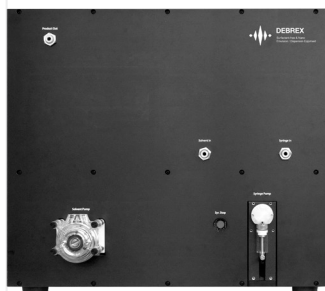


FUST Lab.

DEBREX

Cosmetic Industry



Manufactured by FUST Lab. distributed in the UK and Ireland by **analytik**.

Surfactants in Cosmetic Industry

- > Surfactants play a crucial role in the cosmetics industry and in formulation, it is used for emulsifying
- > However, **surfactants are synthetic chemicals** that pose risks to both human health and the environment.
- > Exposure to surfactants can trigger **allergies, inflammation, atopic dermatitis and hair loss**.
- > They are also a contributing factor to enzymatic dysfunction, immune imbalances, thyroid and liver disorders, breast cancer, and known to possess teratogenic effects.
- > In terms of environment impact, they generate **toxic byproducts** that can disrupt the ecosystems.
- > Despite these negative impacts, heavy surfactants use persists due to the limitations in manufacturing technology.
- > To address this, **DEBREX has pioneered a new emulsification technique that allows for development of a new surfactant-free cosmetics category.**

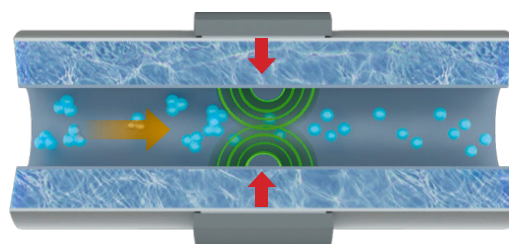
Problems of Surfactant in Cosmetics



Development of Surfactant-Free Cosmetic Formulation Using Ultrasonic Focusing Technology

A cylindrical ultrasonic generator concentrates ultrasonic energy creating an intense focal point. As the sample flows through these focal point at a controlled rate, the sample undergoes uniform emulsification and dispersion. The ultrasonic generator is housed in a cylinder with an internal cooling system that regulates working temperature, prevents the sample from thermal damage.

Our technology produces more uniform results compared to traditional surfactant use, eliminating the inherent problems caused by surfactants, allowing the development of safer and more stable cosmetic formulations.



Metering Pump

- Accurate dosage control possible

Standard Pump**Display Control**

- All functions controllable
- Flow rate control, Power/Frequency Control, Washing function, Real-time tracking, Cumulative usage time display

**DEBREX LAB Lab Scale Equipment**

(Specialized in Dispersion/Emulsion Formulation Development)

Dimensions & Weight

Focused Ultrasonic Processor	512mm(W) * 362mm(D) * 470mm(H) 42kg
Generator	461mm(W) * 420mm(D) * 342mm(H) 34kg
Display Controller	461mm(W) * 420mm(D) * 241mm(H) 19kg

Performance Specification

Power	<ul style="list-style-type: none"> • Controller Input Voltage : AC100V ~ 240V, 50/60Hz • Generator Input Voltage : AC220V, 50/60Hz • Power Consumption : AC220V(1.1kW) • Current : AC220V(5.0A) • Power Type : Single-phase
Operating Frequency	350kHz ~ 420kHz
Output Power	MAX 100W
Solvent Pump	Flow Rate : 0~100mL/min(resolution: 5mL/min)
Syringe Pump & Syringe	<ul style="list-style-type: none"> • Input Flow Rate : 0.5 ~ 5.0mL/min (resolution: 0.1mL/min) • Output Flow Rate : 0.3 ~ 5.0 mL/min (resolution 0.1mL/min) • Syringe Volume: 5mL
Cooling System	External Cooling Circulator Required

DEBREX SS Pilot Scale Production**Basic Specification**

Specification	Details
Dimensions & Weight	<ul style="list-style-type: none"> • Focused Ultrasonic Processor <ul style="list-style-type: none"> - 915mm(W) * 520mm(D) * 340mm(H), 42kg • Generator_V2 <ul style="list-style-type: none"> - 915mm(W) * 520mm(D) * 340mm(H), 42kg • Controller_V2 <ul style="list-style-type: none"> - 485mm(W) * 530mm(D) * 230mm(H), 19kg

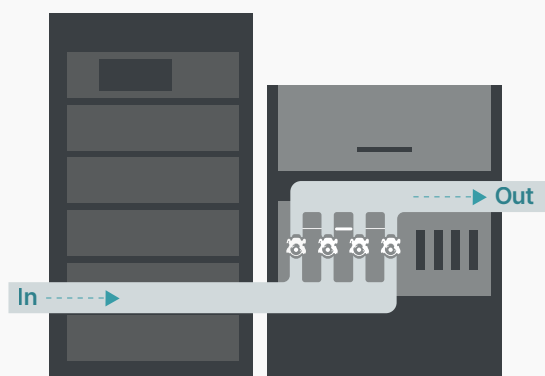
Performance Specification

Specification	Details
Power Specifications	<ul style="list-style-type: none"> • Input Voltage: AC100V ~ 240V, 50/60Hz • Power Consumption: 880W(AC220V), 700W(AC100V) • Current: 4A(AC220V), 7A(AC100V) • Power Type: Single-phase
Operating Frequency	350kHz ~ 420kHz
Output Power	MAX 100W
Solvent Pump	<ul style="list-style-type: none"> • Flow Rate: 0~500mL/min
Syringe Pump & Syringe	<ul style="list-style-type: none"> • Input Flow Rate: 0.5 ~ 500mL/min • Output Flow Rate: 0.5 ~ 100mL/min • Syringe Volume: 50mL
Cooling System	External Cooling Circulator Required, see specifications

DEBREX PX Production Scale Equipment

Consistent Performance, Scalable Production

- > Production capacity of over 500 kg/day
- > At least 8 inlets allow formulations without pre-treatment
- > Automated Dispersion/Emulsification System
- > Enhanced production efficiency with automatic scanning
- > Touchscreen control for seamless operation



DEBREX PX Production Scale Equipment

Basic Specification

Specification	Details
Dimensions & Weight	• Focused Ultrasonic Processor - 1250mm(W) * 900mm(D) * 1530mm(H) (Door Open: 2200mm(H)). 313kg
	• Control RACK : 700mm(W) * 900mm(D) * 1820mm(H), 1SET(260kg) - Generator_V2 : 580mm(W) * 530mm(D) * 230mm(H), 25kg * 4SET - Controller_V2 : 580mm(W) * 530mm(D) * 230mm(H), 19kg * 1SET - Power Supply : 580mm(W) * 530mm(D) * 125mm(H), 12kg * 1SET

Performance Specification

Specification	Details
Power Specifications	• Input Voltage : AC100V ~ 240V, 50/60Hz • Power Consumption : 3.5kw(AC220V), 2.9kw(AC100V) • Current : 16A(AC220V), 29A(AC100V) • Power Type : Single-phase
Operating Frequency	350kHz ~ 420kHz
Output Power	MAX 100W
Solvent Pump	• Flow Rate : 0~500mL/min • Solvent Pump : 4ea
Syringe Pump & Syringe	• Input Flow Rate : 0.5 ~ 500mL/min • Output Flow Rate : 0.5 ~ 100mL/min • Syringe Volume : 50mL • Syringe Pump : 4ea
Cooling System	External Cooling Circulator Required, see specifications

Leading the industry through surfactant-free formulations



Surfactant-free

Non-Toxic Product

Surfactant-free formulation that **does not trigger dryness, itchiness and skin sensitivity**



Surfactant-free

Revolutionary Sun-care

Formulation of surfactant free sun care products that can achieve SPF50+ protection, capable of coverage and high skin dispersibility with just a small amount



Surfactant-free

Eco-friendly/Cruelty Free Solutions

Eliminates previously **animal-tested synthetic surfactants** from formulations



Surfactant-free

Color Cosmetic Development

Uniformly dispersed, nano-scale material enables the development of color cosmetics with **longer shelf life and more striking colors**

DEBREX Advantages

- > **Automated Dispersion/Emulsification System with real-time resonant frequency monitoring**
- > **Precision Power & Frequency Controls for optimal formulation**
- > **Cooling System to prevent thermal damage of samples**
- > **Automated Cleaning Function** : Convenient and simple cleaning function allows the development of different formulation consecutively.
- > **Running Time Tracking Function** : Monitors the operational status and working time
- > **Intuitive Display Control** : Allows the entire control via a few buttons on the display

DEBREX Lineup



DEBREX LAB

Lab Scale Equipment
(Specialized in Dispersion/
Emulsion Formulation Development)



DEBREX SS

Pilot Scale Production



DEBREX PX

Production Scal

Formulate a New Product Line of Surfactant-Free Cosmetics

Removing surfactants from cosmetic formulations paves the way for a **new generation of skincare, offering allergen-free, high-performance, and cleaner beauty products.**

Sales Representative



Our sales team go beyond simply selling equipment—we strive to be a true partner to our customers. By deeply understanding our clients' needs and leveraging our technical expertise, we help maximize the performance and impact of our technology, ensuring the best possible outcomes together.

Application Team



Based on our history of extensive expertise and research experience, we monitor and analyze cosmetic trends and actively contribute to the development of innovative formulations that exceeds customer expectations.

Equipment Team



Our dedication to innovation drives us to develop increasingly advanced equipment with ongoing updates and improvements for our clients.

Quality Assurance and Manufacturing



With a rigorous management and supervision system led by experienced QC and QA professionals, we conduct thorough inspections of each part of equipment, ensuring a transparent manufacturing process and the highest level of credibility.

PARTNERS & CUSTOMERS

