mg/m<sup>3</sup>, 400 ppm ON MATERIALS

#### Ethanol

ACGIH (United States, 1994).

TWA: 1880 mg/m<sup>3</sup>: 1000 ppm

NIOSH REL (United States, 2000).

TWA: 1900 mg/m<sup>3</sup> Period: 10 hour(s): 1000 ppm Period: 10 hour(s).

OSHA Final Rule (United States, 1989).

TWA: 1900 mg/m<sup>3</sup>: 1000 ppm

---

### **Section 9 – Physical and Chemical Properties**

---

#### Appearance:

Colorless liquid with characteristic odor.

Boiling point: The lowest known value is 78.3 C (Ethanol)

Melting point: Not determined.

Specific gravity: Not determined.

Solubility in /Miscibility with water: Soluble in water.

Vapor density: The highest known value is 2.07 (isopropyl alcohol)

Vapor pressure: The highest known value is 5.9 kPa (44 mmHg) at 25 C (Ethanol)

---

### **Section 10 – Stability and Reactivity**

---

#### Stability/Reactivity

Stable under ordinary handling conditions.

#### Incompatibility with Various Substances

Reactive with oxidizing agents, acids.

---

### **Section 11 – Toxicological Information**

---

#### CAS NO. Designation of Materials:

64-17-5 Ethanol

Acute toxicity: oral mouse LD50, 3,450mg/kg

67-63-0 Isopropyl alcohol (100%, W/V)



Acute toxicity: oral mouse LD50, 4,960 mg/kg  
Caustic effect on skin, mucous membranes and eye.

#### Chronic Effects of Humans:

Developmental Toxicity: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED].

Contains material which may cause damage to the following organs: blood, the reproductive system, liver, upper respiratory tract, skin, eyes, central nervous system (CNS), eye, lens or cornea.

Acute Effects on Humans: Extremely hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin. Hazardous in case of inhalation. Hazardous in case of ingestion.

---

#### **Section 12 – Ecological Information**

---

This product itself and its products of degradation are not toxic.

---

#### **Section 13 – Disposal Considerations**

---

Incineration, fuels blending or recycle. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

---

#### **Section 14 – Transport Information**

---

##### DOT Classification

Proper Shipping Name: Flammable liquid, n.o.s., (Ethanol/Isopropyl alcohol)

Hazard Class: 3

UN number: UN1993

Packing Group: II

##### ICAO/IATA Classification

Proper Shipping Name: Flammable liquid, n.o.s., (Ethanol/Isopropyl alcohol)

Hazard Class: 3

UN number: UN1993

Packing Group: II

---

#### **Section 15 – Regulatory Information**

---

##### **U.S. FEDERAL REGULATIONS**

TSCA 4(a) final test rules: ISOPROPYL ALCOHOL

TSCA 8(b) inventory: ISOPROPYL ALCOHOL; ETHANOL; WATER.

TSCA 8(d) H and S data reporting: ISOPROPYL ALCOHOL: 1986



TSCA 12(b) one time export: ISOPROPYL ALCOHOL

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: ISOPROPYL ALCOHOL;  
ETHANOL

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:  
ISOPROPYL ALCOHOL: Fire Hazard, Immediate (Acute) Health Hazard, Delayed  
(Chronic) Health Hazard:

SARA 313 toxic chemical notification and release reporting: ISOPROPYL  
ALCOHOL

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were  
found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

---

#### **Section 16 – Other Information**

---

This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



## Material Data Safety Sheet

AutoGen, Inc.  
84 October Hill Rd.  
Holliston, MA 01746  
(800) 292-5678

**Date revised:** 02-23-06  
**Emergency Telephone Number:** (800) 424-9300  
**Agent:** CHEMTREC

---

### Section 1 – Product and Company Information

---

**Product Name:** AGF Star/3000 Tissue DNA – Deproteinizing Solution B  
**Product Number:** AGF-R7

**Company:** AutoGen, Inc.  
**Address:** 84 October Hill Rd.  
Holliston, MA 01746  
**Phone:** (800) 292-5678  
**Fax:** (508) 429-9765

---

### Section 2 – Composition/Information on Ingredients

---

<u>Chemical name</u>	<u>CAS #</u>
Phenol	108-95-2
Chloroform	67-66-3
Isoamyl alcohol	123-51-3
Acetic acid	64-19-7
Potassium acetate	127-08-2
Water	

#### DANGEROUS COMPONENTS:

<u>UN Number</u>	<u>Chemical</u>	<u>Class</u>
2821	Phenol (solution)	6.1, Toxic substances
1888	Chloroform	6.1, Toxic substances

---

### Section 3 - Hazards Identification

---

#### EMERGENCY OVERVIEW

WARNING!

HARMFUL IF INHALED OR SWALLOWED.

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, LIVER,  
HEART, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.

SUSPECT CANCER HAZARD.



MAY CAUSE CANCER.

**WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.

Do not ingest. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Risk of cancer depends on duration and level of exposure.

#### ROUTES OF ENTRY

Dermal contact. Eye contact. Inhalation. Ingestion.

#### POTENTIAL ACUTE HEALTH AFFECT

Eyes: Irritating to eyes.

Skin: Irritating to skin.

Inhalation: Toxic by inhalation. Irritating to respiratory system.

Ingestion: Toxic if swallowed.

Carcinogenic effects: May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

#### NFPA RATING (0-4)

Flammability 0

Health 2

Instability 0

---

### Section 4- First Aid Measures

---

#### GENERAL INFORMATION

Immediately remove any clothing soiled by the substance .Wash affected area with copious amounts of water for at least 15 minutes and then soap and water. Speed in removing material from skin is extremely important. Use safety shower. Call physician let them know you have been exposed to phenol - a very corrosive and caustic solution.

#### EYE CONTACT:

Rinse opened eye for at least 15 minutes under running water. Then consult at a physician.

#### SKIN CONTACT:

Immediately wash with water and soap and rinse thoroughly. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Call physician immediately.

#### INHALATION:

Supply fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call physician immediately.



#### SWALLOWING

If conscious, drink water and induce vomiting immediately as directed by medical personal. Never give an unconscious person anything to ingest.

#### PROTECTION OF FIRST-AIDERS:

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

---

### Section 5- Fire Fighting Measures

---

#### FLAMMABILITY OF THE PRODUCT

No specific hazard

#### SUITABLE EXTINGUISHING AGENTS:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.

---

### Section 6 – Accidental Release Measures

---

#### PERSON-RELATED SAFETY PRECAUTIONS:

Ensure adequate ventilation.

#### MEASURES FOR ENVIRONMENTAL PROTECTION:

Do not allow to enter sewers/surface or ground water.

#### MEASURES FOR CLEANING/COLLECTING:

Adsorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation.

---

### Section 7 – Handling and Storage

---

#### HANDLING:

Keep container closed. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Do not ingest. Avoid breathing vapor or mist. Wash thoroughly after handling.

#### STORAGE:

Keep container tightly closed. Keep container in a cool, well-ventilated area.



---

## Section 8 – Exposure controls/Personal Protection

---

COMPONENTS WITH LIMIT VALUES THAN REQUIRING MONITORING AT THE WORK SPACE:

CAS NO. DESIGNATION OF MATERIALS % TYPE VALUE

108-95-2 phenol

ACGIH TLV 19mg/m<sup>3</sup>, 5 ppm

NIOSH REL Short term value: C 60 mg/m<sup>3</sup>, C 15.6 ppm

OSHA PEL 19 mg/m<sup>3</sup>, 5 ppm

67-66-3 Chroloform

ACGIH TWA: 49 mg/m<sup>3</sup>

OSHA PEL (United States, 8/1997).

CEIL: 240 mg/m<sup>3</sup> Form: All forms

CEIL: 50 ppm Form: All forms

OSHA PEL 1989 (United States, 3/1989).

TWA: 9.78 mg/m<sup>3</sup> 8 hour/hours. Form: All forms

TWA: 2 ppm 8 hour/hours. Form: All forms

WORK SPACE:

Control the emission of the substance at it source. A system of local exhaust is recommended when handling at in house work space.

PROTECTION MATERIALS

Use chemical safety goggles, protective gloves, protective boots or masks for organic gases.

PERSONAL PROTECTION

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Recommended: splash goggles

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Body: Recommended: Lab coat.

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

HYGIENE MESURES

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.



---

## Section 9 – Physical and Chemical Properties

---

Odor: have a pungent odor.

Color: slightly yellow.

### APPEARANCE:

Physical State and Appearance: Liquid. (slightly yellow)

Boiling/Condensation Point: Not determine

Melting/Freezing Point: Not determine

---

## Section 10 – Stability and Reactivity

---

### STABILITY/REACTIVITY

Stable, Light sensitive.

### INCOMPATIBILITY WITH VARIOUS SUBSTANCE

Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis, calcium hypochlorite, magnesium, lead and zinc..

### HAZARDOUS POLYMERIZATION

Will not occur.

---

## Section 11 – Toxicological Information

---

### CAS NO. DESIGNATION OF MATERILAS:

108-95-2 Phenol

Acute toxicity: Oral (mouse) LD50, 300mg/kg

Oral (rat) LD50, 414 mg/kg

Caustic effect on skin, mucous membranes and eye.

67-66-3 Chroloform

Acute toxicity: Oral (mouse) LD50, 36mg/kg

Oral (rat) LD50, 695 mg/kg

---

## Section 12 – Ecological Information

---

### HAZZADOUS FOR WATER:

Do not allow product to reach ground water, water course or sewage system

### TOXICITY TO FISH:

Toxic for water living.

### CAS NO. DESIGNATION OF MATERILAS:

108-95-2 Phenol

LD 50 /96 hours, 10-100 mg/liter

Golden fish LC0, 8-10 mg/liter

LC50, 14-25 mg/liter

LC100, 28-30 mg/liter

### TOXICITY OF THE PRODUCTS OF BIODEGRADATION

The products of degradation are as toxic as the product itself.



---

## Section 13 – Disposal Considerations

---

### WASTE DISPOSAL

The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

---

## Section 14 – Transport Information

---

### DOT CLASSIFICATION

Proper Shipping Name: Toxic liquid, organic , n.o.s.  
(Phenol/chloroform solution)  
Hazard Class : 6.1  
UN number :2810  
Packing group: Packing group II

### ICAO/IATA CLASSIFICATION

Proper Shipping Name: Toxic liquid, organic , n.o.s.  
(Phenol/chloroform solution)  
Hazard Class : 6.1  
UN number :2810  
Packing group: Packing group II

---

## Section 15 – Regulatory Information

---

United States  
HCS Classification : Toxic material  
Irritating material  
Carcinogen  
Target organ effects

### U.S. FEDERAL REGULATIONS

TSCA 8(b) inventory: PHENOL;CHLOROFORM; .  
TSCA 8(d) H and S data reporting: : PHENOL;1987  
SARA 302/304/311/312 extremely hazardous substances: PHENOL;CHLOROFORM  
SARA 302/304 emergency planning and notification: PHENOL;CHLOROFORM  
SARA 302/304/311/312 hazardous chemicals: PHENOL;CHLOROFORM  
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:  
PHENOL: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard:  
CHLOROFORM: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard:  
SARA 313 toxic chemical notification and release reporting: PHENOL  
Clean Water Act (CWA) 307: PHENOL;CHLOROFORM  
Clean Water Act (CWA) 311:PHENOL;CHLOROFORM  
Clean air act (CAA) 112 accidental release prevention: :CHLOROFORM.  
Clean air act (CAA) 112 regulated flammable substances: No products were found.



Clean air act (CAA) 112 regulated toxic substances: CHLOROFORM

---

**Section 16 – Other Information**

---

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