

what is **ChitoClear** chitosan?

A short introduction to the world of chitin and chitosan.

The first patent on producing chitosan was taken out in the 1920`s, since then there have been taken out several hundred patents on production and even more on application.

Although there has been used extensive resources on both research and development of processes and application, it's only the last two decades chitosan has been an industrial available product in large scale quantities.

Primex Ingredients AS is the first industrial producer of chitosan in Norway (Europe). Our strength is long experience in producing products from marine rawmaterials, using high technology equipment and advanced processes.

A POLYSACCHARIDE

Chitosan is made by alkaline N-deacetylation of chitin, (Fig. 1). The term chitosan does not refer to a uniquely defined compound, it merely refers to a family of copolymers with various fractions of acetylated units.

It consists of two types of monomers; chitin-monomers and chitosan-monomers.

Chitin is a linear polysaccharide consisting of (1-4)-linked 2-acetamido-2-deoxy-*b* -D-glucopyranose. Chitosan is a linear polysaccharide consisting of (1-4)-linked 2-amino-2-deoxy-*b* -D-glucopyranose. Commercial, chitin and chitosan consists of both types of monomers. Chitosan is found in nature, to a lesser extent than chitin, in the cell walls of fungi. Chitin is believed to be the second most abundant biomaterial after cellulose. The annual biosynthesis of chitin has been estimated to 10^9 to 10^{11} tons. Chitin is widely distributed in the nature. Among several sources the exoskeleton of crustaceans consist of 15-20 % chitin of dry weight. Chitin found in nature is a renewable Bio-resource.

Chitin is similar to cellulose both in chemical structure and in biological function as a structural polymer. The crystalline structure of chitin has been shown to be similar to cellulose in the arrangements of inter- and intrachain hydrogen bonding. It has been proposed to define chitosan and chitin as soluble or insoluble in 0.1 M acetic acid, respectively or by degree of deacetylation, >20 % of deacetylation is proposed defined as chitosan. The chitosan produced by Primex is **ChitoClear**[®], know to be world's purest chitosan.