A Guide to MAP Gas Mixtures

Raw Red Meat

Recommended gas mix

Retail: 70% O₂, 30% CO₃ Exceptions: Venison, wild boar -80% O₂, 20% CO₃ Bulk: 65% O₂, 35% CO₂ Exceptions: Pork - 80% CO₃, 20% N₃, Venison, wild boar - 80% O2, 20% CO2 **Primal:** 50% CO₂, 50% N₂

Exceptions: Pork - 80% CO₂, 20% N₂

Food items venison and wild boar

Beef, goat, hare, horse, lamb, pork, rabbit, veal,

packages

Typical types of package Retail: Traysealed and thermoformed Bulk and primal: Bag-in-box, master pack

Bulk

Retail

Raw Offal

Recommended gas mix **Retail:** 80% O₂, 20% CO₃

Food items

Feet or trotters, foie gras, giblets, heart, kidney, liver, neck, oxtail, sweetbread, tongue and tripe

Typical types of package

Bulk: 80% O₂, 20% CO₂

Raw Poultry and Game Recommended gas mix

Food items

Retail: Traysealed and thermoformed packages Bulk and primal: Bag-in-box, master pack

Retail: 30% CO₃, 70% N₃

or 20% CO₂, 80% O₂ Bulk: 100% CO.

Capon, chicken, duck, goose, grouse, guinea hen, partridge, pheasant, pigeon, poussin/cornish hen, quail and turkey

Typical types of package

Poultry, Dark Portions and Cuts

Recommended gas mix **Retail:** 70% O₂, 30% CO₃

Food items

Retail: Traysealed and thermoformed packages Bulk: Bag-in-box, master pack

Bulk: 70% O₂, 30% CO₂

Raw Low Fat White Fish and Seafood

Dark poultry mince, other skin-off poultry, skin-off chicken, skin-off turkey, sliced dark poultry, turkey mince

Retail: Traysealed and thermoformed packages Bulk: Bag-in-box, master pack

Typical types of package

Typical types of package



Recommended gas mix **Food items Retail:** 30% O₂, 40% CO₂, 30% N₂

Bulk: 70% CO₂, 30% N₂

Bream, brill, catfish, cod, coley, croaker, dab, dover and lemon sole, flounder, grouper, haddock, hake, halibut, hoki, huss, jackfish, john dory, mullet, monkfish, pike, plaice, pollack, red snapper, sea bass, shark, skate, turbot, whiting

Retail: Traysealed and thermoformed packages Bulk: Bag-in-box, master pack

Raw High Fat Oily Fish and Seafood Recommended gas mix **Food items**

Retail: 40% CO₃, 60% N₃

Bulk: 70% CO₂, 30% N₂

Bluefish, carp, eel, greenland halibut, herring, mackerel, pilchard, rock salmon, salmon, sardines, shad, sprat, swordfish, trout, tuna, whitebait

urchins, shrimp, squid, whelks, winkles

Food items

Typical types of package Retail: Traysealed and thermoformed packages Bulk: Bag-in-box, master pack

packages



Retail: 30% O₂, 40% CO₂, 30% N₂ Abalone, clams, cockles, conch, crab, crayfish, cuttlefish, **Bulk:** 70% CO₂, 30% N₂ lobster, mussels, octopus, oysters, prawns, scallops, sea

Shellfish, Crustaceans and Molluscs

Cooked, Cured and Processed Meat Products

Retail: 30% CO₂, 70% N₂

Bulk: 50% CO₂, 50% N₂

Recommended gas mix

Recommended gas mix **Food items**

Bacons, beefburgers, black pudding, charcuterie, chopped pork and ham, cooking sausages, corned beef, frankfurters, haggis, hams, luncheon meats, meat jerky, meat slices, ox tongue, pastrami, pâtés, pepperoni, potted meats, rillettes, roast meats, salami, smoked reindeer, smoked venison, terrines, wurst sausages

Typical types of package Retail: Traysealed and thermoformed packages, flow packages Bulk: Bag-in-box, master pack

Typical types of package

Bulk: Bag-in-box, master pack

Retail: Traysealed and thermoformed

Recommended gas mix **Food items** Typical types of package Bloaters, bombay duck, buckling, cod's roe, cold smoked fish, Retail: Traysealed and thermoformed

smoked trout, taramasalata

Cooked, Cured and Processed Fish and Seafood Products

Retail: 30% CO₃, 70% N₃ **Bulk:** 70% CO₂, 30% N₂

Retail: 30% CO₃, 70% N₃

Bulk: 70% CO₂, 30% N₂

Recommended gas mix

Cooked, Cured and Processed Poultry and Game Bird Products **Food items** Capon galantine, chicken ballotine, chicken roll, cured game birds, cured poultry, duck ballotine, duck pâté, duck galantine, pheasant galantine, pigeon galantine, smoked chicken,

smoked duck, smoked poussin, smoked turkey, turkey bacon,

turkey ballotine, turkey galantine, turkey roll

Battered: fish, seafood, meats and poultry;

fish galantine, fish rillettes, fish terrines, hot smoked fish, kippers,

potted fish, potted shellfish, salt cod, salted anchovies, salted

caviar, salted fish roes, salted jellyfish, seafood pâtés, smoked haddock, smoked halibut, smoked mackarel, smoked salmon,

> Typical types of package Retail: Traysealed and thermoformed packages, flow packages Bulk: Bag-in-box, master pack

packages, flow packages

Bulk: Bag-in-box, master pack



Ready Meals Recommended gas mix

Retail: 30% CO₂, 70% N₂ **Bulk:** 50% CO₂, 50% N₂

Food items Casseroles, ready meals containing fish, ready meals containing

Food items

Food items

game bird, goulash, ready meals containing meat, ready meals containing offal, ready meals containing pasta, ready meals containing poultry, sauces, ready meals containing seafood, soups, ready meals containing vegetables **Convenience Food Products**

> kebabs, omelettes, pasties, pâtés en croûtes, pizzas, pasta and pies containing meat, poultry, fish and seafood, quiche, roule au fromage, sandwiches, satays, sausage rolls, soufflés, spring rolls, stuffed pitta bread, tacos, tostadas, vol au vents

Typical types of package

Retail: Traysealed and thermoformed

packages, flow packages

Bulk: Bag-in-box, master pack

Typical types of package Retail: Traysealed and thermoformed

Typical types of package

Typical types of package

packages, flow packages

Retail: Traysealed and thermoformed

Bulk: Bag-in-box tubs and pots are

packages, flow packages

Bulk: Bag-in-box

Typical types of package Retail: Traysealed and thermoformed

Bulk: Bag-in-box, master pack

packages



Bulk: 50% CO₂, 50% N₂ Bouchée/breaded: fish, seafood, meats and poultry; Burritos, enchiladas, falafels, filled crêpes, pancakes and rolls,

Recommended gas mix

Retail: 30% CO₂, 70% N₂

Recommended gas mix Retail: 50% CO₂, 50% N₂

Bakery Products

Recommended gas mix

Retail: 50% CO₃, 50% N₃

Bulk: 70% CO., 30% N.

Fresh Pasta Products

Capelli, fettucine, funghini, fusilli, linguine, macaroni, pasta **Bulk:** 50% CO₂, 50% N₂ shells, spaghetti, tagliarini, tagliatelle, trenette, tubetti,

vermicelli, zitioni **Food items**

croissants, crumpets, danish pastries, fruit breads, fruit cakes, fruit pies, fruit strudels, fruit tarts, meringue cakes, muffins, nan bread, nut breads, pancakes, par-baked breads, pitta bread, pizza bases, pretzels, sponge laver cakes, swiss rolls. taco shells, tortillas, vegetable breads, waffles

Bagels, bread puddings, breads, buns, cheesecakes, crépes,

Retail: Traysealed and thermoformed packages, flow packages Bulk: Bag-in-box



Recommended gas mix Hard cheese ex. mould-ripened cheeses: Retail: 100% CO.

Hard Cheeses

Bulk: 100% CO. Other dairy products: Retail: 100% N_a **Bulk:** 100% N₂ Exceptions: Aerosol Creams: Nitrous oxide N₂O)

Grated and Soft Cheeses Recommended gas mix **Food items**

cheeses, hard cheeses, margarine, semi-hard cheeses, sliced cheeses, yoghurts

Aerosol creams, butter, cream cakes, creams, custards, fresh

commonly used for yoghurts, soft cheeses, margarine, creams, custards, and butter Typical types of package

Retail: Traysealed and thermoformed

packages, flow packages

Bulk: Bag-in-box

Bulk: Bag-in-box



Grated and soft cheeses ex. mould-Aerosol creams, butter, cream cakes, creams, custards, fresh ripened cheeses: cheeses, grated cheeses, margarine, sliced cheeses, soft cheeses, yoghurts

Retail: 30% CO₂, 70% N₂ Bulk: 30% CO₂, 70% N₂ Other dairy products: Retail: 100% N₂ Bulk: 100% N₂

Exceptions: Aerosol Creams: Nitrous oxide N 20) **Dried Food Products (Coffee, Milkpowder, etc.)** Recommended gas mix

Cocoa powders, coffees, dehydrated milk, dried and salted

dried colourings, dried flavourings, dried fruits, dried herbs,

fish, dried and salted seafood, dried beans, dried cereals.

Tubs and pots are commonly used for yoghurts, soft cheeses, margarine, creams, custards, and butter

Typical types of package

packages, flow packages, cans

Retail: Traysealed and thermoformed



dried lentils, dried mushrooms, dried pasta, dried snack food, dried spices, dried vegetables, flours, nuts, potato crisps, teas

Cooked and Dressed Vegetable Products

Recommended gas mix

Retail: 100% No.

Bulk: 100% N₂

or 30% CO₂, 70% O₃

Retail: 30% CO₃, 70% N₃ **Bulk:** 50% CO₂, 50% N₂

Food items

Food items

Food items

Bean chillies, bhajis, broccoli in cheese, bubble and squeak, cauliflower cheese, coleslaw, cooked beans and potatoes, corn fritters, garlic mushrooms, lentil cutlets, other dressed salads, pakoras, pasta and potato salads, pilafs, quorn dishes, rice salads, rissoles, stuffed peppers and tomatoes, vegetable bakes, casseroles containing vegetables, vegetable pastas and crumbles, vegetable curries and dosas, vegetable flans, vegetable pilau, vegetable pie, vegetarian burgers

Retail: Traysealed and thermoformed packages Bulk: Bag-in-box

Typical types of package

Typical types of package

Typical types of package

packages, flow packages

Bulk: Bag-in-box

Retail: Traysealed and thermoformed

Retail: Cartonboard gable-top containers,

glass and plastic bottles, aluminium and steel

Bulk: Kegs, stainless steel tanks, barrels, etc.

Typical types of packages



Carbonated Soft Drinks

Liquid Food and Beverage Products

Recommended gas mix Retail: 100% CO.

Recommended gas mix

Retail: 5% O₂, 5% CO₂, 90% N₂

Bulk: 5% O₂, 5% CO₃, 90% N₃

Recommended gas mix

Retail: 100% N_a

Bulk: 100% CO,

Bulk: 100% N_a

Food items

sweetcorn, tomatoes

Beers, ciders, carbonated soft drinks, lagers

Apples, apricots, artichoke, asparagus, aubergine, avocado,

bananas, bean sprouts, beetroot, beans, broccoli, cabbages,

carrots, celery, cherries, cucumber, cumquats, fennel, garlic,

rhubarb, spinach, star apples, strawberries, other berries,

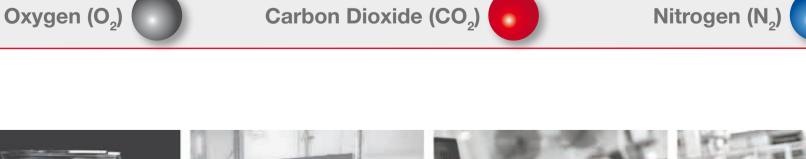
Cordials, fruit juices, liqueurs, liquid yoghurt, milk,

mineral waters, oils, spirits, vegetable juices, wines

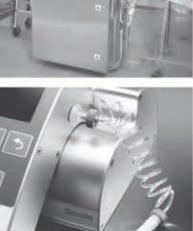
Retail: Cartonboard gable-top containers, glass and plastic bottles, aluminium and steel Bulk: Kegs, stainless steel tanks, barrels, etc. Fresh Whole and Prepared Fruit and Vegetable Products (EMAP - Laser Perforated Foil)



citrus fruits, grapes, guava, kiwi fruit, leek, lettuces, lychees, mango, marrow, melons, fruit and vegetable salads, okra, onions, other sprouts, papayas, parsnips, passionfruit, peaches, pears, peas, peppers, pineapple, plums, potatoes, radish,

















a **mocon** company

Dansensor