MESSER
Gases for Life

Modified Atmosphere Packaging

Benefits:

- Extended shelf life
- Appetizing appearance
- Increased flexibility of packing and distribution

N_2, CO_2 and O_2 – The Ideal Gases for Modified Atmosphere Packaging

When packed in air food is susceptible to three main spoilage mechanisms; simple oxidation, bacterial growth and mould growth. However, all of these can be suppressed or reduced by packaging the food in the appropriate Modified atmosphere. The gases used for modified Atmosphere Packaging (MAP) are carbon dioxide, oxygen and nitrogen – all of which are naturally present in air.

The main effects of these gases are:

Carbon dioxide
actively retards the growth of both bacteria and moulds

Oxygen
maintains red colour of meat and inhibits anaerobic bacteria

Nitrogen
is essentially inert

Gourmet mixture product codes

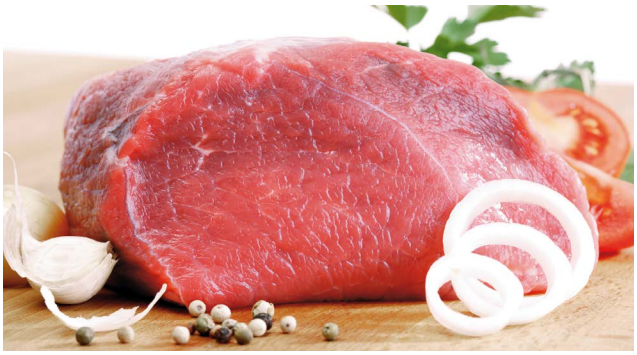
Product Code	Name	Description	Size	CGA
110800	GOURMET O	100% Oxygen	K	CGA 540
110805	GOURMET N	100% Nitrogen	K	CGA 580
110811	GOURMET C	100% Carbon Dioxide	K	CGA 320
110866	GOURMET N80	20% CO_2, 80% N_2	K	CGA 580
110818	GOURMET N70	30% CO_2, 70% N_2	K	CGA 580
110820	GOURMET N60	40% CO_2, 60% N_2	K	CGA 580
110832	GOURMET N50	50% CO_2, 50% N_2	K	CGA 580
110833	GOURMET C60	40% N_2, 60% CO_2	K	CGA 580
110834	GOURMET C70	30% N_2, 70% CO_2	K	CGA 580
110835	GOURMET O80	20% CO_2, 80% O_2	K	CGA 296
110836	GOURMET O40	40% O_2, 60% CO_2	K	CGA 296
110837	GOURMET O70	30% CO_2, 70% O_2	T	CGA 296

Application Examples

Product	% CO_2	% N_2	% O_2
Red Meat	20-35		80-65
Poultry	25-100	75-0	
Fish	30-60	70-40	
Cooked/Cured Meat	30-70	70-30	
Bakery Products	50-100	50-0	
Cheese	30-100	70-0	
Pizza	40	60	
Fresh Pasta	40-80	60-20	
Coffee/Crisps/Nuts		100	

Generally, MAP aims to eliminate or reduce oxygen (except for special cases such as packing red meat, or to prevent anaerobic growth) and to increase CO_2 to 20% or above to inhibit bacteria and moulds. Where necessary, the balance of the modified atmosphere is made up with nitrogen, e.g. if carbon dioxide tends to dissolve in the product causing package collapse.

MAP therefore, normally requires a mixture of at least two gases, and the optimum proportions vary from product to product. Messer can offer you advice and assistance in establishing your gas requirements. MAP gases can be supplied pre-mixed in cylinders or mixed on site from cylinders or bulk tanks of individual gases.



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