

## NITROGEN USAGE IN BEVERAGE INDUSTRY

### INTRODUCTION

Industrial gases are used in many stages in processing of beverage industry. Besides the wide usage of Carbon dioxide mainly for carbonated drinks which is treated in a different MEGA publication TN 09 /18 /E -"Carbon dioxide usage in the Beverage Industry", Nitrogen is used as well for both carbonated and non-carbonated drinks and is in direct contact with the beverage. Nitrogen may be used for inerting, purging, deoxygenating and packaging in controlled atmosphere.

### SCOPE

The scope of this work is to provide for the nitrogen use in the beverage industry the minimum specifications (purity, impurities) to be ensured (to the point of delivery, not the point of use). This Technical Note covers only usage of nitrogen in gas phase. Liquid nitrogen usage will be treated in a future version of this document. This Technical Note does not cover gases self-produced on the customer's premises. Since Nitrogen used is in direct contact with the liquid stuff at various steps of processing, the gas specifications in this document may contribute in minimizing the effects of food contamination and spoilage related to Nitrogen gas.

### APPLICATIONS OF NITROGEN IN BEVERAGE INDUSTRY

Nitrogen is mainly applied in gas phase for inerting, purging and deoxygenating in order to reduce the presence of non-desired oxygen in the beverage during processing and storage. It is also used in liquid phase known as "nitrogen dosing" application for the same scope added the benefit of gaining strength for light-weight packaging during the bottling phase of non-carbonated beverages. This last application will be covered in future versions of this Technical Note.

### SPECIFICATIONS

Nitrogen gas specifications used in applications for beverage industry is based on the minimum specifications mentioned in MEGA Technical Document "Minimum Specifications for Food Grade Gases" (ref. TN 06 /17/E)

Gas	N <sub>2</sub>
Purity minimum (% vol)	99
Maximum water content (ppm)	500
Maximum CO content (ppm)	10
Maximum oil content (mg/kg)	-
Maximum CnHn content (ppm)	100
Maximum NO <sub>2</sub> / NO content (ppm)	10
Maximum O <sub>2</sub> content (%)	1

## REFERENCES

EIGA - IGC Doc 126/11/E

MEGA publication: TN 09 /18/E - "Carbon dioxide usage in the Beverage Industry"

TN 06 /17/E - "Minimum Specifications for Food Grade gases"

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