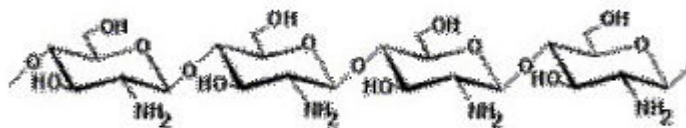


Sangam Laboratories Pvt Ltd

CHITOSAN

Scientific Name: Chitosan

Molecular structure:



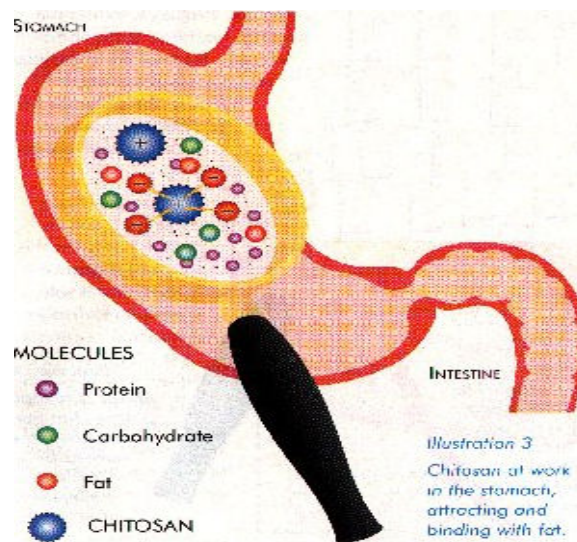
Chitosan is a linear polysaccharide composed of randomly distributed β -(1-4)-linked D-glucosamine (deacetylated unit) and N-acetyl-D-glucosamine (acetylated unit). It has a number of commercial and possible biomedical uses

Chitosan is produced commercially by deacetylation of chitin, which is the structural element in the exoskeleton of crustaceans (crabs, shrimp, etc.). The degree of deacetylation (%DA) can be determined by NMR spectroscopy, and the %DA in commercial chitosans is in the range 60-100 %.

The amino group in chitosan has a pK_a value of ~6.5, thus, chitosan is positively charged and soluble in acidic to neutral solution with a charge density dependent on pH and the %DA-value. In other words, chitosan is bioadhesive and readily binds to negatively charged surfaces such as mucosal membranes. Chitosan enhances the transport of polar drugs across epithelial surfaces, and is biocompatible and biodegradable. Purified qualities of chitosans are available for biomedical applications.

Usage

1. Chitosan is used primarily as a plant growth enhancer, and as a substance that boosts the ability of plants to defend against fungal infections.
2. Chitosan can also be used in water processing engineering as a part of a filtration process. Chitosan causes the fine sediment particles to bind together and is subsequently removed with the sediment during sand filtration. Chitosan also removes phosphorus, heavy minerals, and oils from the water. Chitosan is an important additive in the filtration process. Chitosan is also useful in other filtration situations, where one may need to remove suspended particles from a liquid.
3. Chitosan's properties allow it to rapidly clot blood, and has recently gained approval in the USA for use in bandages
4. Chitosan is frequently sold in tablet form at health stores as a 'fat attractor': It is supposed to have the capability of attracting fat from the digestive system and expelling it from the body so that users can, it is claimed, lose weight without eating less.



Certificate of Analysis Chitosan :-

Grade I

Physical Analysis :-

	Specifications	Analysis
Origin	shrimp shells	-
Form	flakes	Confirmed
Colour	White	Confirmed
Moisture	<10%	8%
Viscosity (Brookfield LV spindle No.1,30RPM,at 25° C)	100 to 500 cps	100 cps

chemical Analysis :-

DDA (degree of deacetylation)	90%	91%
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Heavy Metal Analysis :-

Cadmium	<0.5ppm	Confirmed
Lead	<2ppm	Confirmed
Mercury	<0.1ppm	Confirmed

Microbiological Analysis :-

Microbial	<1 x 10 ⁴ cfu/gms	850 cfu/gms
Coliforms	Negative	Nil

Certificate of Analysis Chitosan :-

Grade II

Physical Analysis :-

	specification	Analysis
Origin	shrimp shells	-
Form	100 mesh powder	Confirmed
Colour	whitish	Confirmed
Bulk Density	upper than 0.60gm/ml	0.60
Tapped density	upper than 0.7gm/ml	0.80
Moisture	Less than 10%	5%
Viscosity	5 to 100 cps	66 cps
Insoluble	Less than 1%	Nil

Chemical Analysis :-

DDA (degree of deacetylation)	80 ± 2 %	80 %
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Microbiological Analysis :-

Microbial	<1 x 10 ⁴ cfu/gms	850 cfu/gms
Coliforms	Negative	Nil

Certificate of analysis :-

Grade III

Physical analysis :-

	Specification	analysis
Origin	Shrimp shells	-
Form	100 mesh powder	confirmed
Colour	whitish ivory	confirmed
Bulk density	upper than 0.60gms/ml	0.62gms/ml
Tapped density	upper than 0.70gms/ml	0.82gms/ml
Moisture	Less than 10%	5%
Viscosity	100 & 20 cps	50 cps
Isoluble	less than 1%	Nil

Chemical Analysis:-

DDA (degree of deacetylation)	90%	90%
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Microbiological Analysis :-

Microbial	$<1 \times 10^4$ cfu/gms	850cfu/gms
Coliforms	Negative	Nil

Certificate of analysis :-

Grade IV

Physical analysis :-

	Specification	analysis
Origin	Shrimp shell	-
Form	100 mesh powder	confirmed
Colour	whitish ivory	confirmed
Bulk density	upper than 0.60gms/ml	0.62gms/ml
Tapped density	upper than 0.70gms/ml	0.82gms/ml
Moisture	Less than 10%	5%
Viscosity	100 & 20 cps	50 cps
Isoluble	less than 1%	Nil

Chemical Aalysis:-

DDA (degree of deacetylation)	95%	95%
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Microbiological Analysis :-

Microbial	$<1 \times 10^4$ cfu/gms	850cfu/gms
Coliforms	Negative	Nil

Packing: 25 Kg/50 Kg HDPE drums/ Fiber Drums as per customer's requirement

Storage: Store in Cool and Dry place