

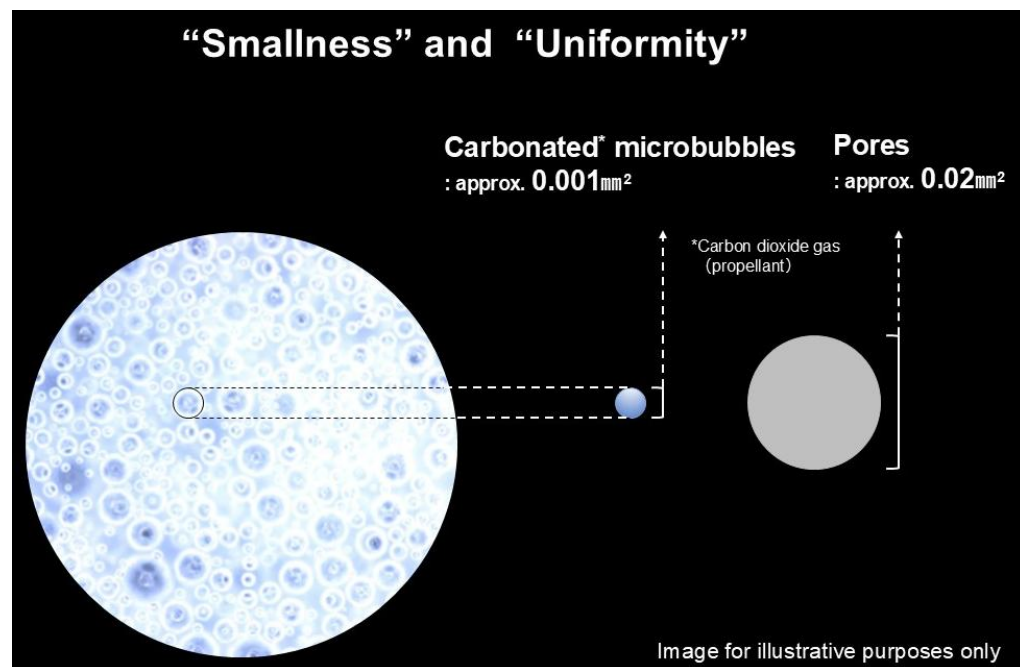
Trap carbon dioxide in fine bubbles that adhere closely to the skin.

High-Concentration*¹ Carbonated*² Long-Lasting Foam

A technology that stably retains a high concentration of carbon dioxide*² in fine bubbles that adhere closely to the skin. By injecting 100% carbon dioxide into the formulation, it generates fine “carbonated*² microbubbles” that are approximately one-twentieth the diameter of typical pores. Combined with foam-stabilizing formulation technology that helps prevent the foam from collapsing, it keeps a high concentration of carbon dioxide*² — not achievable by simply dissolving it into the formulation—in stable contact with the skin while maintaining close adhesion.

<Unique Points>

It forms “carbonated*² microbubbles” that are about one-twentieth the diameter of pores. To prevent the carbon dioxide from escaping, interfacial control within the formulation is used to suppress bubble rupture and coalescence.



The propellant gas is set to 100% carbon dioxide, ensuring a high concentration of carbon dioxide within the bubbles. By overcoming the challenges of foam-quality control through formulation design, the technology delivers stable, carbonated*² foam applicable to a wide range of products.

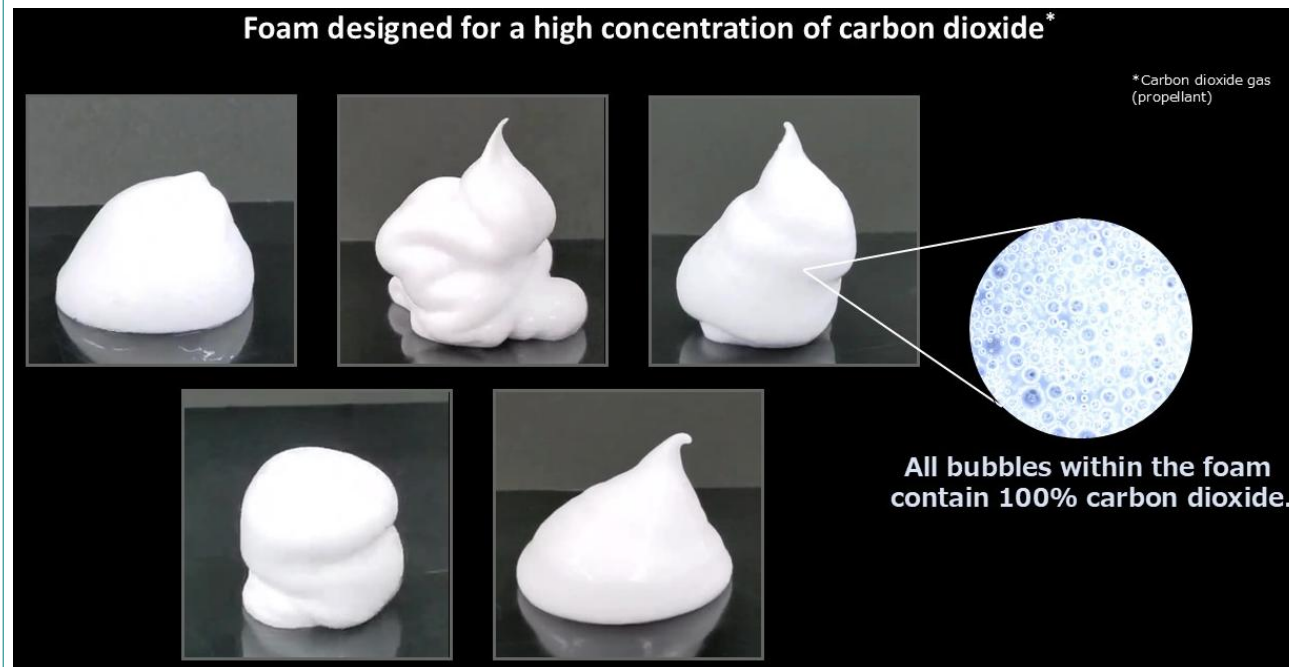


Image: iStock



*¹ Compared with our conventional products. *² Carbon dioxide gas (propellant)

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<Key Benefits>

- With a meticulously designed foam texture, it can be worked into the skin slowly and gently.
- By trapping carbon dioxide*² in the foam, it spreads evenly across the skin's micro-relief, enabling streak-free skincare application.
- Stable carbonated*² foam can be used easily at home.

<Link to Other Contents>

• PRTIMES STORY

The Essence of Kao's Research on Carbon dioxide:
The Evolution of "Beloved Foam" in Carbonated Foaming Skincare—and What's Next (Japanese only)

<https://prtmes.jp/story/detail/jrwoGVtVYJr>

• Research & Development News Release

- Newly discovered effects of CO₂ on dermal tissue
Lowering intradermal pH promotes the production of elastin, collagen, and hyaluronic acid (Japanese only)

<https://www.kao.com/jp/newsroom/news/release/2023/20230704-001/>

- Micronized CO₂ Helps Keep Skin Mildly Acidic Over Time — Newly Discovered Mechanism for Smoother Skin (Japanese only)

<https://www.kao.com/jp/newsroom/news/release/2018/20181026-001/>

• Kao Research Report

- [Research Report] Effects of CO₂ on the Stratum Corneum (Japanese only)

<https://www.kao.com/jp/newsroom/news/release/2021/20211215-001/>

- [Research Report] Discovery: A Face Wash with Fine Carbonated Foam Delivers High Sebum-Cleansing Performance (Japanese only)

<https://www.kao.com/jp/newsroom/news/release/2021/20211203-001/>

• CO₂ Beauty Lab. (Japanese only)

<https://www.kao.co.jp/tansanbiyoulab/>

<Concerned Research Areas>

• Product Development Research: -Skincare

<https://www.kao.com/global/en/innovation/research-development/product-development/skin-care/>

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#CarbonatedFoamBeauty #CarbonatedFoamFaceWash #HighConcentrationCarbonDioxide #CarbonDioxidePropellant #MicrobubbleFormation
#FoamStabilization #InterfacialScience #SkinScience