

## Gas mixer: iMixpro

### Compact gas mixer with integrated constant pressure regulators and diffusion mixing system

Gas mixer range iMixpro for the production of gas mixtures of two or three gas types.

#### Highlights

- Optimal factory calibration according to customer's requirement (within the permissible range)
- Infinitely variable up to 130 m<sup>3</sup>/h (related to Nitrogen)
- **High accuracy, according to ISO 14175**
- No accidental mixture changes
- Mixture production stops automatically when gas supply is interrupted
- **Does not depend on gas withdrawal variations**
- No additional buffer vessel needed for discontinuous withdrawal of gas
- **Does not depend on input pressure differences due to integrated constant pressure regulation**
- Sturdy and compact design, low maintenance
- No power supply required for production of the gas mixture

#### Optional:

- Inlet and outlet pressure regulator (pre-adjusted)
- Integrated gas analysis for process control
- Inlet gas filter GF

#### Maintenance:

Gas mixers are to be tested for leaks at least once a month.

Gas mixers are only to be opened and repaired by the manufacturer.



Technical Data:				
<b>Carrier gas:</b>	Argon (Ar)	Nitrogen (N <sub>2</sub> )		Carbon dioxide (CO <sub>2</sub> )
<b>Additive gas:</b>	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Nitrogen (N <sub>2</sub> ) Oxygen (O)	Carbon dioxide (CO <sub>2</sub> ) Helium (He) Oxygen (O)		Oxygen (O)
<b>Mixing range:</b> depending on composition of the gas mixture	2 mixed gases: 5 – 95 Vol. % 3 mixed gases: Carrier gas: 50 – 95 Vol. % 1. Additive gas: 5 – 25 Vol. %, 2. Additive gas: 5 - 25 Vol. %			
<b>Inlet pressure:</b>	min. 0.4 MPa (4 bar) max. 1 MPa (10 bar)			
<b>Outlet pressure:</b>	0.05 – 0.8 MPa (0.5 - 8 bar) depending on the inlet pressure			
<b>Mixed gas capacity:</b>	50 / 100 / 130 m <sup>3</sup> /h, infinitely variable (related to Nitrogen)			
<b>Mixing precision:</b>	± 0.5 % abs: 1-5 Vol. % additive gas ± 10 % of nominal value: >5-20 Vol. % additive gas ± 2 % abs: > 20 Vol. % additive gas			
<b>Temperature:</b>	-10 bis +50°C			
<b>Connection EN560</b> <b>Gas inlet/Gas outlet:</b>	< 100 m <sup>3</sup> /h:	G1/2RH-M	(optional solder connection for pipe Ø 18mm)	
	> 100m <sup>3</sup> /h:	G1RH-M	(optional solder connection for pipe Ø 28 mm)	
<b>Material:</b>	Housing: sheet steel, powder coated In-built parts: brass, stainless steel, Elastomer Copper, aluminum, anodised			
<b>Measure and weight:</b>	height:	width:	depth:	weight:
<b>without connection</b>	500 mm	500 mm	210 mm	approx. 15-25 kg

Further gas mixer versions for the production of gas mixtures of two or three gases are available on request.

## Type: iMixpro

Flow capacity in Nm<sup>3</sup>/h related to Nitrogen:

Mixed gas capacity: 50m<sup>3</sup>/h

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	18.0	16.5	12.0	-	-	-	-	-	-
5	27.5	25.5	21.5	15.0	-	-	-	-	-
6	33.5	32.5	30.0	25.0	18.5	-	-	-	-
7	42.0	40.0	38.0	34.0	28.5	21.0	-	-	-
8	50.0	48.0	46.5	43.5	38.5	32.5	24.0	-	-
9	57.0	55.5	54.0	52.0	47.5	42.5	34.5	26.5	-
10	63.0	62.0	60.0	59.0	57.0	50.0	47.0	38.0	28.5

Mixed gas capacity: 100m<sup>3</sup>/h

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	36.0	33.0	24.0	-	-	-	-	-	-
5	55.0	51.0	43.0	30.0	-	-	-	-	-
6	67.0	65.0	60.0	50.0	37.0	-	-	-	-
7	84.0	80.0	76.0	68.0	57.0	42.0	-	-	-
8	100.0	96.0	93.0	87.0	77.0	65.0	48.0	-	-
9	114.0	111.0	108.0	104.0	95.0	85.0	69.0	53.0	-
10	126.0	124.0	120.0	118.0	114.0	100.0	94.0	76.0	57.0

Mixed gas capacity: 130m<sup>3</sup>/h

Outlet pressure [barÜ] →	0.5	1	2	3	4	5	6	7	8
Inlet pressure [barÜ] ↓									
4	46.8	42.9	31.2	-	-	-	-	-	-
5	71.5	66.3	55.9	39.0	-	-	-	-	-
6	87.1	84.5	78.0	65.0	48.1	-	-	-	-
7	109.2	104.0	98.8	88.4	74.1	54.6	-	-	-
8	130.0	124.8	120.9	113.1	100.1	84.5	62.4	-	-
9	148.2	144.3	140.4	135.2	123.5	110.5	89.7	68.9	-
10	163.8	161.2	156.0	153.4	148.2	130.0	122.2	98.8	74.1

### Certification/ Technical Standards/ Rules

TRBS German Technical rules for operation safety, DVS German Association for Welding, Cutting and Allied Processes, DGUV German Employer's liability insurance association rules and regulations.

### Standards/ Approvals

Company certified according to  
 ISO 9001:2015 and ISO 14001:2015,  
 CE-marking according to: Pressure Equipment Directive 2014/68/EU

(Subject to change without notice)

The following table shows the correction factors as an example for different gas mixtures.

### Application table

Gas mixture		
% CO <sub>2</sub>	% Ar	Conversion factor
18	82	0.8812
4	96	0.8336
25	75	0.9050

% He	% Ar	Conversion factor
20	80	0.866
60	40	0.958

% O <sub>2</sub>	% Ar	Conversion factor
4	96	0.8224
10	90	0.826

% O <sub>2</sub>	% CO <sub>2</sub>	Conversion factor
50	50	1.02
85	15	0.922

### Application table

Gas mixture		
% CO <sub>2</sub>	% N <sub>2</sub>	Conversion factor
30	70	1.048
5	95	1.008
80	20	1.128

% He	% N <sub>2</sub>	Conversion factor
10	90	1.005

% O <sub>2</sub>	% N <sub>2</sub>	Conversion factor
4	96	0.9952
25	75	0.97