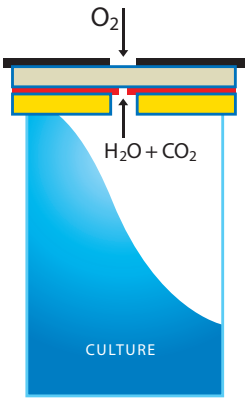
Micro-Flask by Duetz, cultivation in microtiter plates

The Micro-Flask system facilitates reproducible and reliable culturing on microtiter plates. The system consists of sandwich covers, cover clamps and cryo-replicator. The Micro-Flask enables a single person to grow and test thousands of strains simultaneously with a minimum of repetitive handling.

Features

- Conversion of 24 and 96 microtiter plates (both deep- and low-well plates) into individual micro-reactors
- Low and uniform evaporation rates for every well
- Sterile barrier for individual wells prevents cross contamination
- Oxygen transfer rates similar to shake flasks in standard orbital shakers
- Simultaneous and reproducible sampling of 96 frozen glycerol stocks



Applications

- High throughput screening and distribution of mutant and construct libraries e.g. in E. coli or yeast
- Metabolic flux studies and high-throughput screening for high activity prokaryotic or eukaryotic mutants
- Comparative studies, e.g. clinical isolates
- Growth medium optimization for cell lines or production strains

Specifications

Type of microtiter plate	Well volume	Culture volume	Orbital shaking frequency	Shaking amplitude	O_2-transfer rate (30˚C, air, 1 bar)	Headspace refreshment rate	Evaporation rate per well (at 30˚C)	Mixing pattern at 300 rpm ampl. 25 mm	Mixing pattern at 300 rpm ampl. 50 mm
24-square deep-well polypropylene, 17x17 mm, depth 40 mm	11000 µl	2500 µl 2500 µl 2500 µl 4000 µl 4000 µl	300 rpm 300 rpm 220 rpm 300 rpm 220 rpm	50 mm 25 mm 50 mm 50 mm 25 mm	51 mmol O_2 / l / h 39 mmol O_2 / l / h 35 mmol O_2 / l / h 24 mmol O_2 / l / h 24 mmol O_2 / l / h	2.5 ml / min (1 VVM) 2.5 ml / min (0.6 VVM)	**50% humidity:** 50 µl H_2O per day **75% humidity:** 25 µl H_2O per day	 2500 µl	 2500 µl
24-round low-well polystyrene, ∅ 16 mm, depth 18 mm	3000 µl	750 µl 750 µl 1000 µl 1000 µl	300 rpm 300 rpm 300 rpm 300 rpm	50 mm 25 mm 50 mm 25 mm	40 mmol O_2 / l / h 25 mmol O_2 / l / h 30 mmol O_2 / l / h 19 mmol O_2 / l / h	1.1 ml / min (1.4 VVM) 1.1 ml / min (1.1 VVM)	**50% humidity:** 30 µl H_2O per day **75% humidity:** 15 µl H_2O per day	 1000 µl	 1000 µl
96-square deep-well polypropylene, 8x8 mm, depth 40 mm	2400 µl	500 µl 500 µl 750 µl 750 µl 1000 µl 1000 µl	300 rpm 300 rpm 300 rpm 300 rpm 300 rpm 300 rpm	50 mm 25 mm 50 mm 25 mm 50 mm 25 mm	38 mmol O_2 / l / h 12 mmol O_2 / l / h 24 mmol O_2 / l / h 7 mmol O_2 / l / h 18 mmol O_2 / l / h 3 mmol O_2 / l / h	1 ml / min (2 VVM) 1 ml / min (1.3 VVM) 1 ml / min (1 VVM)	**50% humidity:** 22 µl H_2O per day **75% humidity:** 11 µl H_2O per day	 750 µl	 750 µl
96-round low-well polystyrene, ∅ 6.5 mm, depth 11 mm	380 µl	100 µl 100 µl 150 µl 150 µl 200 µl 200 µl	300 rpm 300 rpm 300 rpm 300 rpm 220 rpm 300 rpm	50 mm 25 mm 50 mm 25 mm 50 mm 25 mm	39 mmol O_2 / l / h 20 mmol O_2 / l / h 32 mmol O_2 / l / h 16 mmol O_2 / l / h 12 mmol O_2 / l / h 12 mmol O_2 / l / h	250 µl / min (2.5 VVM) 250 µl / min (1.7 VVM) 250 µl / min (1.3 VVM)	**50% humidity:** 6 µl H_2O per day **75% humidity:** 3 µl H_2O per day	 150 µl	 150 µl