



CIMA[®]
Industries Inc.
Food and Beverage Equipment



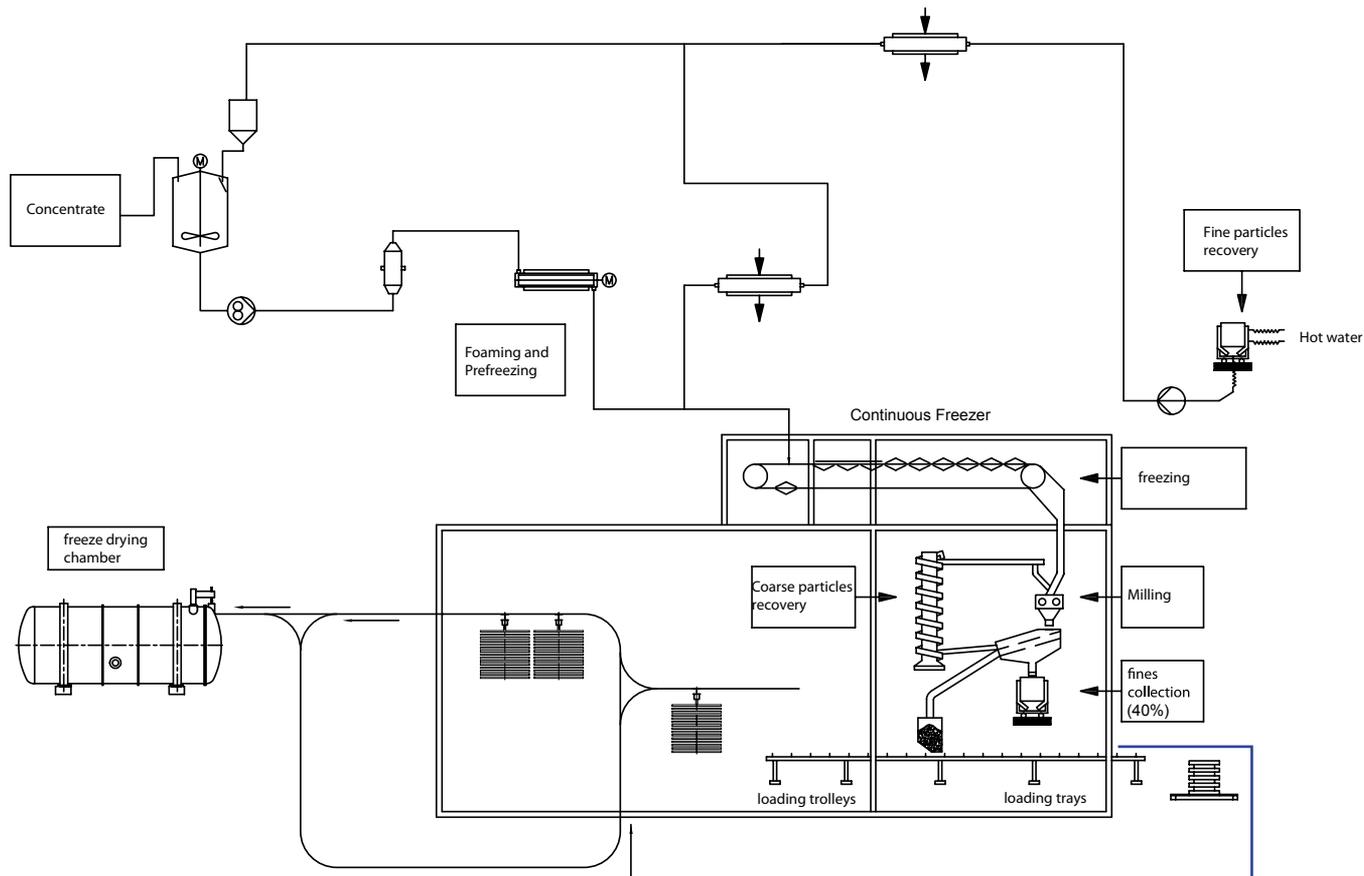
FREEZE DRYING NATURAL CONCENTRATES AND EXTRACTS



FREEZEPHERE[®]

TRADITIONAL METHODS

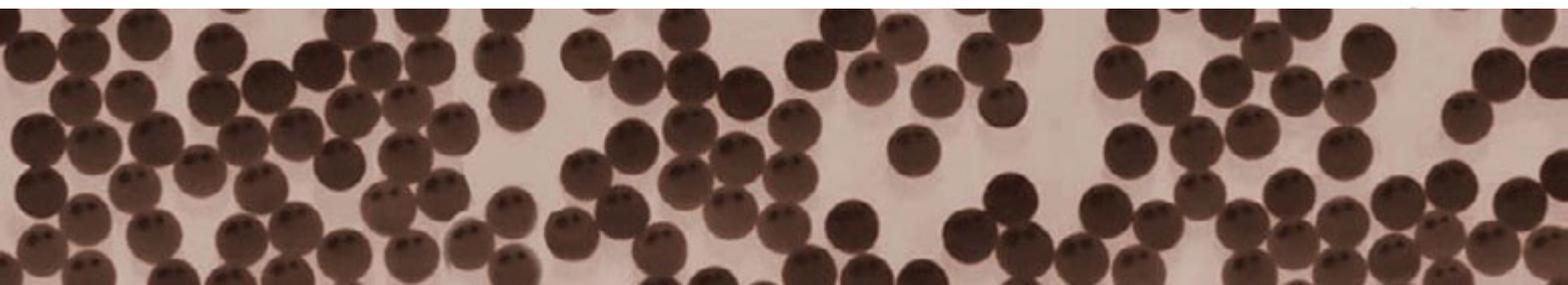
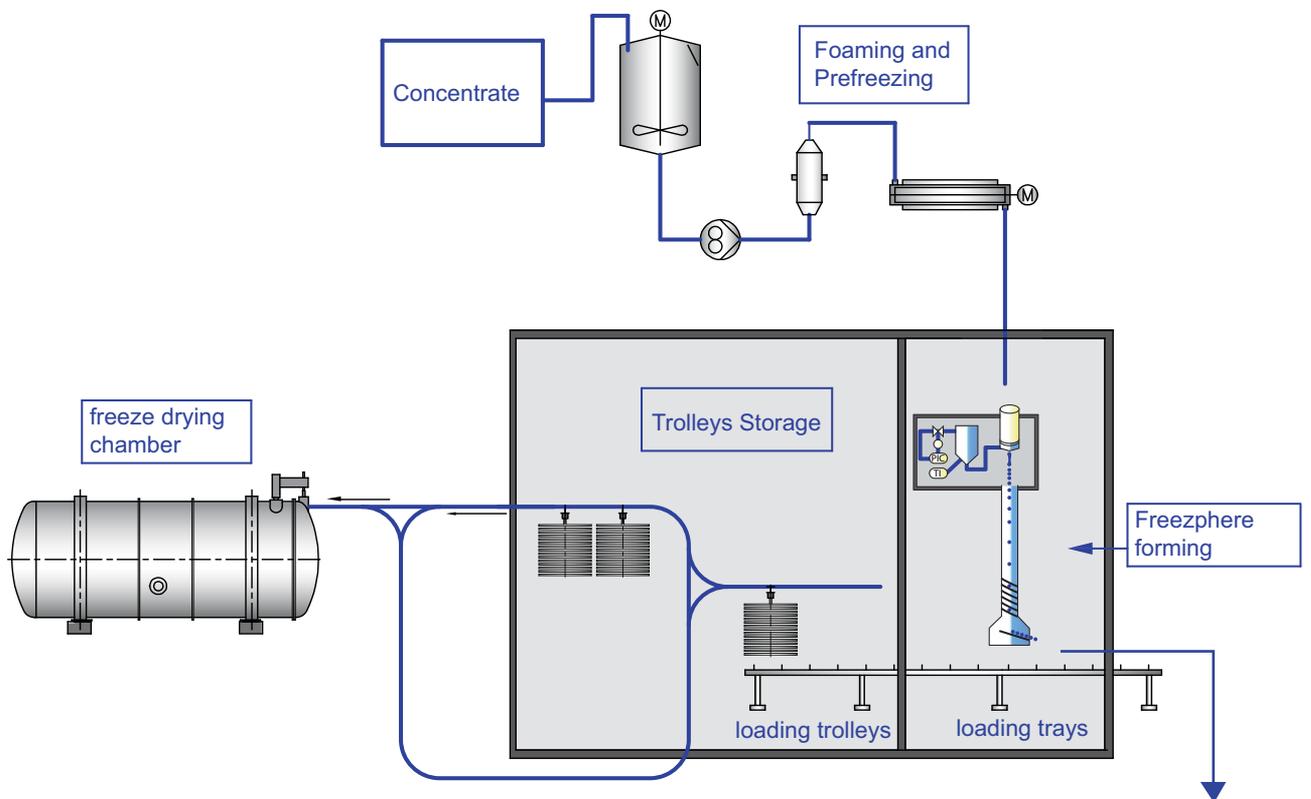
- High energy cost, approximately 40% of the product has to be reprocessed because of particle size.
- High maintenance cost, because of high amount of moving parts.
- Large floorspace required in facility.
- Uneven particle size distribution
- Cleaning Difficulty does not allow product versatility
- Use of environmentally unfriendly refrigerant gases.



THE FREEZPHERE® DIFFERENCE

FREEZPHERE®

- High energy savings through avoidance of reprocesses
- Low maintenance cost because small amount of moving parts.
- High Use of Facility space, due to Compact Design.
- Precise control of particle size.
- Environment Friendly
- Easy Cleaning
- Possibility of integration with CIMA LN2 plant.



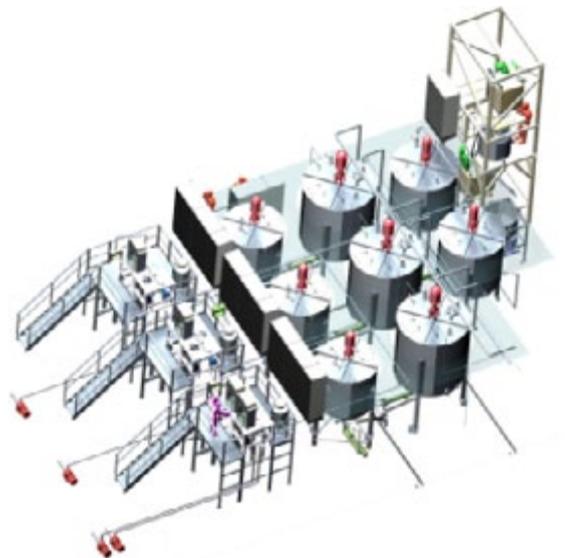
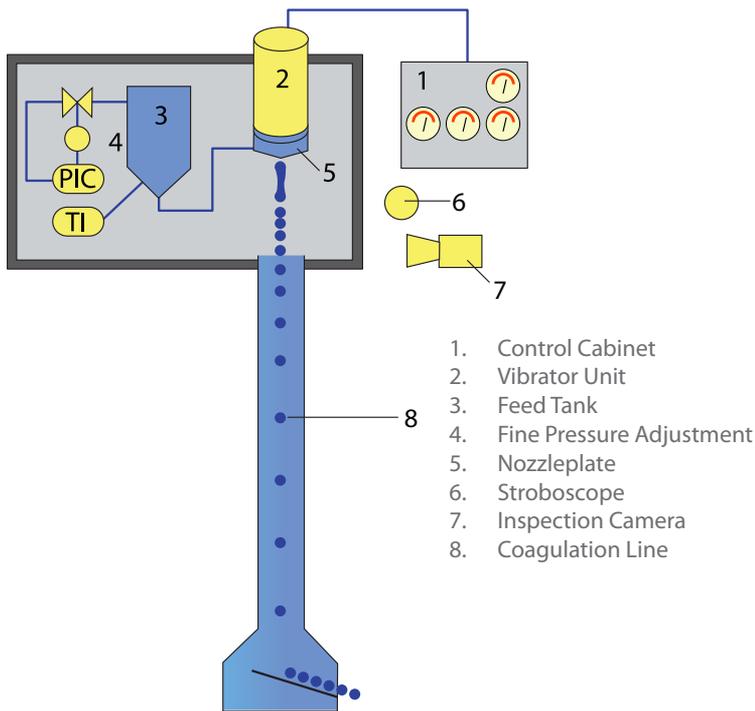
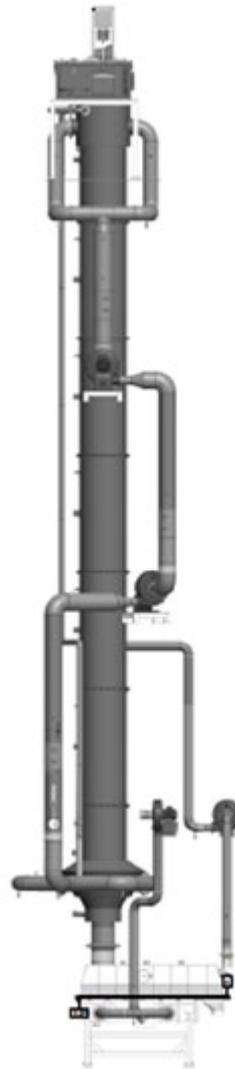


PRE-FREEZING

- Process starts from an extract or liqueur (40-50% solid content)
- Concentrate is cooled (3-5°C) prior to foaming.
- After cooling, concentrate enters the foaming chamber, where N₂ is injected to create a foam. Nitrogen flow is thoroughly controlled in order to assure constant density of the foam.
- Immediately after foaming, precrystallizing is performed, where temperature is controlled very precisely in order to obtain homogeneous coloring of the crystal.

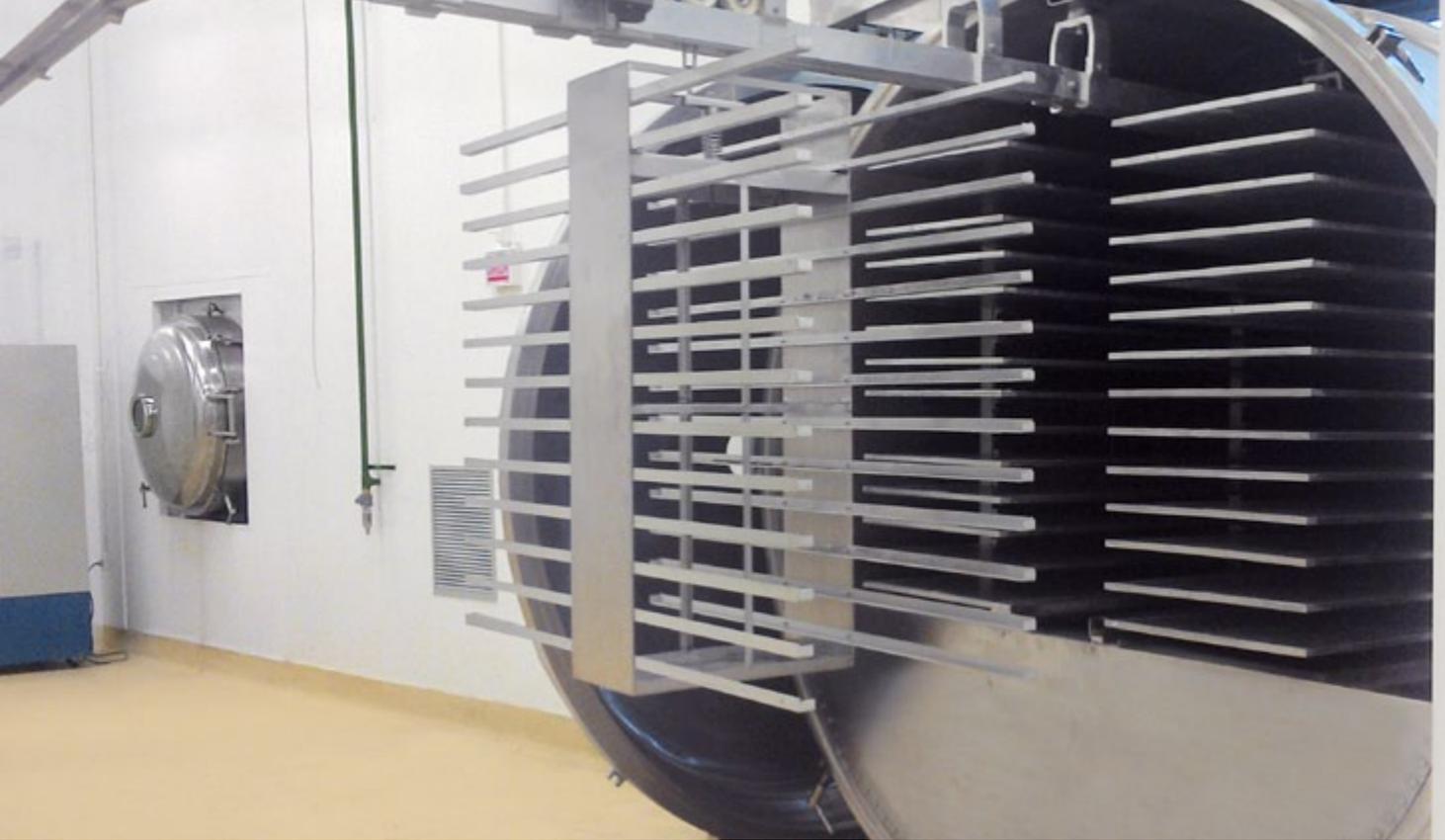
FREEZHERE® FORMATION/DEEP FREEZING

- Prefrozen product is gently pumped through a vibrating nozzle, generating small droplets of uniform size, which turn to perfectly shaped freezpheres® during free fall inside the freezing chamber, obtain a high quality product with the following characteristics.
 - Perfectly spherical
 - Free from dusts and fines
 - Highly homogenous and monodispersed particle size.
- After the freezing chamber, product is placed in trays and trolleys and taken to a deep freezing chamber (-40,-45°C) prior to the freeze drying process.



Joint Venture Technology with BRACE GmbH





FREEZE DRYING

- Trolleys are transported through a rail system inside the freeze drying chamber, where in controlled vacuum and temperature conditions, freeze drying process (dehydration by sublimation process) takes place.
 - Freeze drying system has the following characteristics:
 - Fully automated process
 - Recipe Operation for product versatility
 - Possibility of Residual moisture in product under 5%
 - Fully sanitary and easy cleaning design
 - High effectivity in steam collection and condensation.
 - Heat transfer by means of heating plates, without direct contact with the product, assuring dryness uniformity.
 - Automated loading and unloading (optional)
 - Redundant systems for cooling and vacuum (optional)





PACKAGING

- Once product has been freeze dried is transported to packing area.
- Packing versatility according to market needs (single dose, bag, jar, can).
- Product packaging takes place under controlled Temperature and Humidity conditions assuring product integrity.
- Sanitary design for easy cleaning.





CIMA[®]
Industries Inc.
Food and Beverage Equipment



GUADALAJARA

Lázaro Cárdenas 1254
Parque Industrial El Álamo
Guadalajara, Jalisco CP 44490
Tel. +52-33-4777-6000

SHANGHAI

Office 301, Building 12, Lane 2328 Chun Sheng
Minhang District C.P. 201100
Tel. +86-21-54993845
Fax. +86-21-54992467
Shanghai, People's Republic of China.

MEXICO

Pafnuncio Padilla 26 Piso 3, Despacho 329
Ciudad Satélite, Naucalpan de Juárez,
Estado de México. C.P. 53100
Tel. +52-55-2455-5901

ARGENTINA

Av. Argentina 5676
Cp. 1439 Ciudad Autónoma de Buenos Aires
República Argentina
Tel. +54-11-4601-9150

PANAMA

World Trade Center. 1er Piso, Área Comercial
Calle 53 Marbella. Apartado 0832-00155 WTC
Panamá, República de Panamá
Tel. +507 205 1915
Fax. +507 205 1802
sales@cimaindustries.com

GUATEMALA

2da Calle D-8-11 zona 16
Col. Lourdes Cp. 01016
Ciudad de Guatemala, Guatemala Centro
Tel. +502-5966-0585

CHILE

Alcántara 200 piso 6
Las Condes
Santiago de Chile, Chile
Tel. +56-2369-5637

COSTA RICA

Itskatzú, Suite 203, 2do Piso
Escazú, San José, Costa Rica
Tel. +506-2588-2505
Fax. +506-2288-2245

COLOMBIA

Carrera 36 No. 25A – 34
Bogotá, Colombia
Tel: 571 –3379771

EGYPT

11Emad El Din Calle
Egipto
Tel. +202-2450-7094/5

USA

256 Airport Road
Fall River,
MA 02720, USA
Tel. +1 508 456 2714

VENEZUELA

Av. Francisco de Miranda,
Edificio Centro Seguros La Paz,
Ala Oeste, Piso 8, Oficina N81E,
La California Norte.
Caracas, Venezuela C.P. 1060
Tel: +58 212-823.2340

BRAZIL

Gessy Lever, 869
Lenheiro, Valinhos 13.272-000
São Paulo, Brasil
Tel: +55-19-3295-8362

PERU

Huancavelica 228,
segundo piso
Santa Patricia La Molina.
CP 12 Lima-Perú.
Tel. +52 1221 3377

GERMANY

BRACE GmbH
Am Mittelberg 5, D-63791
Karlstein am Main. Germany
Tel: +49 6188 991757
Fax: +49 6188 991759
www.brace.de info@brace.de