

High-quality compressed air is highly important for many industries, as it has a vital impact in the breathing air applications. Mikropor breathing air purifiers are designed to eliminate hazardous substances in the air conforming to related standards. (Mikropor Breathing Air Purifiers are designed for protection against a range of contaminants that may be present in a compressed air fed breathing air system.)

### Why Should Purify Compressed Air ?

In systems using compressed air, the ambient air is fed to the compressor. The polluted compressed ambient air remains in the system as long as the incoming air polluting components are not removed.

### Where Would You Use Breathing Air Purifier?

Hazardous air pollutants can be released to environment with several applications in various industries. In these industries, it is crucial to eliminate the air pollutants.

### Application Areas

- Shot-blasting
- Spray painting
- Tunnelling
- Confined spaces
- Welding
- Asbestos removal
- Tank cleaning
- Pharmaceutical manufacturing
- High-pressure cylinder filling
- Hospitals

### International Breathing Air Standards

The atmospheric air breathing by livings is composed of approximately 78 percent nitrogen, 21 percent oxygen, and 1 percent with small amounts of many other trace components such as argon, hydrogen, and carbon dioxide. In this regard, for the high-quality breathing air, there are relatively standards including the allowable limits of the specification for each component in the breathing air system.

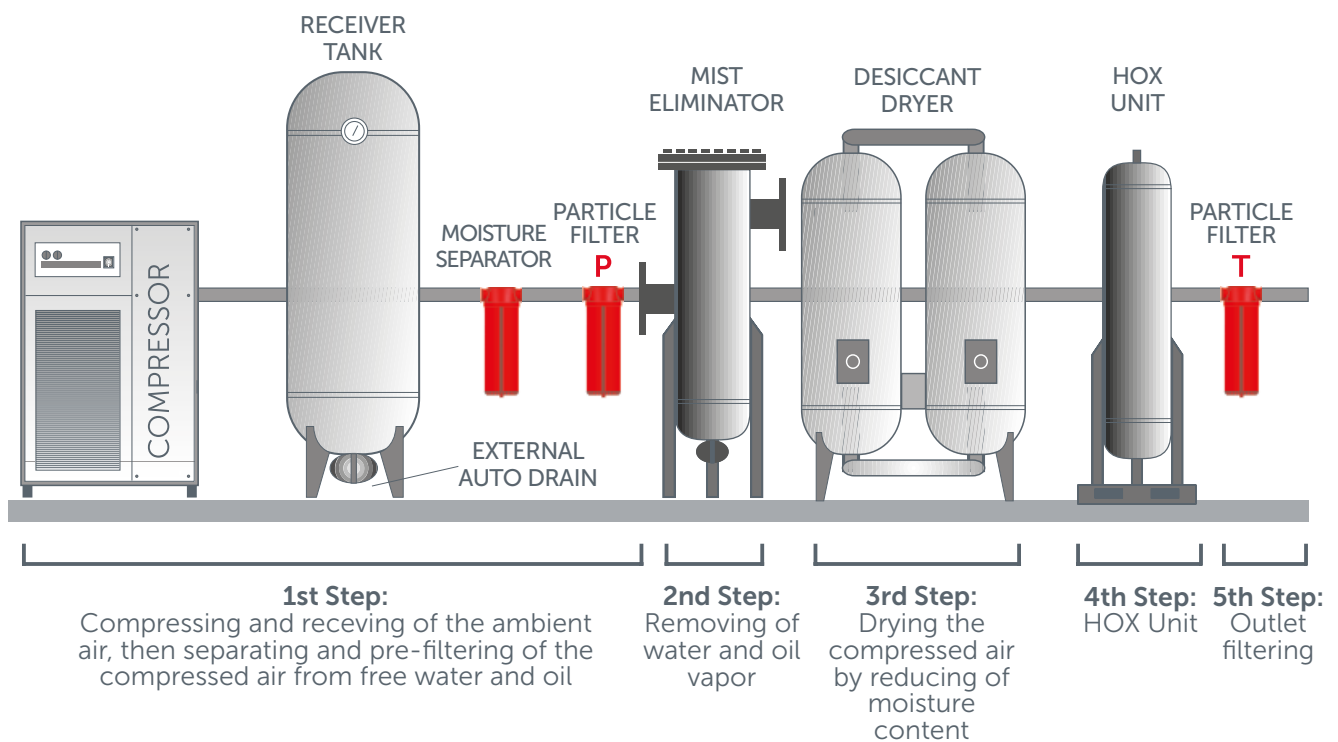
The Breathing Air Purifiers produced by Mikropor comply with the international standards, correlatively.

- OSHA Grade D
- NFPA-99
- CSA Z180.1-00
- CGA G7.1-1997
- EN 12021
- BS 4275
- European Pharmacopoeia
- EN ISO 7396-1:2016
- ISO 14971



**Working Principle**

- 1<sup>st</sup> Step:** Water and the oil droplets in the compressed air separated with help of the moisture and particle separators down to 1 micron.
- 2<sup>nd</sup> Step:** Removing water and oil vapour down to 0.01 mg/m<sup>3</sup> with Mikropor Mist Eliminator
- 3<sup>rd</sup> Step:** Reducing with a heatless desiccant dryer of moisture content to a pressure dew point of -40°C / -40°F, removing any risk of condensation, bacteria, and mold growth.
- 4<sup>th</sup> Step:** In HOX unit oil vapour and odour are eliminated with activated carbon granules and, CO gas in the air is converted to CO<sub>2</sub> down to 0.003ppm with the catalyst granules in the unit.
- 5<sup>th</sup> Step:** Removal of the remaining dust particles down to 0.01 micron.



**Desiccants and Catalysts for Removal Impurities**

Component	Hazardous	Desiccant/Catalyst
Water/Moisture	Moisture inside compressed breathing air can freeze, causing damage to the cylinder or regulator equipment. Can degrade the catalyst system filter system, reduce the lifetime of the Activated Carbon.	Activated Alumina & Molecular sieve
Hydrocarbons, Oils, and Odor	Carcinogenic and the oils may build up over time in the lungs.	Activated Carbon
Carbon Monoxide	Binds with hemoglobin in the body and disrupts the flow of oxygen to the body, resulting in death at high exposure.	H-OX Catalyst

**Technical Specifications**

Model	Capacity		Connection Size	Mist Eliminator Model	Particle (T) Filter Model	T Filter Element	Max. Working Pressure (bar)	Voltage
	(m <sup>3</sup> /h)	(scfm)						
MBS 5	10	5	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 10	20	10	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 15	25	15	1/2"	G-ELM-100	GON-35	MON35	16	115-240V/50-60Hz
MBS 20	35	20	1/2"	G-ELM-100	GON-55	MON55	16	115-240V/50-60Hz
MBS 25	45	25	1/2"	G-ELM-150	GON-55	MON55	16	115-240V/50-60Hz
MBS 30	50	30	1/2"	G-ELM-200	GON-55	MON55	16	115-240V/50-60Hz
MBS 40	70	40	1 1/2"	G-ELM-250	GON-300	MON300	16	115-240V/50-60Hz
MBS 50	85	50	1 1/2"	G-ELM-300	GON-300	MON300	16	115-240V/50-60Hz
MBS 60	100	60	1 1/2"	G-ELM-500	GON-300	MON300	16	115-240V/50-60Hz
MBS 75	130	75	1 1/2"	G-ELM-600	GON-300	MON300	16	115-240V/50-60Hz
MBS 100	170	100	1 1/2"	G-ELM-851	GON-300	MON300	16	115-240V/50-60Hz
MBS 120	200	120	1 1/2"	G-ELM-1210	GON-300	MON300	16	115-240V/50-60Hz
MBS 180	300	180	1 1/2"	ELM-300	GON-300	MON300	16	115-240V/50-60Hz
MBS 240	400	240	1 1/2"	ELM-300	GON-500	MON500	16	115-240V/50-60Hz
MBS 250	440	250	1 1/2"	ELM-300	GON-500	MON500	16	115-240V/50-60Hz
MBS 300	575	300	1 1/2"	ELM-600	GON-600	MON600	16	115-240V/50-60Hz
MBS 400	680	400	2"	ELM-600	GON-800	MON800	16	115-240V/50-60Hz
MBS 500	850	500	2"	ELM-600	GON-1000	MON1000	16	115-240V/50-60Hz
MBS 600	1000	600	2"	ELM-600	GON-1200	MON1200	16	115-240V/50-60Hz
MBS 700	1250	700	DN80	ELM-800	GON-HC-1550	MONHC1550	20	115-240V/50-60Hz
MBS 800	1500	800	DN80	ELM-1200	GON-HC-1550	MONHC1550	20	115-240V/50-60Hz
MBS 1000	1800	1000	DN80	ELM-1200	GON-HC-2000	MONHC2000	20	115-240V/50-60Hz
MBS 1250	2200	1250	DN80	ELM-1600	GON-HC-2700	MONHC2700	20	115-240V/50-60Hz

Given flows are at 7 barg pressure with reference to 20°C and 1 bar atmospheric air suction as per ISO7183.

**Correction Factor for MBS**

Inlet Temperature			Pressure		
(°C)	(°F)	F1	(barg)	(psig)	F2
20	68	1	4.5	65	0.69
25	77	1	5	73	0.75
30	86	1	6	87	0.88
35	95	1	7	100	1
40	104	0.8	8	116	1.12
45	113	0.73	9	131	1.25
50	122	0.59	10	145	1.25
-	-	-	11	160	1.5
-	-	-	12	174	1.62
-	-	-	13	189	1.74
-	-	-	14	203	1.87
-	-	-	15	218	1.99
-	-	-	16	232	2.11

Contaminants	BS EN 12021:2014	European Pharmacopoeia	OHSA Grade D
Water	-	67 ppm (-49°F atmospheric dew point)	-
Oil/Lubricant	<0.5 ppm	0.1 ppm	5 ppm
Carbon Dioxide (CO <sub>2</sub> )	<500 ppm	<500 ppm	<1000 ppm
Carbon Monoxide (CO)	≤ 15 ppm	<5 ppm	<10 ppm
Nitrogen Oxides (NO+NO <sub>2</sub> )	-	<2 ppm	-
Sulphur Dioxide (SO <sub>2</sub> )	-	<1 ppm	-
Oxygen (O <sub>2</sub> )	21 ±1%	21±1	-
Taste and Odor	-	Free	-