



# On-Site Industrial Gases

## PSA Nitrogen Generator

- Low Energy Consumption
- Long Life
- Smart Algorithm



[www.sumerinc.com](http://www.sumerinc.com)





## About us

Sümer A.Ş. was established in 1981 in Ankara to provide services in the medical device sector. It has aimed advancement since the day of its establishment by also taking growth and compliance with the contemporary technologies and protecting the environmental conditions. Our manufacturing takes place in an area of 25.000 m<sup>2</sup> in Ankara Organized Industrial Zone.

Our Firm is following the innovations in its sector and in abroad through its research and development unit and its application staff with a strong infrastructure of engineers, and is continuing to produce devices it had developed in computer environment based on such innovations with high technology and to contribute their development so as to be most beneficial for the Turkish Medicine and Industry.

With this purpose, our Firm is strictly following the "Quality Management" principles and rules from design of the products to the after-sale servicing.

Our Firm has been currently certificated for compliance with ISO 9001 quality management system, ISO 13485 medical device quality management system certificate and ISO 14001 environment management system certificate and with product certificates under MDD 93/42/EEC Medical Devices Directive and PED 2014/68/EU Pressurized Equipment certificate. Furthermore, our steam sterilizers, and disinfection and washing devices have been certificated by the German accredited body.

Our Firm possesses the following certificates;  
CE Certificates under the following directives:  
ISO 9001,  
ISO 13485,  
ISO 14001 Quality Management System,  
MDD 93/42/EEC Medical Devices,  
PED 2014/68/EU Pressurized Equipment



## Our Vision

To make the Sümer brand a global brand to make our Firm remembered first in the sector.

## Our Mission

Our main task is to create designs with competition power in the global sense by taking the priorities of the sector into consideration and being respectful to the environment and people and giving the first priority to the wishes and expectations of customers, and also to produce innovative technological medical products by meeting all the national and international legal requirements.

## Our Basic Values

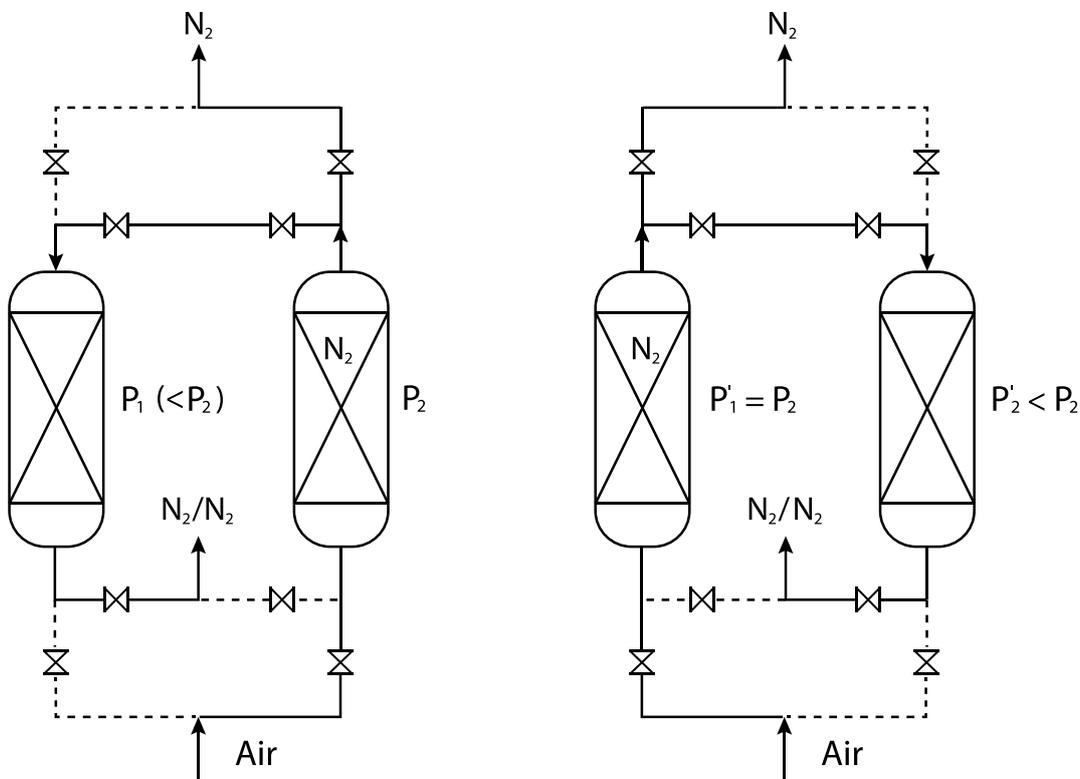
- We are bound up with the Medical Ethical Rules,
- We are people-oriented,
- We respect environment,
- We are creative,
- We are customer-oriented,
- We are innovative,
- We are pro-active,
- We believe in the team spirit.

## Pressure Swing Adsorption Technology

Pressure Swing Adsorption (PSA) technology is used with specially developed adsorbents called Carbon Molecular Sieve (CMS) to separate nitrogen from air to be able to use pure nitrogen in many applications.

First, air is compressed up to 10 bars with the help of compressors, then air is dried out to remove the moisture in the air either using refrigerant dryers or desiccant dryers. Filtration takes place thereafter to filter out the remaining particles, aerosol and oil which is in the pressurized air stream. Carbon Tower ensures long term oil free nitrogen delivery.

PSA unit consists two tanks filled with CMS. Each column undergoes cyclic sequence of pressurization, generation, equalization and exhaust cycles for continuous flow of high purity nitrogen.



### PSA Advantages

- Reduction of nitrogen cost
- Safe low-pressure nitrogen usage instead of high-pressure cylinders
- Elimination of logistical and administrative operations
- Elimination of orders and deliveries
- Ready to use high technology solutions



## Key Features of NITROFRESH

Whether your company is specialized in laser cutting, chemical manufacturing, electronics or food and beverage, a trustable supply of industrial nitrogen is crucial. Compared to the on-demand delivery of gas bottles or tanks, on-site production of nitrogen offers many advantages such as cost savings and continuous availability.

SUMER's advanced nitrogen generators offer you the on-site production of nitrogen at the lowest possible cost.



## Key Features of Nitrofresh

- Nitrogen from 95% to 99.999%
- Fully Automatic 24/7
- Zirconium Oxygen Sensor (0-1000 ppm)
- SMC flow meter
- Dew point sensor
- Carbon Tower
- Nitrogen Buffer Tank
- Pressure and Temperature Sensors
- 1 x H grade, 2 x D Grade Filters
- Real time trends of process parameters
- Visual recommended service maintenance reminders
- Algorithm against electricity cuts-off (Purity does not drop after electricity cuts-off)
- Smart Algorithm (Generator automatically adjusts its purity regarding nitrogen flow)
- Highest packing density of CMS (specifically designed filling station)
- Uniform flow distribution design to maximize CMS life
- Humid protection system (Humid air cannot enter the CMS tanks)
- Industrial Grade Air and Nitrogen Filtration
- High Efficiency CMS
- Real Time Monitoring
- Remotely Manageable via Ethernet
- Recording Capabilities and Data Logging
- Multi-level secured access
- Top quality SMC and OMAL valves
- CE
- 7" Siemens or 10.1" Microprocessor based Touch Panel
- User Friendly Interface
- Multi language

Purity and Capacity values may slightly change during the life time of the generator. Purity and Capacity values may slightly change depending on the atmospheric conditions.



- Performance at 20 °C and 1 bar atmospheric conditions.
- Required inlet compressed air quality is 1:4:1 according to ISO 8573-1.
- Purity and Capacity values may slightly change during the life time of the generator.
- Purity and Capacity values may slightly change depending on the atmospheric conditions.

## Capacities

NitroFresh Model #	95%	98%	99%	99,50%	99,90%	99,95%	99,99%	99,995	99,999
Air Factor	1,95	2,43	2,97	3,42	4,02	4,10	5,50	6,65	8,25
50	379	264	200	164	129	113	80	67	50
60	454	317	240	197	154	135	96	81	60
80	606	423	320	263	206	181	128	107	80
100	757	529	400	329	257	226	160	134	100
120	909	634	480	394	309	271	192	161	120
150	1.136	793	600	493	386	339	240	201	150
175	1.325	925	700	575	450	395	280	235	175
200	1.514	1.057	800	657	514	451	320	269	200
250	1.893	1.321	1.000	821	643	564	400	336	250
300	2.271	1.586	1.200	986	771	677	480	403	300
350	2.650	1.850	1.400	1.150	900	790	560	470	350
400	3.029	2.114	1.600	1.314	1.029	903	640	537	400
500	3.786	2.643	2.000	1.643	1.286	1.129	800	671	500
600	4.543	3.171	2.400	1.971	1.543	1.354	960	806	600
750	5.679	3.964	3.000	2.464	1.929	1.693	1.200	1.007	750
1000	7.571	5.286	4.000	3.286	2.571	2.257	1.600	1.343	1.000
1250	9.464	6.607	5.000	4.107	3.214	2.821	2.000	1.679	1.250
1500	11.357	7.929	6.000	4.929	3.857	3.386	2.400	2.014	1.500
1750	13.250	9.250	7.000	5.750	4.500	3.950	2.800	2.350	1.750
2000	15.143	10.571	8.000	6.571	5.143	4.514	3.200	2.686	2.000

CAPACITIES for 99.999% Purity  
(Inlet air: 20 degree, 7 barg, ISO 8573-1:2010 1.2.1 condition)

Inlet Air Pressure (Barg)	Correction Factor (K1)	Inlet Air Temperature (Celsius)	Correction Factor (K2)
6,00	0,83	15	1,00
6,50	0,88	20	1,00
7,00	0,94	25	0,98
7,50	1,00	30	0,91
8,00	1,06	35	0,83
8,50	1,10	40	0,75
9,00	1,15	45	0,61



## Certificates and Brand Registry Documents

We believe that the way to the summit passes through high-quality and reliable manufacturing.







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