Gelatin Encyclopedia Article

Gelatin

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Contents

Gelatin Encyclopedia Article.....1

Contents.....2

Gelatin.....3

Gelatin

Gelatin is a mixture of water-soluble **proteins** derived from the partial **hydrolysis** of collagen obtained from the skin, connective tissue, and bones of animals. It is a colorless to slightly yellow material that is produced in sheets, flakes, or powder. It is practically odorless and tasteless. In an aqueous **solution** it absorbs 5-10 times its weight of **water** and creates a stable **gel**. Since gelatin is derived from collagen, it is composed of various amino acids. The most prevalent **amino acids** are glycine, proline, and hydroxyproline.

The origin of gelatin is unknown but it was likely to have been accidently discovered after boiling the remains of animals that were killed for food. This process would produce a substance that remained liquid when hot and solid when cooled. The first known commercial production of gelatin was in Holland in 1685. By 1700, England was producing gelatin. It was first produced in the United States in 1808. In 1993, about 75 million pounds of gelatin were being produced in America annually.

Gelatin has numerous uses. Since it is generally recognized as safe for ingestion, it is used extensively in food products as a stabilizer, thickener, binding agent, emulsifier, adhesive agent, film former, and texturizer. Products that contain gelatin include gummi candies, confections, marshmallows, meats, beer, jellies, and cream soups. In the pharmaceutical industry gelatin is an important suspending or encapsulating compound. Hard or soft gelatin capsules are produced and filled with various pharmaceutical doses. Gelatin is also used as a coating and binder for tablets. Other important applications for gelatin include film processing, the manufacture of cement, adhesives, rubber substitutes, and artificial silk. In addition, it has been used as a **plasma** expander and for the preparation of bacterial cultures.