MANÁFOOD® - BOX2-HF

Static or Dynamic gas mixer for mixing between two to four gases, with adjustment of the gas concentration from 0 to 100%, control of the flow rate and outlet pressure of the gas mixture. Also includes safety valves and sintered filters for the mixer inlet doors.

Suitable for food preservation/conservation of MAP – Modified Atmosphere Packaging, aiming to increase shelf life, preserving flavor, shape, color and freshness and maintaining the quality of the food.

Inside the food packaging, the atmosphere that protects, preserves and prolongs the food´s life is achieved by combining CO2, (Carbon Dioxide), N2 (Nitrogen), O2 (Oxygen) and some cases CO (Carbon Monoxide). Depending on the food to be packaged, the gas mixture changes as well as each gas content. Others gases can also be included to the food grade gas mixture.

The Static or Dynamic gas mixer **MANÁFOOD®** can generate mixtures of gases for modified atmospheres packaging or storage of the most diverse food products, including beef, pork, fish, bread, fresh pasta, fruit, vegetables, eggs, sausages (salami, ham, …), frozen meals, cheese, milk, etc.

BENEFITS

- **RETURN on INVESTMENT (ROI), SAVINGS and PROFITABILITY**
  Due to the high monthly consumption and its cost, food grade premixed gas mixture packaged in high-pressure cylinders can greatly affect the final cost of the food product. With the gas mixer **MANÁFOOD®**, meat processing companies (beef, pork, poultry, etc.), bread, pasta, cookies manufacturers, coffee powder producers, ... all are able to blend, on site, their own gas mixtures from pure gases and most of the time, the ROI is under 12 months.

- **FLEXIBILITY – REACH THE MOST SUITABLE GAS MIXTURE FOR EACH FOOD / MAP (Modified Atmosphere Packaging)**
  Different foods and packaging require different mixtures of gases for better performance in terms of increased shelf life. The Static or Dynamic gas mixer **MANÁFOOD®** generates custom gas mixture according to each food product characteristics, and in addition, the final user can change the gas mixture any time, in a matter of seconds.

- **ELIMINATES STOCK AND HANDLING CYLINDERS WITH SEVERAL DIFFERENT GAS MIXTURES**
  Having the freedom to generate your own gas mixtures saves time and money, as it reduces the number of premixed gas mixture packaged in high-pressure cylinders.

- **HOMOGENEOUS GAS MIXTURES**
  Premixed gas mixture packaged in high-pressure cylinders can have their gas components become separated (stratify) if stored for a long time. The food grade gas mixtures generated by **MANÁFOOD®** are homogeneous, stable and with high accuracy (%) content, thus eliminating the risk of stratification.

MANÁFOOD BOX2-HF models	100 / 200 / 370 / 450 / 900
Gases	Food Grade Gases
Gas mixture range	From 0 to 100% or static gas mixture
Gas mixture accuracy	Better than ± 2% abs.
Gas mixture outlet flow rate	Please check the tables below
Maximum pressure gradient between gases	3 bar
Maximum inlet pressure	20 bar (mod.-100) 25 bar (other models)
Outlet pressure	Please check the tables below
Inlet and outlet doors BOX 2 HF	G 1 " (inert gases)
Inlet and outlet doors BOX 2 HF	G 1 " ESQ (flammable gases)
Dimensions (height x width x length)	350 x 500 x 550(mm)
Receiver	550 L (minimum) – not included
Weight (kg)	12

MANÁFOOD BOX2-HF100-2 – Pressure x Flow rate

Flow rate MANÁFOOD BOX2 HF100-2 in Nm3/hour

minimum gas mixture flow rate outlet of 0,5 m3/h

Minimum Inlet Pressure (bar) (max. 20 bar)	Outlet Pressure (bar) 0,5	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
4,0	2,7	2,1	-	-	-	-	-	-	-	-	-	-	-	-	-
5,0	4,9	4,3	2,7	-	-	-	-	-							-
6,0	7,6	7	5,5	3,4	-	-	-	-	Important: For applications with CO2 and O2, please contact MANÁGAS						-
7,0	10,5	10,1	8,5	6,5	3,8	-	-	-							-
8,0	14,5	14	12,6	10,5	8,2	5	-	-	-			-			-
9,0	18,5	18,1	16,8	14,8	12,3	9,4	5,8	-	-	-	-	-	-	-	-
10,0	22,4	22	20,7	18,9	16,5	13,6	9,9	6	-	-	-	-	-	-	-
11,0	26,7	26,6	25,5	23,7	21,6	19	15,8	12,3	8,2	-	-	-	-	-	-
12,0	30,2	29,8	29,1	27,5	25,3	22,8	19,7	16,1	12,5	8	-	-	-	-	-
13,0	35	34,9	33,9	32,5	30,3	28	24,9	21,6	17,6	13,3	8,5	-	-	-	-
14,0	40,2	39,7	39	37,9	36,1	34,2	31	27,5	23,8	19,4	14,8	9,7	-	-	-
15,0	47,2	46,9	46,5	45	43	39	36,5	33,5	30,1	25,8	20,9	15,6	10,2	-	-
16,0	50,3	50,3	49,8	48,6	47	44,8	42,3	39,4	36,1	32,6	26,6	22,5	16,9	10,9	-
17,0	56,7	56,3	55,5	54,5	52,8	50,8	48,5	45,9	42,8	39,4	35,3	30,5	24,5	18,6	12,5

MANÁFOOD BOX2-HF200-2 – Pressure x Flow Rate

Flow rate MANÁFOOD BOX2 HF200-2 in Nm3/hour

minimum gas mixture flow rate outlet of 1 m3/h

Minimum Inlet Pressure (bar) (max. 25 bar)	Outlet Pressure (bar)														
	0,5	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
4,0	5,9	3,7	-	-	-	-	-	-	-	-	-	-	-	-	-
5,0	12,1	8,4	5,1	-	-	-	-	-							-
6,0	17,4	14,5	11,3	6,9	-	-	-	-	Important: For applications with CO2 and O2, please contact MANÁGAS						-
7,0	24,2	21,2	18,1	13,9	8,3	-	-	-							-
8,0	32	28,7	25,6	21,6	16,1	9,7	-	-							-
9,0	39	36,9	33,8	30,1	25	18,7	10,5	-	-	-	-	-	-	-	-
10,0	46,4	45	42,7	38,7	33,7	28	20,5	11,4	-	-	-	-	-	-	-
11,0	54	53,4	51,3	48,4	44,3	39	32,4	24,4	14,3	-	-	-	-	-	-
12,0	61,7	61,1	59,3	56,6	52,9	48,1	42	34,9	25,9	14,9	-	-	-	-	-
13,0	70	69,6	68,1	65,7	62,3	58	52,7	45,9	37,7	27,8	15,4	-	-	-	-
14,0	77,2	76,9	75,6	73,4	70,4	66,6	61,7	56,4	48,9	40,3	29,2	16,6	-	-	-
15,0	84,9	84,6	83,6	81,7	78,8	75,2	70,9	65,4	59,1	51,3	42,2	30,2	17,7	-	-
16,0	92,5	92,3	91,6	90,2	88,2	85,1	81,6	76,8	70,8	64,2	55,8	46,5	33,6	19,5	-
17,0	99,3	99	98,7	97,3	95,5	92,9	89,3	85,2	79,7	73,4	66,1	57,4	47,1	35,6	19,9

MANÁFOOD BOX2-HF370-2 – Pressure x Flow Rate

Flow rate MANÁFOOD BOX2 HF370-2 in Nm3/hour

minimum gas mixture flow rate outlet of 2 m3/h

Minimum Inlet Pressure (bar) (max. 25 bar)	Outlet Pressure (bar)														
	0,5	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
4,0	11,4	9,2	-	-	-	-	-	-	-	-	-	-	-	-	-
5,0	19,4	17,4	11,4	-	-	-	-	-							-
6,0	29,1	27,5	22,3	14,2	-	-	-	-	Important: For applications with CO2 and O2, please contact MANÁGAS						-
7,0	38,3	37	32,8	26,5	16,3	-	-	-							-
8,0	47,4	46,3	42,9	37,8	30,3	18,6	-	-							-
9,0	57,5	57,3	54	49,5	43,2	34,5	21,6	-	-	-	-	-	-	-	-
10,0	67,7	67,2	64,8	60,9	55,6	47,1	37,3	22,3	-	-	-	-	-	-	-
11,0	78,9	78,4	76,5	74,5	70	63,2	54,1	41,4	24,9	-	-	-	-	-	-
12,0	87,8	87,5	86,2	83,9	80,8	75,8	68,5	58,8	45,2	27,5	-	-	-	-	-
13,0	94,8	94,6	93,7	91,5	88,8	85,2	80,3	73,5	63,2	48,8	29,2	-	-	-	-
14,0	102,9	102,7	101,9	100,3	97,8	94,3	90,3	85,2	77,8	66,7	51,7	31,3	-	-	-
15,0	111	111	110,3	108,8	106,7	103,6	100,1	94,7	89,3	82	70,2	54,6	32,3	-	-
16,0	120,6	120,6	120,4	119,3	113,9	111,8	109,1	105,4	101,3	95,8	87,8	74,3	58,2	35,5	-
17,0	133,7	133,7	133,7	129,9	129,5	128,2	126,3	120,7	116,8	112,8	104,4	92,9	79,6	61,9	37,6

MANÁFOOD BOX2-HF450-2 – Pressure x Flow Rate

Flow rate MANÁFOOD BOX2 HF450-2 in Nm3/hour

minimum gas mixture flow rate outlet of 2 m3/h

Minimum Inlet Pressure (bar) (max. 25 bar)	Outlet Pressure (bar)														
	0,5	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
4,0	11,6	9,4	-	-	-	-	-	-	-	-	-	-	-	-	-
5,0	21,2	19,1	13	-	-	-	-	-							-
6,0	33	30,8	24,9	16,3	-	-	-	-	Important: For applications with CO2 and O2, please contact MANÁGAS						-
7,0	45,2	43,2	37,3	29,1	18	-	-	-							-
8,0	61	59	52,6	45,3	35,5	22,3	-	-							-
9,0	75,1	73,5	68,7	65,4	52,9	40,6	25,6	-	-	-	-	-	-	-	-
10,0	89,8	88,6	84,2	81,6	69,2	58,6	44,6	27,1	-	-	-	-	-	-	-
11,0	109,1	108,6	104,6	98,9	90,6	79,7	66,7	50,7	31,2	-	-	-	-	-	-
12,0	124,2	124,1	121	115,1	108,8	99,1	87,4	72,2	55	33,5	-	-	-	-	-
13,0	138,4	138,1	1365	132,1	126,1	119,3	109,3	94,9	79,1	59,9	36,3	-	-	-	-
14,0	152,1	152	150,1	146,1	141,5	134,9	126,6	115,5	101,7	84,7	63,5	37,8	-	-	-
15,0	166,1	166,1	165,6	162,1	158,1	153,2	145,6	136,7	124,1	109,7	91,3	68,1	40,1	-	-
16,0	182,2	182,2	170,1	177,7	174,1	168,5	162,8	154,2	145,1	133,2	117,5	97,2	73,4	43,7	-
17,0	196,2	196,2	195,9	191,4	184,3	178,2	176,3	172,4	164,2	154,1	141,5	124,1	103,3	77,8	45,2

MANÁFOOD BOX2-HF900-2 – Pressure x Flow Rate

Flow rate MANÁFOOD BOX2 HF900-2 in Nm3/hour

minimum gas mixture flow rate outlet of 4 m3/h

Minimum Inlet Pressure (bar) (max. 25 bar)	Outlet Pressure (bar)														
	0,5	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
4,0	24,2	19,8	-	-	-	-	-	-	-	-	-	-	-	-	-
5,0	41,3	37,4	25,7	-	-	-	-	-							-
6,0	60,7	57,3	46,9	31,7	-	-	-	-	Important: For applications with CO2 and O2, please contact MANÁGAS						-
7,0	80,7	78,3	69,6	55,6	37,7	-	-	-							-
8,0	98,6	96,9	90,4	79,3	62,9	41,1	-	-							-
9,0	118,3	117,8	113,1	105,2	93,4	76	50,4	-	-	-	-	-	-	-	-
10,0	135,4	135,3	131,6	124,8	115,3	102,3	82,8	54,8	-	-	-	-	-	-	-
11,0	150,6	150,6	148,9	143,8	135,8	124,8	109,1	87,2	55,6	-	-	-	-	-	-
12,0	166,2	166,2	166	160,9	154,4	145,4	132,8	117	92,5	58,1	-	-	-	-	-
13,0	182,2	182,2	181,1	178,1	173,7	167,4	157,3	143,4	126,3	102	59,8	-	-	-	-
14,0	205,6	205,6	205,6	201,7	198,8	189,4	180,6	168,3	153,8	133,6	104,3	61,1	-	-	-
15,0	219,2	219,2	219,2	217,4	213,2	207,8	200,6	190,6	178,6	162,1	143,1	112,3	64,3	-	-
16,0	237,2	237,2	237,2	237,1	232,3	228	224,1	215,8	205,6	190,8	173,8	153,7	123,7	72,1	-
17,0	249,5	249,5	249,5	249,4	247	241,2	237,3	232,1	224,9	212,2	198,1	183,2	161,6	129,1	77,6

MANÁFOOD BOX2-HF100-2 / HF 200 / 370 / 450 / 900-2