MINIMUM SPECIFICATIONS FOR FOOD GRADE GASES

1. INTRODUCTION

Food grade gases may be used for beverages (e.g. carbonation), packaging in controlled atmosphere (e.g. bread, meat etc.) and processing (cooling, freezing etc.).

This document covers only food grade gases used for food excepted beverages which will be treated in a different MEGA publication 'TN 06/15/E-"Carbon dioxide usage in the Beverage Industry'.

2. SCOPE

The scope of this work is to provide minimum recommendations for gas specifications (purity, impurities) to be ensured (to the point of delivery, not the point of use) in order to be considered as "Food Grade gas". It covers compressed and liquefied gases used for food applications. It does not cover gases self-produced on the customer's premises.

The use of food grade gases may contribute in minimizing the effects of food contamination and spoilage related to industrial gases.

3. APPLICATIONS OF FOOD GRADE GASES

The applications for gases in food sector are split into 2 categories:

3.1- Food Additives

Gases are considered as food additives whenever used, for example as a propellant or as a packaging gas in Modified Atmosphere application (MAP).
Minimum specifications are required as detailed in Sec 4.

3.2- Food Processing Aids

Gases are considered as processing aids when used during the processing of a food, for example liquid nitrogen for freezing or carbon dioxide for freezing and chilling, but they are not themselves consumed as part of the food. In this case the only legal requirement is that the gas should not leave residues in the product that would present a risk to health. No purity criteria are set for use of gases as a processing aid.

4. SPECIFICATIONS

Specifications of all gases for use as food additives.

Summary of proposed gas specifications

Gas	CO2	N2	N2O	Ar	He	O2
Purity minimum (% vol)	99	99	99	99	99	99
Maximum water content (ppm)		500	500	500	500	500
Maximum CO content (ppm)	10	10	30			
Maximum oil content (mg/kg)	5					
Maximum CnHn content (ppm)	50	100		100	100	100
Maximum NO_2/ NO content (ppm)		10	10			
Maximum O_2 content (%)		1				

5. REFERENCES:

EIGA - IGC Doc 126/11/E

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