

The Complete Book on Gums and Stabilizers for Food Industry

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Gums are plant flours (like starch or arrowroot) that make foods & other products thick. Gums are used in foods for many reasons besides being used as a thickener. Gums are important ingredient in producing food emulsifier, food additive, food thickener & other gum products. The main reason for adding a gum or hydrocolloid to a food product is to improve its overall quality. India is the largest producer of gums specially guar gum products. Similarly stabilizers are an indispensable substance in food items when added to the food items, they smoothen uniform nature and hold the flavouring compounds in dispersion. Gum technology stabilizers are carefully controlled blends of various food ingredients. Most processed foods need some sort of stabilization at some point during production, transportation, storage and serving. The science and technology of hydrocolloids used in food and related systems has seen many new developments and advances over recent years. The breadth and depth of knowledge of gums and stabilizers has increased tremendously over the last two decades, with researchers in industry and academia collaborating to accelerate the growth. Gums as food constituents or as food additives can influence processing conditions in the following ways; retention of water, reduction of evaporation rates, alteration of freezing rates, modification of ice crystal formation and participation in chemical reactions.

Some of the fundamentals of the book are functions of gum, typical food applications, gums in food suspensions, rheology and characters of gums, natural product exudates, flavor fixation, ice cream, ices and sherbets, gelation of low methoxyl pectin, seaweed extracts, microbial gums, transformation of collagen to gelatin, cellulose gums, dairy food applications, bakery product applications, analysis of hydrocolloids, gums in food products, general isolation of gums from foods, identification of gums in specific foods, group analysis and identification schemes, group identification methods, qualitative group analysis etc.

This book contains rheology of gums, plant sheet gums, microbial gums, cellulose gums and synthetic hydrocolloids different stabilizers used in food industry. The book will be very resourceful to all its readers, new entrepreneurs, scientist, food technologist, food industries etc.

1. FUNCTIONS OF GUM

Convenience Foods

Instant Coffee

Frozen Foods

Freeze-Dried Foods

Gum Constituents

Effect on Processing

Pertinent Processing Parameters
Function in Food Applications
Viscosity
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Factors Effecting Hydrophilic Viscosities
Typical Food Applications
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Mechanism of Gel Formation
Types of Gel Linkage
Gel Textures
Effect of Sugar on Gels
Rheological Behavior
Gel-Enhancing Effect of Other Gums
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Types of Emulsions
Preparation of Emulsions
Applications of Hydrocolloids
Breaking of Emulsions
Suspensions and Dispersions
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Foams
Description
Requirements for Stability
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Crystallization Control
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Basic Principles
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Limitations of Spray-Dried Flavors
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Dilatancy (Shear-Thickening)
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Rheopexy
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Flow Curve Data
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Capillary Viscometers
Rotational Viscometers
Brookfield Synchro-Lectric Viscometer
Corn Industries Viscometer
Brabender Visco-Amylograph
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Exchange Ridgelimeter
Gel Characterization Apparatus (GCA)
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Gum Karaya
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Meat Products
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Dairy Products
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Gum Tragacanth
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Ice Cream, Ices and Sherbets
Bakery Products
Confectionery
Miscellaneous

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Psyllium Seed Gum
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Quince Seed Gum
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Canned Fruits and Fruit Juices
Confectionery Products
Dairy Products

Miscellaneous
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Canned Tomato Aspic
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Food and Drug Administration Status

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Food and Drug Administration Status

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Paper Chromatography
Electrophoresis
X-Ray Diffraction
Differential Thermal Analysis (DTA)
Reagents for Gum Identification

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