

Oprema za pakiranje hrane u modificiranoj atmosferi / Modified Atmosphere Packaging System

Oprema se sastoji od:

- 1) Mješač plinova
- 2) Komora za pakiranje u modificiranoj atmosferi
- 3) Analizator sastava O₂/CO₂ plinova

Modified atmosphere packaging system:

- 1) Proportional gas mixers
- 2) Protected atmosphere packaging cabinet
- 3) Gas composition analyzer (O₂/CO₂)

PROIZVOĐAČ I MODEL

- 1) Mješač plinova: WITT-Gasetechnik, KM 20-3
- 2) Komora za pakiranje u modificiranoj atmosferi: BESSER VACUUM, DORADO, JUNIOR DIGIT
- 3) Analizator sastava O₂/CO₂ plinova: WITT-Gasetechnik, Oxybaby V (O₂/CO₂)

MANUFACTURER AND TYPE

- 1) Proportional gas mixers: WITT-Gasetechnik, KM 20-3
- 2) Protected atmosphere packaging cabinet MAP cabinet: BESSER VACUUM, DORADO, JUNIOR DIGIT
- 3) Gas (O₂/CO₂) composition analyzer: WITT-Gasetechnik, Oxybaby V

1)



2)



3)



Kratki opis metode

Pakiranje u modificiranoj atmosferi (MAP) je postupak pakiranja prehrambenih proizvoda u atmosferi jednog ili više plinova. Najčešće se u tu svrhu koriste tri plina: ugljikov dioksid, dušik i kisik. Također se mogu koristiti i drugi plinovi: SO₂, N₂O, Ar itd. Zamjena zraka unutar pakovanja provodi se kontinuiranim dovodom plinova odgovarajućeg sastava. MAP komora (Dorado) je preko ventila spojena na mješač plinova (Witt, KM 20-3). Podešeni sastav plinova ispunjava ambalažu sa sadržajem i potom se ambalaža hermetički zatvara. Promjena sastava plinova (O₂/CO₂), tijekom čuvanja, prati se na uređaju OxybabyV (Witt).

Short description of the method

Modified Atmosphere Packaging (MAP) is a process for packaging foodstuff together with a gas or a gas mixture. The three main gases used in MAP are: Carbon Dioxide, Nitrogen and Oxygen. Other gases that have been considered include SO₂, nitrous oxide (N₂O), Ar etc.

The replacement of air inside a package is performed by a continuous gas stream, with desired gas mixture. MAP chamber (Dorado) is equipped with a valve connected to gas mixer (Witt, KM 20-3).

Desired gas mixture is flushed into package. The package is then sealed. Combined oxygen and carbon dioxide analyzer (Witt, Oxybaby V) is used for checking modified atmospheres in food packs.

Namjena

MAP se koristi za pakiranje prehrambenih proizvoda gdje se zrak (78% N₂, 21% O₂, 0.03% CO₂) unutar pakovanja zamjenjuje željenom smjesom plinova u cilju uklanjanja ili smanjenja reakcija koje dovode do kvarenja hrane.

Purpose

MAP gases are used to replace the air (78% N₂, 21% O₂, 0.03% CO₂) inside the package and eliminate or reduce any product damaging deterioration.

Tehničke značajke:

Mješač plinova: WITT-Gasetechnik, KM 20-3

| | |
|--------------------------------------|---|
| Okolna temperatura | -5° to +40°C |
| Dimenzije (HxXWxD) | 240 x 350 x 320 mm (bez spojnih crijeva) |
| Masa | 11.5 kg |
| Temperatura ulaznog plina | Min. -10°C Max. +45°C |
| Individualni ulazni pritisci plinova | Min. 7 bara Max. 13 bara |
| Diferencijalni ulazni tlak | Max. 3 bara |
| Izlazni tlak | 3.0-3.5 bara |
| Vrste plinova | CO ₂ (pilot plin); Područje primjene: 0 -100 vol.% |
| | O ₂ 0 -100 vol.% |
| | N ₂ 0 -100 vol.% |
| Tlak pilot plina | 6.0 bar |

Komora za pakiranje u modificiranoj atmosferi: DORADO, JUNIOR DIGIT (No.101960508)

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|-------------------------|-----------------------------------|
| Dimenzije | 440 x 510 x 450 |
| Dimenzije vakuum komore | 310 x 350 x 160 |
| Welding bar | 300 mm |
| Vakuum pumpa | Uljna kupelj 12 m ³ /h |
| Krajnji vakuum | 2.0 bara |
| Masa | 36 kg |
| Način rada | automatski |
| Snaga | 0.35 kW |
| Napon | 220 V |
| Frekvencija | 50 Hz |

Analizator sastava O₂/CO₂ plinova: WITT-Gasetechnik, Oxybaby V (O₂/CO₂)

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|----------------------------------|---|
| Princip mjerenja O ₂ | Elektrokemijska ćelija |
| Princip mjerenja CO ₂ | IR-apsorpcija |
| Volumen plinova | O ₂ /CO ₂ < 6 mL |
| Vrijeme uzorkovanja | Max. 6 sec |
| Temperatura (plin/okolina) | 5-40 °C |
| Masa | Približno 600 g (bez dodatka) |
| Dimenzije (HxXWxD) | 187x106x91 mm (bez igle) |
| Izvor energije | 2 baterije (s mogućnošću ponovnog punjenja) |
| Usklađenost s propisima | ISO 9001: 2000, ISO 14001; EMC 89/336/EWG (CE označavanje); Direktiva o niskom naponu 73/23/EWG |

Technical characteristics:

Proportional gas mixers: WITT-Gasetechnik, KM 20-3

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|-------------------------------|--|
| Ambient temperature | -5° to +40°C |
| Dimensions (HxXWxD) | 240 x 350 x 320 mm (without connections) |
| Weight | 11.5 kg |
| Gas inlet temperature | Min. -10°C Max. +45°C |
| Individual gas inlet pressure | Min. 7 bar Max. 13 bar |
| Differential inlet pressure | Max. 3 bar |
| Outlet pressure | 3.0-3.5 bar |
| Gas types | CO ₂ (pilot gas); Supply range: 0-100 vol.% |
| | O ₂ 0-100 vol.% |
| | N ₂ 0-100 vol.% |
| Pilot pressure | 6.0 bar |

Protected atmosphere packaging cabinet MAP cabinet: DORADO, JUNIOR DIGIT (No.101960508)

| | |
|---------------------------|-------------------------------|
| Dimensions | 440 x 510 x 450 |
| Vacuum chamber dimensions | 310 x 350 x 160 |
| Welding bar | 300 mm |
| Vacuum pump | Oil bath 12 m ³ /h |
| Final vacuum | 2.0 bar |
| Weight | 36 kg |
| Working | automatic |
| Installation power | 0.35 kW |
| Voltage | 220 V |
| Frequency | 50 Hz |

Gas (O₂/CO₂) composition analyzer: WITT-Gasetechnik, Oxybaby V

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|-------------------------------------|---|
| Measuring principle O ₂ | Electro-chemical cell |
| Measuring principle CO ₂ | IR-absorption |
| Sample gas requirement | O ₂ /CO ₂ < 6 mL |
| Sample time | Max. 6 sec |
| Temperature (gas/environment) | 5-40 °C |
| Weight | Approx. 600 g (without accessories) |
| Dimensions (HxXWxD) | 187x106x91 mm (without needle) |
| Power supply | 2 integrated rechargeable batteries |
| Approvals | ISO 9001: 2000, ISO 14001; EMC 89/336/EWG (CE marking); Low Voltage Directive 73/23/EWG |

Tip i priprava uzorka

Različite vrste prehrambenih proizvoda pakiranih u polimernom ambalažnom materijalu.

Sample type and preparation

Various foodstuffs packaged in polymeric packaging materials.