



## SAFETY DATA SHEET

Global Harmonized System of Classification and Labeling of Chemicals Format

### I. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: *Bac-Shield*  
PRODUCT TYPE: Chitosan Antimicrobial  
CHEMICAL NAME: Aqueous solution of poly n-acetylglucosamine and poly d-glucosamine

#### Manufacturer / Supplier Information

SDS Prepared by: Chem-Tex Laboratories, Inc.  
2725 Armentrout Drive  
Concord, NC 28025

Emergency Phone Number (24 hours/day)  
Chemtrec 800-424-9300

For additional health, safety or regulatory information, call (704) 795-9322 during business hours

*Prepared:* 06/24/2014  
*SDS Updated:* 06/29/2015

### II. Hazard Identification

Hazardous Ingredients	CAS#	Percentage	LD <sub>50</sub> (mg/kg)	LC <sub>50</sub> (ppm/10hr)	SARA Title III
Acetic Acid	64-19-7	3	3,310	5,620	Yes

GHS Classification: Acute Toxicity, Not Classified Skin Corrosion/Irritation, Not Classified  
Eye Irritation, Category 2B

HMIS: Health = 1 Fire = 0 Reactivity = 0 PPE = B

Signal Word: **Warning**

No Pictogram  
Required

**Health Hazards:** No physical hazard according to OSHA/GHS criteria  
No health hazard according to OSHA/GHS criteria  
No environmental hazard according to OSHA/GHS criteria

**Precautionary Statement:** P103: Read label before use.  
P102: Keep out of reach of children  
P101: If medical advice is needed, have product container or label in hand.  
P264: Wash... Thoroughly after handling.  
P280: Wear protective clothing/eye protection  
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P337 + P313: IF EYE IRRITATION PERSISTS: Get medical attention.

P314: Get medical advice/attention if you feel unwell.

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### III. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredients	CAS#	Percentage	OSHA-PEL	ACGIH -TLV
Proprietary non-hazardous components				

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### IV. First Aid Measures

EYES: P305 + P351 + P338: IF IN EYES: Rinse continuously with water for several (15) minutes. Remove contact lens if present and easy to do. Continue rinsing.

SKIN: P303 + P361+ P353: IF ON SKIN (OR HAIR): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

INHALATION: P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

INGESTION: P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P311: Call a POISON CENTER or doctor/physician.

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### V. Fire Fighting Measures

FLASH POINT: Nonflammable

FIRE AND EXPLOSION HAZARDS: No fire or explosive hazards. If containers are in a fire or if heated by fire, a pressure increase will occur in a closed container and bursting may occur.

EXTINGUISHING MEDIA: Water, CO<sub>2</sub>, dry chemical or foam

SPECIAL FIRE FIGHTING INSTRUCTIONS: Firefighters should wear self-contained breathing apparatus. Use water spray to cool fire exposed containers.

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### VI. Accidental Release Measures

PERSONAL PRECAUTIONS: P234: Keep only in original container.  
P262: Do not get in eyes, on skin, or on clothing.  
P264: Wash thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

ENVIRONMENTAL PRECAUTIONS: P273: Avoid release to the environment.

METHODS FOR CONTAINMENT/CLEANUP:  
Dike Spill and re containerize. Use appropriate absorbent (sand, earth or vermiculite, etc.).  
For larger spills, dike area and re-containerize. Avoid eye and skin contact. Dispose material in accordance with local, state and federal regulations. Always refer to product label.

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**VII. Handling and Storage**

**HANDLING:** P262: Do not get into eyes, on skin or on clothing.  
P264: Wash thoroughly after handling.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
Spilled material is very slippery. Do not reuse container.

**STORAGE:** P402 + P404: Store in a dry place. Store in a closed container.  
Product will crystallize if subjected to temperatures below 45° F. If material is hazy or frozen set out in warm environment until thawed then stir until homogeneous.

**STORAGE TEMPERATURE:** 50°-100° F

**SPECIAL PACKAGING REQUIREMENTS:** P406: Store in a corrosive resistant container.

**INCOMPATIBLE MATERIALS:** Incompatible with strong oxidants and strong bases.

**SHELF LIFE:** 2 years

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**VIII. Exposure Control / Personal Protection**
**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Hand Protection:	Chemical Resistant Gloves
Eye Protection:	Chemical Goggles or Glasses with Side Shields
Skin Protection:	Protective Clothing
Respiratory Protection:	The use of a NIOSH approved respirator protection may be needed if working in a poor ventilated area.

**Engineering Measures/Controls:**

Ventilation:	Ensure adequate ventilation, especially in confined area.
Other Measures:	Eye wash and safety shower in work area. Employees should wash their hands after use.

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**IX. Physical and Chemical Properties**

<b>Form and Appearance</b>	Clear amber liquid	<b>Odor</b>	Slight seaside odor
<b>pH, 1% in water</b>	3-5	<b>Odor Threshold</b>	NA
<b>Boiling Point</b>	>100° C	<b>Melting Point/Freezing Point</b>	35° F (1.7° C)
<b>Vapor Pressure</b>	ND	<b>Vapor Density (Air=1)</b>	ND
<b>Flash Point</b>	NA	<b>Evaporation Rate (H2O=1)</b>	1.0
<b>UEL</b>	NA	<b>LEL</b>	NA
<b>Viscosity #5 @ 20 rpm @ 25° C</b>	<15,000 cps	<b>Solubility in Water</b>	Soluble
<b>Octanol/Water Partition Coefficient</b>	NA	<b>Specific Gravity/ Bulk Density</b>	1.00-1.04/8.35-8.68
<b>Auto Ignition Temperature</b>	NA	<b>Decomposition Temperature</b>	ND
<b>% VOC</b>	<3	<b>% Solids</b>	5.5-7.5

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**X. Stability and Reactivity**

<b>STABILITY:</b>	Stable under normal conditions
<b>HAZARDOUS POLYMERIZATION:</b>	Will not occur
<b>INCOMPATIBILITIES:</b>	Strong oxidants and strong bases
<b>INSTABILITY CONDITIONS:</b>	Stable at normal temperature and storage conditions. Avoid temperatures above 200° F.
<b>DECOMPOSITION PRODUCTS:</b>	CO, CO <sub>2</sub> , sulfur oxides, metal oxides

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**XI. Toxicological Information**

## Acute Data:

Routes of Exposure: Eye contact, skin contact, ingestion, inhalation (mist, vapors).  
 Eye Contact: Irritant  
 Skin Contact: ND  
 Ingestion: ND  
 Inhalation: ND  
 Skin Sensitization:

## Acute Toxicity/Effects:

Test	Test Type	Species	Results	Comments
Oral Toxicity	LD50	Rat	>5,000 mg/kg	No Mortality
Dermal Toxicity	LD50	Rat	>5,000 mg/kg	No mortality
Inhalation Toxicity	LC50	Rat	2.07 mg/l	No mortality
Eye Irritation	PII	Rabbit	9.3-unrinsed 7.3-rinsed	Mildly irritating

## Chronic Data:

Carcinogenicity	IARC	ND	NTP	ND	ACGIH	ND	OSHA	ND
Mutagenicity		ND		ND		ND		ND
Reproductive Effects		ND		ND		ND		ND
Target Organ Effects		ND		ND		ND		ND

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**XII. Ecological Information**

## Ecotoxicity/Effects:

Test	Test Type	Species	Results	Comments
Acute Toxicity to Fish	LC50		ND	
Acute Toxicity to Aquatic Invertebrates	EC50		ND	
Acute Toxicity to Aquatic Plants			ND	
Chronic toxicity to Fish			ND	

## Environmental Fate:

Persistence/Degradability: Material is readily biodegradable  
 COD/BOD5:  
     BOD 5 day: 109,000 ppm  
     COD: 198,500 ppm  
 Bioaccumulation Potential: No bioaccumulation expected  
 Mobility in Soil: Material completely water soluble  
 Other Adverse Effects: No additional environmental effects known

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**XIII. Disposal Considerations**

Product: Dispose of absorbed material/content and/or container in accordance with local, state, federal and/or international regulations.  
 Packaging: Drum re-conditioner or in accordance to local, state and/or federal regulations.

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**XIV. Transport Information**

US DOT Regulations (Land Transport)	Not regulated
IATA/ICAO Regulations (Air Transport)	Not regulated
IMDG/IMO Regulations (Maritime Transport)	Not regulated

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**XV. Regulatory Information**

**EPA/TCSA Compliance status: All Components Listed**

**INTERNATIONAL INVENTORIES**

	<i>Yes</i>	<i>No</i>	<i>Unknown</i>
U.S. (TSCA)			Exempt
Canadian (DSL)			X
Australian (AICS)			X
European (EINECS)			X
Japanese (MITI)			X
Korean (ECL)			X
Philippines (PICCS)			X
China			X

Contents of this SDS comply with the OSHA standard 29 CFR 1910.1200/Hazcom 2012.

**Domestic Regulations:**

TSCA Status:

This material is registered under the Federal Insecticide Fungicide and rodenticide Act (FIFRA) #81446-1 and is subsequently exempt from TSCA Inventory Status.  
TPQ – None

SARA Title 302 (Extremely Hazardous Substances)

SARA Title 304 (Extremely Hazardous Substances)

CERCLA Hazardous Substances (RQ)

SARA 311/312 Hazard

SARA 313

RQ – None

None

Acute  Chronic  Fire  Pressure  Reactive

This product does not contain any chemicals, which are subject to Section 313 of Title III, Part 372

Clean Air Act Section 112 (TQ):

TQ – Not listed.

**State Information:**

California Proposition 65:

None of the composition are listed on the California Proposition 65 list.

State Right to Know/  
Hazardous Substance List  
Information:

None of the raw material in this product are known to be on any state right to know list.

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**XVI. Other Information****Key to Abbreviations:****NDA- No data available ND- Not Determined NA-Not Applicable NE- Not Established****Disclaimer**

This safety data sheet was prepared solely for the purpose of providing employees with information regarding potential hazards presented by listed substance(s). It was prepared in the context of reasonable foreseeable exposure situations, which may arise give the nature and the expected use of the product. The substance(s) may present greater or lesser hazard under other circumstances. The data and recommendations presented herein are based upon our research and the research of others but Chem-Tex Laboratories, Inc. makes no warranty of any kind expressed or implied, except that the product supplied will be of standard quality of Chem-Tex Laboratories, Inc and the user assumes all risk and liability resulting from reliance of the information contained on this Safety Data Sheet and the use of the product, whether used singularly or in combination with other substances. This disclaimer does not; however apply to an independent, statutory or contractual obligations which may otherwise exist between Chem-Tex Laboratories, Inc and any other person.