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Glucosamine Hydrochloride

Introduction

Glucosamine hydrochloride is a popular supplemental form of the joint nutrient glucosamine. Glucosamine is chemically glucose that crystalizes as glucosamine hydrochloride during purification under acidic condition. It is one of the amino sugars used by biological systems for bringing modification to the functions of proteins.

Preparation of glucosamine

ICAR-CIFT has developed a method for preparation of glucosamine from chitin. Chitin can be hydrolyzed to glucosamine hydrochloride by adding concentrated hydrochloric acid and warming until the solution no longer gives opalacence on dilution with water. The excess acid can be distilled off under vacuum. The crude glucosamine hydrochloride is diluted with water and clarified with activated charcoal. The solution is filtered and evaporated under vacuum and further washed with methanol to obtain the final product.

Applications of glucosamine

- Joint pain: The rationale in using glucosamine for arthritis is that it is absorbed by the body and distributed to all organs. In the joint and synovial fluid this glucosamine will stimulate the synthesis of proteoglycans that help in repair of damaged cartilage.
- Wound healing: the water binding effect is important for cosmetic uses of glucosamine. It can increase the skin’s content of hyaluronic acid to increase moisturization, leading to enhanced skin barrier properties and reduced dryness.
- Cosmetics: Glucosamine inhibits the production of melanin in skin melanocytes.
- Stomach antacid: glucosamine is having good acid neutralization and peptic ulcer healing properties.
- Anti-aging property: Latest research claimed that, glucosamine supplementation mimics low calorie diet and increases life span.

Importance of Glucosamine hydrochloride

Glucosamine hydrochloride is a high end nutraceutical product by virtue of its properties. It has attracted much attention owing to its therapeutic activity in arthritis and is an approved food supplement.