



# Material Safety Data Sheet

Issue Date: 15-NOV-2007  
Supersedes: 24-AUG-2006

BIOSAN

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## 1 Identification of Product and Company

**Identification of substance or preparation**  
BIOSAN

**Product Application Area**  
Membrane cleaner

**Company/Undertaking Identification**  
GE Betz, Inc.  
4636 Somerton Road  
Trevose, PA 19053  
T 215 355-3300, F 215 953 5524

**Emergency Telephone**  
(800) 877-1940

Prepared by Product Stewardship Group: 215 355-3300

## 2 Composition / Information On Ingredients

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Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

**HAZARDOUS INGREDIENTS:**

Cas#	Chemical Name	Range (w/w%)
77-92-9	CITRIC ACID Irritant (eyes)	15-40

## 3 Hazards Identification

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**EMERGENCY OVERVIEW**

**WARNING**

May cause moderate irritation to the skin. Severe irritant to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable

Odor: Slight; Appearance: Light Yellow To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

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#### POTENTIAL HEALTH EFFECTS

##### ACUTE SKIN EFFECTS:

Primary route of exposure; May cause moderate irritation to the skin.

##### ACUTE EYE EFFECTS:

Severe irritant to the eyes.

##### ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

##### INGESTION EFFECTS:

May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

##### TARGET ORGANS:

No evidence of potential chronic effects.

##### MEDICAL CONDITIONS AGGRAVATED:

Not known.

##### SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

## 4 First Aid Measures

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##### SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

##### EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

##### INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

##### INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

##### NOTES TO PHYSICIANS:

No special instructions

## 5 Fire Fighting Measures

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**FIRE FIGHTING INSTRUCTIONS:**

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

**EXTINGUISHING MEDIA:**

dry chemical, carbon dioxide, foam or water

**HAZARDOUS DECOMPOSITION PRODUCTS:**

oxides of carbon and sulfur

**FLASH POINT:**

> 200F > 93C P-M(CC)

## 6 Accidental Release Measures

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**PROTECTION AND SPILL CONTAINMENT:**

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

**DISPOSAL INSTRUCTIONS:**

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

## 7 Handling & Storage

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**HANDLING:**

Acidic. Do not mix with alkaline material.

**STORAGE:**

Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

## 8 Exposure Controls / Personal Protection

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**EXPOSURE LIMITS**

**CHEMICAL NAME**

CITRIC ACID

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

**ENGINEERING CONTROLS:**

adequate ventilation

**PERSONAL PROTECTIVE EQUIPMENT:**

Use protective equipment in accordance with 29CFR 1910 Subpart I

**RESPIRATORY PROTECTION:**

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

**SKIN PROTECTION:**

rubber, butyl, viton or neoprene gloves -- Wash off after each use. Replace as necessary.

**EYE PROTECTION:**

splash proof chemical goggles

## 9 Physical & Chemical Properties

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Specific Grav.(70F,21C)	1.082	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	27	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-3		
Viscosity(cps 70F,21C)	10	% Solubility (water)	100.0

Odor	Slight
Appearance	Light Yellow To Amber
Physical State	Liquid
Flash Point	P-M(CC) > 200F > 93C
pH As Is (approx.)	1.2
Evaporation Rate (Ether=1)	< 1.00
Percent VOC:	0.0

NA = not applicable ND = not determined

## 10 Stability & Reactivity

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**STABILITY:**

Stable under normal storage conditions.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

**INCOMPATIBILITIES:**

May react with strong oxidizers.

**DECOMPOSITION PRODUCTS:**

oxides of carbon and sulfur

**INTERNAL PUMPOUT/CLEANOUT CATEGORIES:**

"B"

## 11 Toxicological Information

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Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

## 12 Ecological Information

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**AQUATIC TOXICOLOGY**

Daphnia magna 48 Hour Acute Toxicity (Estimated)

LC50= 600; No Effect Level= 150 mg/L

Fathead Minnow 96 Hour Acute Toxicity (Estimated)

LC50= 330 mg/L

**BIODEGRADATION**

BOD-28 (mg/g): 91  
BOD-5 (mg/g): 79  
COD (mg/g): 166  
TOC (mg/g): 73

## 13 Disposal Considerations

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If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :  
D002=Corrosive(pH).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

## 14 Transport Information

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DOT HAZARD: Not Applicable  
PROPER SHIPPING NAME:

DOT EMERGENCY RESPONSE GUIDE #: Not applicable  
Note: Some containers may be DOT exempt, please check BOL for exact container classification

## 15 Regulatory Information

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### **TSCA:**

All components of this product are included on or are in compliance with the U.S. TSCA regulations.

### **CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):**

No regulated constituent present at OSHA thresholds

### **FOOD AND DRUG ADMINISTRATION:**

21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

### **SARA SECTION 312 HAZARD CLASS:**

Immediate(acute)

### **SARA SECTION 302 CHEMICALS:**

No regulated constituent present at OSHA thresholds

### **SARA SECTION 313 CHEMICALS:**

No regulated constituent present at OSHA thresholds

### **CALIFORNIA REGULATORY INFORMATION**

#### **CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):**

No regulated constituents present

### **MICHIGAN REGULATORY INFORMATION**

No regulated constituent present at OSHA thresholds

## 16 Other Information

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**NFPA/HMIS**

**CODE TRANSLATION**

Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ACID	pH below 2.1
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

**CHANGE LOG**

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
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MSDS status:	10-MAR-2000		** NEW **
	09-MAY-2000	3, 5, 14	10-MAR-2000
	30-JAN-2002	15	09-MAY-2000
	04-FEB-2002	15	30-JAN-2002
	19-JUL-2006	16	04-FEB-2002
	24-AUG-2006	16	19-JUL-2006
	15-NOV-2007	4, 5, 8, 10	24-AUG-2006