Биореактор 15 л для микробной ферментации Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Киргизия +996(312)-96-26-47
Казахстан +7(7172)727-132

fba@nt-rt.ru || https://froilabo.nt-rt.ru/

15L Bioreactor for Microbial Fermentations

Novel magnetically coupled drive: eliminates the risk of contamination within the vessel since there is no mechanical seal.

Mixing and aeration: tailored for microorganisms (fungi, yeast or bacteria).

Autoclavable sampling port: The sterilisable port facilitates operational activities.

Uniform lid construction: No welded components within the lid for easy maintenance and sterility.

Flexible working volume: 15 L bioreactor with working volume up to 11 L.

Product Description

Our 15 L stirred tank bioreactor is designed for microbial fermentations though may be adapted for cell cultivation. The autoclavable microbial bioreactor is ideal for use within R&D and process development. The borosilicate glass vessel is mounted between a jacketed base and a non-welded lid.

The uniform lid features all the necessary ports and sensors that might be required for bioprocesses and features a convenient carrying handle. Featuring twelve ports comprising of five ports for sensor connections, three ports for bioreactor's liquid supply, two ports for gas sparger and gas output and two spare ports that can be user defined.

There is a sterilisable sampling port conveniently located in the base of the vessel to facilitate operational activities during a process. The overall design of the reactor is simple to maintain and apply basic operations and processes.

The magnetically coupled drive which can reach up to 700 rpm ensures excellent sterility within the vessel throughout fermentation.

The bioreactor process control ensures:

Temperature (the temperature sensor (Pt100) is located in the bioreactor tank) regulation. Carried out by supplying a control signal either to the heating element or the electro-magnetic cooling water valve of the thermostat. Thermoregulation is carried out by circulation of thermostated water through the bioreactor's jacket, which is located in the bottom lid of the vessel;

pH control. Carried out by supplying base or acid solutions to the bioreactors medium using the bioprocess controller's peristaltic pumps;

pO_2 control. Ensured by automatic adjustments of the stirrer's rotational speed. The actual pO_2 value is monitored using a pO_2 electrode;

Foam control. Carried out by supplying an antifoam agent to the bioreactor's medium using the bioprocess controller's peristaltic pumps. The foam level is monitored using a conductivity sensor;

Feeding (of a substrate). Carried out using the bioprocess controller's peristaltic pump and the respective feeding rate/volume is controlled by the

feeding profile, which is set in the bioprocess controller;

6) Level control. Carried out using the bioprocess controller's peristaltic pump. The medium level is monitored using a conductivity sensor;

7) Mixing. Ensured by a magnetic drive (stirrer inner shaft and impellers contain magnets), the agitator is driven by a motor which is mounted on the top lid of the bioreactor.

Specification

Bioreactor 15.1 (microbiology)	
Vessel	
Total Volume (L)	16
Working Volume (L)	5 – 11
Inside Diameter/Inside Height (mm)	200 / 500
Ports	For mixer/agitator shaft; for pH, dissolved oxygen, temperature, foam, and liquid level sensors; tree needle port for acid base and anti-foam agent addition; chemo-stat tubes for level control and addition of bioreactor feed solutions; aseptic pierce-able membrane port; in-let gas port (0.2 µm filter added); exhaust gas port (0.2 µm filter added); 2 spare ports/ The ports are 4×10 mm, 4 x 7.5 mm – 7×12 mm (PG 13.5 mm)
Sampling	Double walled base ensuring bioreactor thermostating. Autoclavable aseptic sampler
Aeration	
Control	Rotameters (2), TMFC (optional)
Gas Supply	Air and oxygen
Flow Range, L/min	0.5 – 20 (Air) or 0 – 10 (O_2)
Sparger	Ringsparger
Filters	D50 mm 0.2 µm PTFE

Bioreactor 15.1 (microbiology)	
Exhaust gas condenser	Cooling from water line or chiller
Mixing	
Drive	Top magnetic coupling
Rotation Speed Range (rpm)	40 – 700
Mixer (Impellers)	3 standard Rushton turbines
Control	
Controller	Siemens Simatic S7 – 1500
Operator panel	Touch screen Beetronics, 15TS7, 15”
Temperature	Control limits: from 5°C above cooling water up to 60 °C. Measurement accuracy +/- 0.1 °C and control accuracy +/- 0.2 °C. Built-in thermostat
pH	Hamilton sensors (different options, including ARC). Acid/ Base 2 – 12 +/- 0.01pH units
pO_2	Hamilton sensor. (different options, including Arc). Control: mixing + O_2 +feeding 0 – 150 % +/- 1%
Foam	Conductivity sensor
Feeding	0.02-40 ml/min according to the set profile
Peristaltic Pumps	4 built-in peristaltic pumps. External pump (option)
Dimensions (mm)	Overall dimensions of the bioreactor (mm) 1000 (W) x 970 (H) x 600 (D) The minimum size of the autoclave chamber for vessel autoclaving (mm) 760 (Height) x 320 (Diameter))

Options

Bioreactor	Product Option

Bioreactor	Product Option
15 L Microbial Bioreactor	Optical density sensor with ARC view 265 transmitter and accessories (Hamilton)
	Viable cell density sensor with ARC view 265 transmitter and accessories (Hamilton)
	Methanol/ethanol gas sensor (BlueSens)
	Methanol/ethanol immersed sensor (Raven Biotech)
	Overpressure sensor, autoclavable, 0-1 bar, measuring accuracy +/- 0.02 bar
	Overpressure control, 0-1 bar, control accuracy +/- 0.0 bar.
	O_2/CO_2 analyzer BlueInOne Ferm (BlueSens), including flow adapter
	Mass flow controller for air
	Mass flow controller for O_2
	Volumetric oxygen mass transfer coefficient kLa, Oxygen uptake rate OUR, CO_2 exchange rate CER (includes overpressure sensor and O_2/CO_2 analyzer)
	Rushton turbine set with bushings
	Microsparger
	Factory accepted test FAT
	SCADA for monitoring, control and reporting according the requirements of 21 CFR Part 11

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Киргизия +996(312)-96-26-47
Казахстан +7(7172)727-132

fba@nt-rt.ru || https://froilabo.nt-rt.ru/