Carbon Dioxide Product Datasheet

Comprehensive Specification for Beverage Dispensing

Product Overview

Product Name: Carbon Dioxide (CO_2)

Chemical Formula: CO_2

Grade: Beverage Grade

Purity: 100% CO_2

Nitrogen Content: 0%

Appearance: Colourless, odourless gas

Description

Pure Carbon Dioxide is a critical component in beverage dispensing, renowned for producing exceptionally carbonated products. When used in draft systems, it imparts a lively foam, creates large, energetic bubbles, and delivers a mouthfeel often described as crisp, tingly, and slightly metallic. This distinct profile enhances the sensory experience of highly carbonated lagers, IPA's, pilsners, American sours, and soft drinks, making it the preferred choice for bars, breweries, and restaurants seeking maximum effervescence and a refreshing texture.

Physical and Chemical Properties

- Bubble Size: Large
- Mouth Feel: Crisp, tingly, metallic
- Flow: Lively, energetic
- State at Room Temperature: Gas
- Density (at STP): 1.98 kg/m^3
- Solubility in Water: 1.45 g/L at 25°C
- Boiling Point: -78.5°C (sublimation)
- Odour: Odourless
- Colour: Colourless

Usage and Applications

- Primary Uses: Beverage carbonation and dispensing
- Industries Served: Bars, breweries, restaurants, beverage manufacturers, soft drink producers
- Common Pairings: Highly carbonated lagers, IPA's, pilsners, American sours, soft drinks
- Advantages:
- Delivers maximum carbonation and foam

- Enhances freshness and mouthfeel
- Supports lively pour and aromatic release
- Compatible with a wide range of beverage styles

Typical Pairings Explained

- Highly Carbonated Lagers: These beers rely on CO_2 for their signature effervescence, crispness, and refreshing finish. The large bubbles and lively foam are essential to their mouthfeel.
- IPA's: Intense hop profiles are accentuated by the freshness brought by pure carbon dioxide, which lifts aromas and creates a vibrant drinking experience.
- Pilsners: The delicate malt and hop balance is heightened by lively carbonation, producing a satisfying foam and bright mouthfeel.
- American Sours: CO_2 underscores tartness and brings a sharp, clean texture to these bold, adventurous styles.

Straight carbon dioxide is also the standard for soft drink carbonation, where the lively foam and energetic effervescence are quintessential to the product.

Performance Characteristics

- Foam Quality: Produces dense, persistent foam with large bubbles, ideal for dramatic presentation and sustained head retention.
- Bubble Size: Large bubbles provide a visually appealing pour and a tactile, invigorating mouthfeel.
- Mouth Feel: Crisp and tingly, with a slight metallic edge, giving beverages an unmistakable sensation of refreshment.
- Flow: Lively, with rapid bubble ascent and active effervescence in the glass.

Pricing Information

- Price Per Pint: 3p per pint (subject to change and local taxes)
- Bulk Discounts: Available for high-volume accounts (contact supplier for details)

Technical Specifications

- Gas Cylinder Sizes: Available in standard beverage gas cylinders (volume varies by supplier)
- Valve Type: Standard beverage valves, compatible with draft systems
- Recommended Pressure: Typically 2.0 – 2.5 bar for beer dispensing (check equipment manufacturer for optimal settings)
- Handling Precautions: Use with proper regulators; store in cool, ventilated area; avoid exposure to open flames or extreme heat

Benefits of Pure Carbon Dioxide

- Ensures consistent, lively carbonation for every pour
- Improves sensory perception—foam, aroma, and mouthfeel

- Supports longer shelf-life by preventing oxidation
- Easy integration with existing beverage systems
- Safe, food-grade gas suitable for all beverage applications

Comparison with Other Gas Mixes

- Nitrogen Blends: Nitrogen is often blended with CO_2 for certain beer styles, such as stouts and porters, to produce a creamy head and smooth mouthfeel. However, pure CO_2 is preferred for styles where crispness and vibrant carbonation are desired.
- Advantages of Pure CO_2 over Blends:
- Creates larger bubbles and more effervescent foam
- Imparts a sharper, more distinct mouthfeel
- Ideal for highly carbonated styles and soft drinks

Safety Information

- CO_2 is non-flammable but can displace oxygen in confined spaces. Ensure proper ventilation when storing and using cylinders.
- Use approved regulators and follow manufacturer instructions to prevent over-pressurisation.
- Wear protective gloves and eyewear when changing or handling cylinders.
- Store upright and secure cylinders to prevent accidental tipping.

Environmental Impact

- CO_2 is a naturally occurring atmospheric gas and is commonly recycled from industrial processes for beverage use.
- Modern carbon dioxide supply chains prioritise minimising emissions and supporting sustainability.

Ordering Information

- Available from leading beverage gas suppliers
- Custom supply schedules and delivery options available for commercial accounts
- Contact customer service for technical support, safety advice, and volume pricing

Frequently Asked Questions

- Q: Can pure carbon dioxide be used for all types of beverages?
- A: Yes, it is suitable for beer, soft drinks, sparkling water, and other carbonated beverages. However, for certain beer styles, gas blends may be preferred.
- Q: What is the effect of large bubbles on beverage quality?
- A: Large bubbles increase perceived freshness, enhance mouthfeel, and contribute to a lively and dramatic appearance.
- Q: Is pure carbon dioxide safe for food and beverage applications?

- A: Yes, beverage-grade CO_2 is certified safe for use in all food and drink applications.
- Q: How does CO_2 improve the shelf life of beverages?
- A: By providing an inert atmosphere, CO_2 reduces exposure to oxygen and oxidation, preserving flavour and freshness.

Summary

Pure Carbon Dioxide is the definitive choice for producing highly carbonated lagers, IPA's, pilsners, American sours, and soft drinks. Its unique properties—large bubbles, lively foam, and crisp mouthfeel—set the benchmark for refreshment and beverage quality. Reliable, versatile, and easy to use, CO_2 is indispensable for modern beverage dispensing, ensuring every pint is served at its vibrant best.