

Vanson HaloSource, Inc.  
Material Safety Data Sheet

Material Name: Chitosan  
Telephone: 425-881-6464

VHI-MSDS-02.24 Rev 04  
Date Prepared: 1-8-04

**24-HOUR EMERGENCY PHONE: CHEMTREC 800-424-9300**

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**SECTION I – CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

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Manufacturer's Name: Vanson HaloSource, Inc.  
Corporate Address: 14716 NE 87<sup>th</sup> Street, Redmond, WA 98052  
Manufacturer's Phone (Emergency): 800-424-9300 Chemtrec  
Manufacturer's Phone (Other): (425) 881-6464  
Material Name: Chitosan, Poly + 142, 242, 342  
Chemical Name: beta-(1,4)-2-amino-2-deoxy-D-glucose or poly-D-glucosamine

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**SECTION II – COMPOSITION, INFORMATION ON INGREDIENTS**

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CAS NO.	INGREDIENT	%	EXPOSURE LIMITS
9012-76-4	Chitosan		OSHA PEL: NA OSHA STEL: N/A ACGIH TLV: NA

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**SECTION III – HAZARDS IDENTIFICATION**

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**PRINCIPAL HEALTH HAZARDS, INCLUDING SIGNIFICANT ROUTES, EFFECTS, AND SYMPTOMS OF OVEREXPOSURE AND MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE MAY BE:**

**EYE:** Chitosan powder may cause mechanical irritation. Treat powder in eye as foreign object.

**SKIN:** The powder can cause irritation or rash.

**INHALATION:** May aggravate pre-existing medical conditions or allergies. It may accumulate on linings of the nose and lungs resulting in dryness and coughing.

**INGESTION:** Not likely to be hazardous if ingested.

**CARCINOGENICITY:** None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

**Note:** There is no known effect from chronic exposure to this product.

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**SECTION IV - FIRST AID**

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**EYES:** Flush with water to remove from eyes.

**SKIN:** Seek medical attention if rash or skin irritation persists.

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**INHALATION:** Remove to fresh air. Seek medical help if persistent irritation or breathing difficulties occur.

**INGESTION:** Not likely to be hazardous if ingested.

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## SECTION V - FIRE FIGHTING MEASURES

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**HAZARDOUS COMBUSTION PRODUCTS:** Keep away from oxidizing agents and avoid open flames. Product may ignite at temperatures in excess of 400°F. Depending on moisture content and particle size airborne dust of Chitosan might explode in the presence of an ignition source. It is comparable to flour and wood.

**EXTINGUISHING MEDIA:** Water, dry chemical, Co<sub>2</sub>, sand or foam.

**FIREFIGHTING INSTRUCTIONS:** Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coat, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Water may be used to keep fire-exposed containers cool until fire is out.

**FLASH POINT:** NA

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## SECTION VI – ACCIDENTAL RELEASE MEASURES

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**SMALL SPILL:** The material may be vacuumed or collected for recovery or disposal.

**LARGE SPILL:** See above.

**DISPOSAL INFORMATION:** Land disposal is acceptable. The material is biodegradable. Follow local, state & federal regulation.

**DISPOSAL METHODS:** See above.

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## SECTION VII - HANDLING & STORAGE

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**HANDLING & STORAGE PRECAUTIONS:** Store in a cool, dry place away from open flames and strong oxidizers.

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## SECTION VIII - EXPOSURE CONTROLS/ PERSONAL PROTECTION

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**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Good hygiene practices should be strictly followed. Before eating, drinking or smoking, wash face and hands thoroughly. For operations where eye or face contact may occur, wear chemical goggles or face shield. Showers and eyewash facilities should be accessible.

**EYE PROTECTION:** Safety glasses recommended when there is a high level of airborne dust.

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**SKIN PROTECTION:** Not required. However, cloth or plastic gloves are recommended to minimize potential mechanical irritation from handling.

**PROTECTIVE CLOTHING:** Not needed

**PROTECTIVE FOOTWEAR:** N/A

**RESPIRATORY PROTECTION:** A NIOSH/MSHA-approved respirator is recommended when the dust is airborne.

**VENTILATION REQUIREMENTS:** Generally adequate ventilation recommended.

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## SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

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**PHYSICAL FORM:** Chitosan a fine, off-white, tasteless powder.

**ODOR:** Odorless

**BOILING POINT:** NA

**MELTING POINT/FREEZE POINT:** NA

**pH:** NA

**SOLUBILITY IN WATER:** Insoluble in water & alcohols;  
Soluble in dilute organic acids.

**SPECIFIC GRAVITY:** NA

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## SECTION X - STABILITY & REACTIVITY DATA

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**CHEMICAL STABILITY:** NA

**HAZARDOUS POLYMERIZATION:** NA

**INCOMPATIBLES:** NA

**DECOMPOSITION PRODUCTS:** NA

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## SECTION XI - TOXICOLOGICAL INFORMATION

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**ORAL LD<sub>50</sub> (mice):** >10g/kg

**DERMAL LD<sub>50</sub> (rabbit):** NA

**EYE IRRITATION (rabbit):** N/A

**SKIN IRRITATION (rabbit):** N/A

**INHALATION 4-hr LC50 (rat):** NA

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## SECTION XII - ECOLOGICAL INFORMATION

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Fish 96-hour LC <sub>50</sub>	=	N/A
Daphnia 48-hour LC <sub>50</sub>	=	N/A
Green algae 96-hour EC <sub>50</sub>	=	N/A
Fish Chronic Value (ChV)	=	N/A
Daphnia ChV	=	N/A
Algae ChV	=	N/A

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## SECTION XIII - DISPOSAL CONSIDERATION

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**WASTE DISPOSAL METHOD:** State and local regulations may differ from federal regulations. Dispose of containers and unused contents in accordance with all applicable federal, state, and local regulations.

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## SECTION XIV - TRANSPORTATION INFORMATION

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DOT Proper Shipping Name:	Chitosan
DOT Hazard Class:	not hazardous
Packing Group:	NA
UN Number:	NA
Product RQ (lbs.):	NA
DOT Label:	NA
DOT Placard:	NA
Freight Class (package):	NA

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## SECTION XV - REGULATORY INFORMATION

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**MATERIAL IS REPORTED IN EPA TSCA INVENTORY LIST?:** Yes

**MATERIAL IS LISTED AS A CARCINOGEN/POTENTIAL CARCINOGEN IN FOLLOWING?:** No

**NTP ANNUAL REPORT:** No      **IARC GROUP I OR II:** No      **OSHA 29CFR PART 1910 SUBPART Z:** No

**DOES PRODUCT CONTAIN A TOXIC CHEMICAL SUBJECT TO SARA TITLE III SECTION 313 REPORTING:** No

This product does not contain any toxic chemicals in quantities subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 732.

**SARA TITLE III SECTION 311/312 CLASSIFICATIONS:** None

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**SECTION XVI – OTHER INFORMATION**

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