

FOOD & BEVERAGE



CLAIND

GAS GENERATORS AND PURIFIERS



E941 FOOD NITROGEN GENERATORS: OUR KNOW-HOW AT YOUR SERVICE

Since 1979, Claind has been meeting the demands of companies operating in the food industry, which need to use nitrogen generators for packaging food in a protective atmosphere and for storing liquid foods.

Claind's line of **FOOD nitrogen generators** has been specifically designed for preserving perishable products and guarantees the quality of E941 food nitrogen in compliance with current regulations.

Nitrogen prolongs the shelf life of products and retains the organoleptic properties of food, preserving its freshness and making it more appealing in terms of colour, shape and composition.





SUPERIOR PERFORMANCE WITH GUARANTEED RESULTS

1 ADVANTAGES OF ON-SITE NITROGEN PRODUCTION compared to cylinders and liquid



SAFETY



AUTONOMY AND
PRODUCTION CONTINUITY



QUICK PAYBACK



LOW OPERATING COSTS



NO LOGISTICAL PROBLEMS AND
ELIMINATION OF ADMINISTRATIVE
ACTIVITIES RELATED TO
CONTINUOUS GAS SUPPLY

2 SPECIFIC ADVANTAGES OF CLAIND GENERATORS compared to those of competitors



EASE OF USE



RELIABILITY, LONG LIFE AND
LOW MAINTENANCE COSTS



A WIDE RANGE THAT
MEETS ALL CUSTOMER
REQUIREMENTS



PRODUCTION OF NITROGEN
PROPORTIONAL TO CONSUMPTION
THANKS TO THE STAND-BY MODE



DIGITAL CONTROL SYSTEM
THAT CAN BE INTERFACED
WITH COMPANY IT SYSTEMS
(E.G. **PLC** OR **SCADA**)



CONNECTION TO THE
IoT CLAINd4YOU PLATFORM
TO CONTROL THE DEVICE REMOTELY
AND COLLECT OPERATING DATA











SPECIFIC TECHNOLOGY TO PRODUCE FOOD NITROGEN

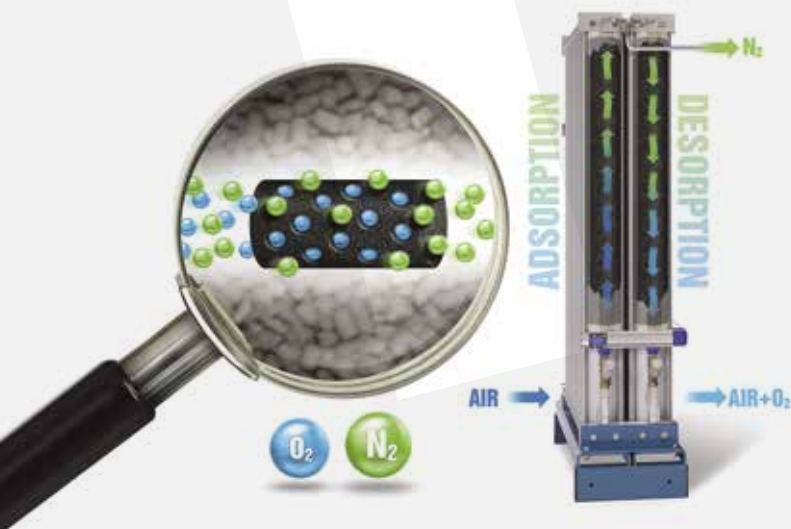
Claind's solutions for nitrogen self-production use **PSA (Pressure Swing Adsorption) technology.**

The PSA system consists of two beds of molecular CMS sieves (Carbon Molecular Sieve), which are alternatively pressurised and depressurised. Each bed can consist of one or more columns. The compressed air, which is pre-treated to eliminate dust and moisture, enters the base of the first active bed and flows through the CMS. Oxygen, carbon dioxide and other pollutants in the air are trapped, while nitrogen flows through the bed and exits from the head of the column towards a storage tank.

After a set time, the saturated active bed is depressurised so that it can be regenerated, while the cycle resumes symmetrically on the second bed.

In order to constantly provide our customers with high-quality solutions and innovation, we have further improved PSA technology by designing and registering the exclusive international **FAST PURITY®** patent, by switching to **ECO mode** and optimizing the **EQUALIZATION** of pressures, to ensure:

-  MAXIMUM NITROGEN PURITY JUST A FEW MINUTES AFTER IGNITION,
-  INCREASED LIFE SPAN FOR THE GENERATOR,
-  LOWER MECHANICAL STRESS,
-  HIGHER YIELD,
-  REDUCED AIR AND ELECTRICITY CONSUMPTION,
-  LOWER PRESSURE DROP IN THE PROCESS.





DESIGNED TO SUPPORT YOUR WORK

The Claind food nitrogen generators are incorporated into our customers' production processes and have been designed for the following **Food & Beverage** applications:

- DAIRY PRODUCTS AND DERIVATIVES (CHEESES)
- MEATS AND COLD CUTS
- PASTA
(FRESH PASTA AND BAKED GOODS)
- FRUIT AND VEGETABLES
(FRESH-CUT PRODUCTS)
- COFFEE
- FRUIT JUICES
- DRINKS
- OIL
- WINE
- WATER
- DRIED FOODS





PACKAGING IN A PROTECTIVE AND MODIFIED ATMOSPHERE

This packaging technique consists in replacing the air that is in contact with the food inside the packaging with the most appropriate nitrogen mixture to prolong the product's shelf life. By shelf life we mean the period of time during which a product maintains its sensory characteristics (colour, smell, taste, etc.). These properties are of paramount importance for the simple fact that the consumer's acceptance or rejection of the product depends on them. Moreover, it is worth highlighting that, through the use of nitrogen, various treatments can be eliminated with chemical or physical stabilisers, thus improving the final quality of the packaged food. Nitrogen also performs a filling function to prevent the packaging from collapsing on the product. In this way, the following advantages can be obtained:

- FRESH PRODUCTS THAT RETAIN THEIR ORGANOLEPTIC CHARACTERISTICS,
- LONGER SHELF LIFE AND, AS A RESULT, INCREASED PRODUCT MARKETABILITY,
- REDUCED PRODUCT LOSSES DUE TO WASTE OR RETURNS,
- HIGHER QUALITY AND FOOD SAFETY LEVELS.



STORAGE OF LIQUID FOODS

In order to protect liquid foods, nitrogen is used to neutralise storage tanks, for bottling and in all phases of transfer and handling of liquid products to evacuate dissolved oxygen. Inerting consists in replacing the air that is in contact with food with gaseous nitrogen so that the product can be preserved for longer. In fact, when in contact with air, liquid foods develop a series of oxidative reactions that change their chemical composition and radically change their colour, smell and taste. Nitrogen, instead, maintains an inert atmosphere inside the tank that allows food, thus protected, to retain its qualitative and organoleptic characteristics. The same principle also applies to bottling, where nitrogen is used during the final phase of liquid treatment for bottle washing (pre-evacuation), for actual bottling and before capping for the inerting of head space.





SOME INTERESTING BUSINESS CASE



COFFEE

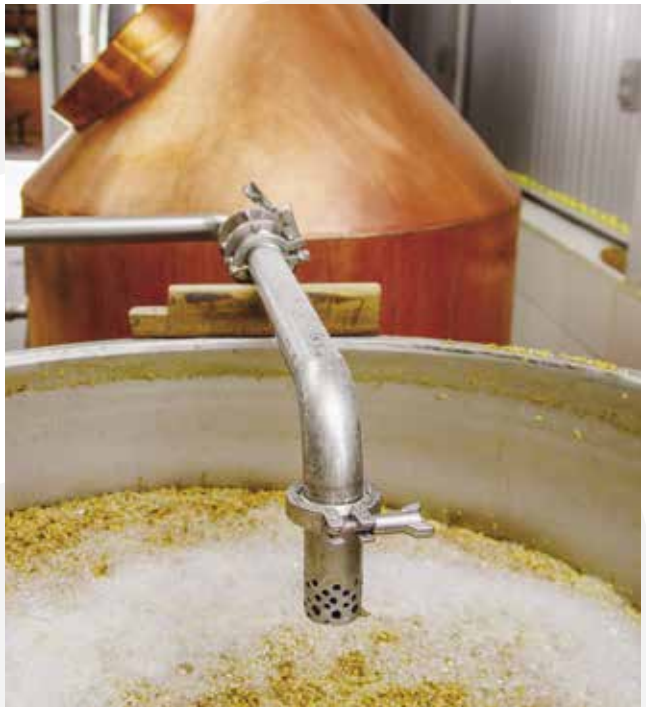
In coffee processing and packaging, nitrogen is used for degassing and inerting capsules and pods.



WINE

In the wine production process, nitrogen is used in many phases with the aim of avoiding contact with oxygen. In fact, wine is subject to oxidative phenomena that cause irreversible alterations such as the deterioration of taste and colour. As for red wines, nitrogen is used for: homogenisation, transferring from one cistern to another, and the forming of musts during fermentation, storage and bottling. In white wines, instead, it is used in the following phases: pressing, filtration, tank or drum inerting, clarification, barrel filling and bottling.





BEER

If fermented beer comes into contact with air, this can affect the beer, altering its characteristics and, consequently, reducing its storage time. For this reason, beer is subjected to protection and preservation processes with gases such as nitrogen, carbon dioxide or, better still, with a mixture of the two. The use of mixtures is necessary mainly in two phases: for filling barrels and retail pouring.





OUR RANGE OF GENERATORS IS DESIGNED TO FULFILL ALL YOUR NEEDS

FLO, PICO, MAXI and DOMINUS NL SERIES

The nitrogen generators of the **FLO, PICO, MAXI** and **DOMINUS NL** series consist of a large number of models, whose nitrogen flow rates differ according to the required purity.

MODEL	OUTGOING NITROGEN FLOW RATE* (NM ³ /H) COMPARED TO PURITY					DIMENSION			WEIGHT
	99.999% 10 ppm **	99.99% 100 ppm **	99.90% 1000 ppm **	99.50% 0.5% **	99.00% 1% **	W [cm]	D [cm]	H [cm]	[kg]
N2 FLO 1	0.2	0.4	0.9	1.5	2	40	80	118	92
N2 FLO 2	0.5	0.8	1.8	2.9	3.6				113
N2 FLO 3	0.7	1.2	2.6	4.3	5.3				134
N2 FLO 4	1	1.7	3.7	5.8	7.2				155
N2 PICO 3	1.5	2.5	5.4	8.6	10.4	40	130	138	230
N2 PICO 4	2	3.3	6.9	11.5	15				270
N2 PICO 5	2.3	4	9.2	14.4	18.4				310
N2 PICO 6	3.5	5	10.4	17.3	21.9				350
N2 MAXI 1	6.2	9	18.7	31.1	39.1	41	122	211	750
DOMINUS NL 1	12	17	26	35	40	77	65	239	800
DOMINUS NL 2	23	35	52	70	80		94		1040
DOMINUS NL 3	35	52	78	105	119		122		1280
DOMINUS NL 4	47	69	104	140	159		152		1520
DOMINUS NL 5	58	86	131	176	199		181		1760
DOMINUS NL 6	70	104	157	211	239		210		2000

E941



* The hourly flow rates refer to nominal inlet air conditions: pressure of 8,5 bar (123,3 psi), CMS temperature of 20°C (68°F).
 ** Nitrogen purity expressed in oxygen content.



Scan this QR code
and discover more
about DOMINUS NL

INSTRUMENTAL FEATURES:

- HIGH-SENSITIVITY OXYGEN ANALYSER:**
FITTED AS STANDARD TO ALLOW REAL-TIME MONITORING OF THE PURITY, ENABLING THE GENERATOR TO SELF-ADJUST THE PROCESS TO MAINTAIN A CONSTANT DEGREE OF PURITY.
- DIGITAL CONTROL SYSTEM:**
THE MODBUS PROTOCOL ALLOWS THE GENERATOR TO INTERFACE WITH THE COMPANY'S IT SYSTEMS (E.G. PLC OR SCADA) WHILE THE MQTTS PROTOCOL ENABLES CONNECTION TO THE **CLAIND4You WEB PORTAL** FOR REMOTE CONTROL IN AUTONOMY AND SAFETY.
- SINGLE NITROGEN STORAGE TANK:**
FOR THE OPERATION AND STORAGE OF THE NITROGEN PRODUCED, WITH THE POSSIBILITY OF AVOIDING THE BUFFER TANK.
- ENERGY SAVING MODE:**
MINIMISED CONSUMPTION THANKS TO THE ECO MODE INCLUDED WHICH ALLOWS AUTOMATIC ADAPTATION OF THE PROCESS TIME AND MODULATION OF THE PHASES IN PROPORTION TO THE NITROGEN WITHDRAWN, AS WELL AS STAND-BY MODE.
- E941 FOOD PURITY:**
POPTION OF DIFFERENT CALIBRATIONS IN ORDER TO MEET SPECIFIC CUSTOMER NEEDS.
- USER INTERFACE:**
MEMBRANE DISPLAY OR LCD TOUCHSCREEN (DOMINUS NL), NO NEED FOR SUPERVISION AND/OR USER ACTIVITY THANKS TO PRE-SET OPERATING PROGRAMS.
- USE OF HIGH-QUALITY CMS:**
RESULTING FROM 40 YEARS OF RESEARCH AND TESTING, COMBINED WITH AN AUTOMATED SIEVE FILLING SYSTEM TO ENSURE BETTER GENERATOR RELIABILITY THAN CONVENTIONAL SYSTEMS.



ALL OUR SERVICES TO ALWAYS OFFER YOU OUR VERY BEST

In addition to our product range, we also offer many services, including:



PRE-SALE

- ASSISTANCE IN CHOOSING THE MODEL
- PAYBACK CALCULATION
- TECHNICAL AND COMMERCIAL INSPECTIONS



CUSTOMER CARE

- SPARE PARTS AND CONSUMABLES
- IDENTIFYING AND SOLVING ANOMALIES



TECHNICAL SUPPORT

- INSTALLATION
- MAINTENANCE (PREVENTIVE AND SCHEDULED)
- REPAIRS



ADDITIONAL SERVICES

- CONSUMPTION TRACKING SERVICE
- IQ/OQ CERTIFICATIONS
- GAS ANALYSIS AND CERTIFICATION SERVICE FOR FOOD USE



IoT CLAIND4YOU PLATFORM

- REMOTE CONTROL FROM PC OR SMARTPHONE
- REAL-TIME MONITORING OF OPERATING PARAMETERS AND ANALYSIS OF HISTORICAL DATA
- ALARMS AND NOTIFICATION OF MAINTENANCE NEEDS



VIA REGINA 24, LOC. LENNO
22016 TREMEZZINA (CO)
ITALY

TEL: +39 0344 56603
VAT NR. 02894360136

WWW.CLAINO.IT

GAS GENERATORS AND PURIFIERS

AUTHORIZED DISTRIBUTOR:

