



Laboratory High Pressure Homogenizer



STANDARDS

IEC 61010-1

IEC 61326-1

Laboratory High Pressure Homogenizer - QualiHG™ Lab

QualiHG™ Lab Homogenizer is a compact, bench-ready system designed for high-pressure emulsification, dispersion, and biological sample processing. It applies controlled pressure through a homogenizing valve to reduce droplet and particle size for stable, uniform results.

The platform supports lab-scale output with adjustable flow, making it a practical choice for R&D and small-batch preparation. A cooling circulation design is commonly used in this class of equipment to help manage heat at the homogenizing head during processing.

QualiHG™ Lab is built for workflows where consistent homogenization conditions matter, especially when samples vary in viscosity or stability. Pressure and flow settings let teams tune the process for repeatability across different formulations.

The system is suited for routine laboratory use, with a small footprint and simplified operation for daily sample preparation. Two model options support different flow needs while keeping the same pressure class.

APPLICATIONS

Laboratory High Pressure Homogenizer - QualiHG™ Lab Applications

- Cell disruption and bioengineering sample prep

- High-pressure processing helps break down cells and improve uniformity before extraction or analytical steps. This fits bioengineering and bioprocess development labs that need repeatable disruption conditions.
- Biopharmaceutical and formulation R&D
 - Homogenization supports lipid and suspension-type systems where smaller particle size improves stability and batch consistency. It also supports screening work where teams compare pressure, pass count, and flow effects on outputs.
- Food, beverage, and cosmetics emulsions
 - High-pressure homogenization can improve dispersion uniformity and help stabilize emulsions that separate during storage. It is commonly evaluated in beverage, personal care, and similar formulation work where texture and appearance depend on droplet distribution.
- Materials dispersion and fine mixing
 - Pigments, dyes, and functional suspensions often need controlled size reduction and even distribution. High-pressure processing helps reduce agglomerates and supports smoother, more consistent dispersions.



Standards

- IEC 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use.
- IEC 61326-1: EMC requirements (immunity and emissions) for laboratory and measurement equipment.

FEATURES

Laboratory High Pressure Homogenizer - QualiHG™ Lab Key Features

- Bench-ready Homogenizer designed for laboratory sample processing and small-batch output.
- High-pressure capability for emulsification, dispersion, and biological disruption workflows.
- Adjustable flow control approach for matching different formulations and throughput needs.
- Optional configurations support different lab workflows and sample types.
- Compact dimensions that fit common lab benches and prep rooms.

THEORY & METHOD

Theory and Method

Theory

A high-pressure Homogenizer forces a liquid through a very small valve gap under pressure. The rapid pressure drop and high-velocity flow create shear, turbulence, and cavitation that break droplets and reduce particle size. These mechanisms help produce stable emulsions and uniform suspensions when processing conditions are controlled.

Method

1. Prepare a pre-mix that can flow without clogging.
2. Set target pressure and choose a flow rate for the formulation.
3. Process one or more passes based on size and stability targets.
4. Verify results, then adjust pressure or passes for repeatability.

TECHNICAL SPECIFICATIONS

Laboratory High Pressure Homogenizer - QualiHG™ Lab Technical Specification

Specification	QualiHG™ Lab 150	QualiHG™ Lab 300
Flow rate	6–12 L/h	12–15 L/h
Maximum working pressure	1500 bar	
Maximum product viscosity	2000 cP	
Motor power	1.5 kW	3.0 kW
Overall dimensions (L×W×H)	800 × 460 × 450 mm	840 × 620 × 540 mm
Maximum product temperature	90°C	
Maximum steam temperature	121°C	
Maximum feed particle size	< 500 µm	



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