

Introduction to

2026 FEBRUARY

# **AEROFOAM**

## **Technology Platform**

### **Expanding Beauty, Living, and Cleaning Industries**

ARD CO., LTD.



# Why Redesign Formulations Now?

**Limitations of  
liquid-based approaches**



**AEROFOAM foaming  
solid technology**



**Beyond a specific industry,  
toward an everyday product platform**

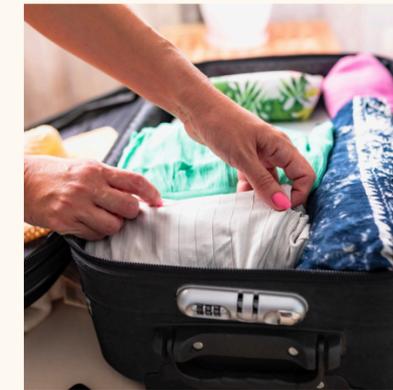
# Is a Liquid-Centric Approach Still the Best Answer?



**Rising logistics and transportation costs**



**Increasing burden from packaging materials and waste**



**Changing usage environments:  
Lighter, more mobility-friendly  
consumption**

**The everyday products industry, including beauty and cleaning,  
is now at a turning point.**



# Direction of Industry Change

## **Liquid → Solid**

Formulations evolving for better usability and logistics efficiency

## **Container → Container-free**

Rising demand for minimal packaging and sustainability

## **Product → Platform**

Transition from a single product to a scalable technology structure.

**This shift represents not just a product trend,  
but a transformation of the industry structure.**



## **Cleaners Designed Around Liquids**

The shampoos, body washes, and laundry detergents we use every day may appear different, but fundamentally they are the same.

**“Most of it is water.”**

## **Hidden Inefficiencies Behind Liquid Convenience**

- 80–90% of transported weight is water
- Oxidation and degradation begin after opening
- Heavy reliance on preservatives
- Structural waste caused by inconsistent usage

**“Do we really need to transport all this heavy water?”**

# Whatever the Format, the Core Is the User Experience

What matters most to users  
is a stable, effortless single use every time.

However, with liquid formulations,  
the amount used and wasted changes every time it's poured.

Traditional solid formats have faced limitations  
in dissolution speed and foam consistency.

Amid weight, volume, and repeated inconvenience,  
we began to ask:

**Is there a more stable, more convenient way?**

And that's when we started to rethink the formulation.



# So We Changed the Starting Point of Formulation

AEROFOAM

is not simply a **dried liquid**.

From the very beginning, it was designed with a clear goal — **to create the most stable structure in a dry state.**

Stable while stored in **dry form**,  
and **activated** upon contact with water during use.

While conventional liquids store an already completed state, AEROFOAM is designed to operate only **at the moment of use.**



# AEROFoAM

A foaming solid solution beyond the limits of liquid

Improve both user experience and system efficiency,  
a scalable technology platform expandable across everyday products

# AEROFOAM

## Competitive Advantages Derived from Structure

When the structure changes, usage changes.



### Precise Dosage

Liquid  
“One pump, two pumps”  
→ High user variability

**AEROFOAM**  
Unit-based usage ensures  
consistent dosage  
Prevents overuse



### Shape Versatility

Liquid  
Differentiation  
only through packaging

**AEROFOAM :**  
Shape itself enables  
brand identity



### Fresh-on-Use Activation

Liquid  
Oxidation and degradation  
begin upon opening

**AEROFOAM :**  
Maintains stability and  
freshness



### User Experience

Liquid  
Similar experience  
Not memorable

**AEROFOAM:**  
Light / Soft / Novel  
shape recovery when  
pressed  
A memorable format

**Usage becomes more stable  
while creating a differentiated experience**

# AEROFOAM

## Operational Advantages Derived from Structure

When structure changes, operations transform.



### Reduced Preservative Dependency

Liquid  
Relies heavily on preservatives

**AEROFOAM :**  
High-temperature process (100–150°C) reduces microbial growth



### Stability Across Temperature Conditions

Liquid  
Degradation under high or freezing temperatures

**AEROFOAM :**  
Highly advantageous for export and storage



### Ultra-Lightweight, High Concentration

Liquid  
80–90% of transported weight is water

**AEROFOAM :**  
Significant reduction in logistics, carbon, and packaging costs



### Structure-Based ESG Impact

Liquid  
Requires packaging containers

**AEROFOAM:**  
Reduced water transport/ plastic usage/carbon emissions

**Operations become more efficient  
and aligned with market trends**

# How AEROFOAM Works

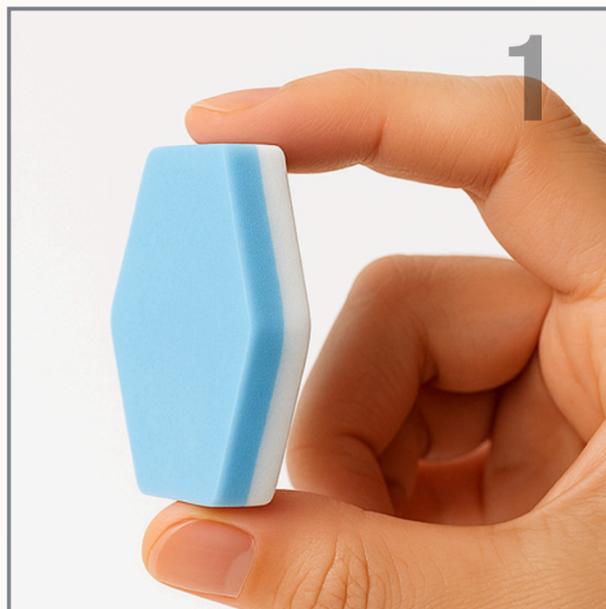
Soft AEROFOAM shee



Activated when it meets water



Transforms into foam and dissolves



A close-up photograph of white foam, showing the intricate, interconnected structure of the bubbles. The foam is soft and voluminous, with a fine, porous texture. The lighting is soft, highlighting the delicate structure of the bubbles.

## A Different Approach

Most solid products work like this:

**Solid + Water → Foam**

AEROFoAM works differently:

**Foam → Structuring → Solidification → Reactivation**

In simple terms,  
foam isn't created later —  
it's designed in from the start.

# AEROFOAM Technology

Water-Activated Foaming Solid Technology

# HOW

## Formulation

Precisely engineered main ingredients, enzymes, and functional components based on foaming and solidification stability and intended use

## Foaming

Application of a foaming process to create a uniform foam structure based on the designed formulation

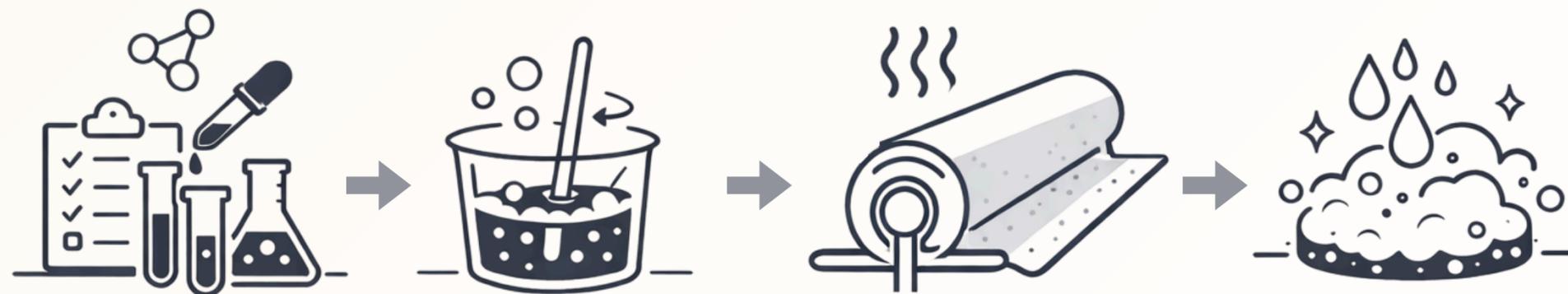
## Solidification

Solidification process applied while maintaining the generated air-layer structure to stabilize the form

## Instant Reactivation

Upon contact with water, the sponge-like solid quickly dissolves and transforms into foam

**AEROFOAM is a technology integrating the entire process — from formulation to foaming to solidification**



# Why AEROFOAM

Water-Activated Foaming Solid Technology

# WHY



## Technical Advantage

- Stable foam formation through structure-preserving solidification
- Integrated design across formulation, foaming, and solidification



## Logistics & Sustainability 지속가능성

- Container-free structure minimizes packaging materials
- Solid format improves logistics efficiency
- Contributes to waste and carbon reduction



## User Experience

- Precise dosing reduces waste
- Convenient storage and portability
- Consistent foam quality for reliable performance



## Platform Value

- Expandable across cleaning, personal care, and beauty categories
- Built as a technology platform.
- Flexible framework for new category applications

**The AEROFOAM process structure improves not only product performance but also the business model**

# AEROFOAM Applications

Water-Activated Foaming Solid Technology

# WHAT

## Beauty & Personal Care

- Shampoo
- Facial cleanser
- Shaving foam
- Body wash
- Hand wash
- Feminine wash
- Oral care (mouthwash)
- Bath products
- Travel kits

## Home & Living Products

- Laundry detergent
- Dish detergent
- Kitchen cleaner
- Toilet cleaner
- Cleaning scrub  
(Kitchen, bathroom,  
camping)

## Pet Supplies

- Pet shampoo
- Pet bubble sheets

## Other Cleaning Products

- Car shampoo
- Glass cleaning sheets
- Bug cleaning sheets



# Flexible AEROFOAM Formulation

Water-Activated Foaming Solid Technology

# FLEXIBILITY



- AEROFOAM is not a fixed formulation, but a structure-based technology that can be tailored to meet brand's requirements
- Formulation R&D and design consider concept ingredients and brand identity elements to enable differentiation

Example:

For brands with existing body wash, shampoo, or cleanser lines, their original formulation concepts can be maintained while transitioning into the AEROFOAM structure

**We collaborate with brands  
to integrate their identity and formulations into the AEROFOAM platform.**

# A Technology Structure Designed for Scalability

# PLATFORM

## Core Technology

A consistent technology core structure connecting  
formulation → foaming →  
solidification → reactivation

### Modular Design

Allows adjustment of  
ingredient combinations, foam  
volume, and reaction speed  
based on product purpose



### Cross-Category Applicability

A technology framework  
expandable across  
cleaning, home, and beauty  
categories



### Scalable Manufacturing

A manufacturing structure  
based on continuous  
processes suitable  
for mass production

**AEROFOAM is a technology platform  
designed with scalability and expansion in mind.**

# CURRENT APPLICATIONS

\* **Beauty & Personal Care**



## Example of Single-Use Dosage Based on AEROFOAM Format

AEROFOAM Usage by Product Category			
Category	Reference	AEROFOAM Single Use	Comparison
Shampoo	Short hair (shoulder length)	0.8~1.0g	Liquid approx. 15~20g
Body Wash	Adult	0.8~1.0g	Liquid approx. 15~20g
Facial Cleanser	Adult	0.3~0.4g	Tube amount approx. 3cm
Feminine Wash	Adult	0.5~0.8g	Liquid approx. 5~8ml
Oral Care (Mouthwash)	Dissolved in 50~100 ml water	0.3~0.6g	Gargle approx. 15~20ml
Bath Additive	150~160 L bath	2.0~4.0g	Tablets(15g) X2~3개
Laundry Detergent	3~5 kg standard load	3.0g	Liquid approx. 25~30g

※ This table is a reference example showing how single-use units can be defined across product categories when applying the AEROFOAM structure.

## Where Do We Stand?

# WHERE

### **AEROFOAM sits between technology and market.**

- Market transformation has already begun, but the structures to implement it remain limited
- AEROFOAM bridges the gap between market demand and real-world implementation
- Designed not as a single product, but as an adaptable structural technology

**The everyday products industry, including beauty and cleaning,  
is now at a turning point.**

# AEROFOAM 기술을 활용하고자 하는 파트너

# WHO

## 1

### **Brand Owners**

Brands looking to expand their existing product portfolios into new formats

## 2

### **OEM / ODM Partners**

Partners seeking collaboration from formulation development through manufacturing and scale-up

## 3

### **R&D Partners**

Partners interested in joint research for technology advancement and new product category exploration

**We pursue execution-driven partnerships that connect technology development with product implementation.**

# AEROFOAM-Based OEM Customization

We design each brand's assets to fit the AEROFOAM structure.



## Shape & Dimensions

- Shape customization available
- Size specifications can be tailored

Product size and form become part of brand strategy.



## Color & Visual

- Single-color and dual-tone options
- Brand color applicable

Color is a language that communicates function.



## Concept Ingredients & Functionality

- Existing brand formulations can be applied
- Customization of concept and functional ingredients

We design not just products, but brand identity.



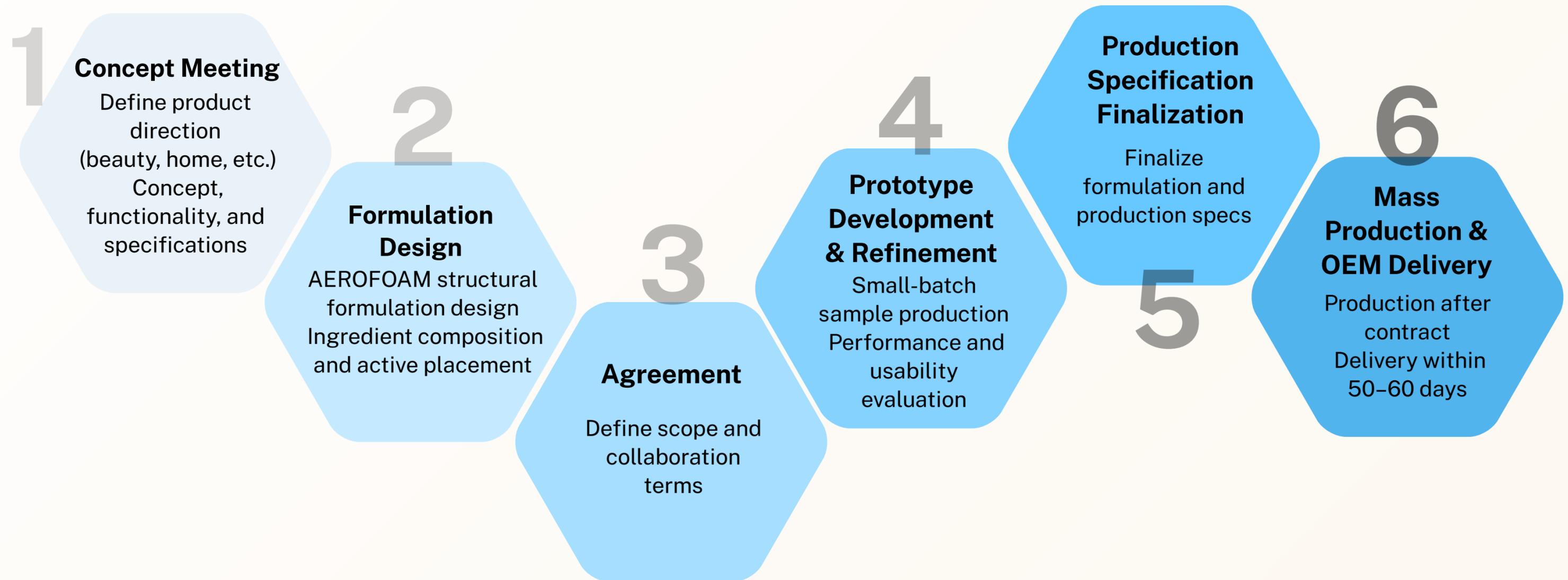
## Fragrance Customization

- Fragrance-free, post-added, residual, and microcapsule options
- Immediate or long-lasting scent release

Fragrance is a strategic element.

# OEM Collaboration Process for AEROFOAM

From format and fragrance to functionality —  
we turn brand concepts into real products.





**The conversation around applications is now open.**

**AEROFOAM is a structure  
designed to unlock a wide range of possibilities.**

**We welcome further discussions  
if you are interested.**



**Thank you**