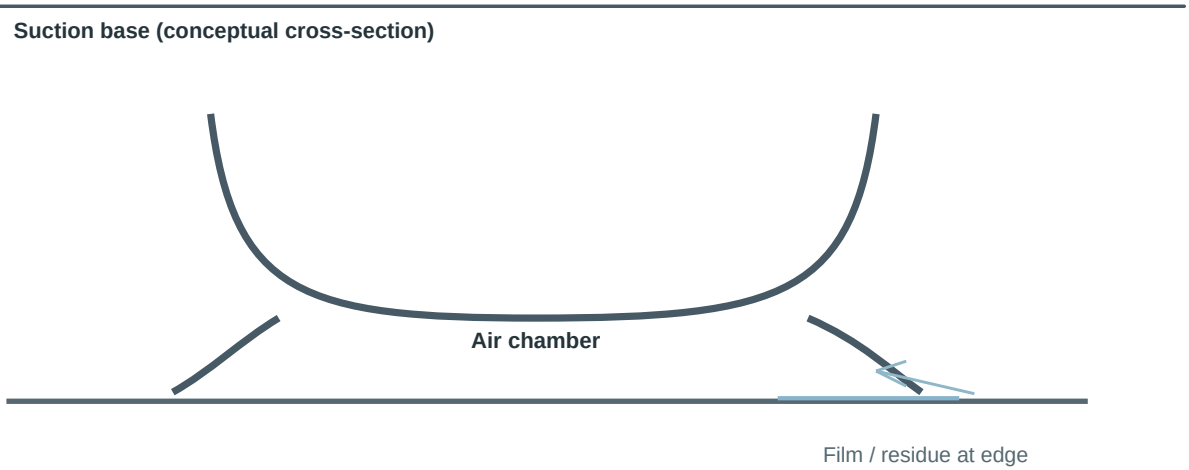
Silicone Suction Bowl Releases After Hot-Water Cleaning

Failure diagnosis and redesign guide | Technical briefing for baby feeding brands and product engineers



The central question: Did suction disappear only while the bowl and table were warm or wet, or does the bowl still release after both are completely cooled, cleaned and dried? The answer changes the investigation.

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Audience: Product development, quality control, supplier replacement and private-label baby feeding brands.

Scope: This is a representative diagnosis framework, not an account of a verified customer test or a guarantee of holding force. Confirm cleaning instructions and test limits against the actual finished product and target market.

Contact: sales@siliconefactories.com | Send drawings or failed samples to Reemane

1 | Read the failure symptoms before changing the mold

The same customer complaint may represent a temporary use condition, a geometric seal defect, material-recovery weakness, or a molding / packaging problem. Record exactly when the bowl releases and under what conditions.

Observed behavior	First investigation	What it does not prove
Releases only while hot or immediately after rinse	Cool / dry bowl and table; repeat identical activation	Does not by itself prove permanent material damage
Fails after detergent washing, recovers after thorough rinsing	Residue, grease and surface condition; compare cleaning agents	Does not prove lower Shore A is needed
Fails after cooling and drying, multiple clean tables	Lip flatness, chamber height, release-tab path, mold variation	Not automatically a material issue
Works when new; declines after many hot wash cycles	Cycle history, lip distortion, compound recovery, storage and packaging	Do not assume that boiling water always destroys silicone
One cavity or color fails more often	Cavity dimensions, trim, cure, hardness and packing position	Not explained by tabletop alone

Immediate triage: four matched comparisons

- **A.** Unwashed retained control sample, tested at room temperature on a clean, dry, flat nonporous reference surface.
- **B.** Same design immediately after the specified hot-water wash; record temperature and visible surface moisture.
- **C.** Washed sample after complete cooling, rinsing and drying under the same activation procedure.
- **D.** Washed sample after repeated cleaning cycles and storage in the intended packaging.

Interpretation: Recovery in C points toward a temporary condition. Persistent loss in C and D warrants dimensional and material/process investigation. A and C must be tested under the same defined conditions.

2 | Investigate the seal system, not only silicone hardness

The cup-and-table interface is a closed chamber only while the edge creates continuous contact. Pressure difference provides holding force; a small local air path can cause release or progressive peel.

Design element	Failure mechanism	Engineering check
Sealing lip	Folded, warped, locally thick, damaged or nonuniform contact	Inspect 360-degree contact ring, flatness and edge trim
Chamber height	Insufficient chamber collapse or bottoming out before air escapes	Compare section geometry before and after pressing
Bowl body / bottom support	Flexible bowl body transfers side load and initiates peel	Apply controlled off-center force; observe lift point
Release tab	Tab curls upward, lifts adjoining lip or forms leakage path	Check tab-lip transition before and after washing

Design element	Failure mechanism	Engineering check
Material / cure	Recovery or modulus changes under the specific heat / wash exposure	Compare retained lot samples; supplier compound records
Mold / trimming	Flash ridge, short fill, dimensional asymmetry or nick on lip	Measure multiple cavities; inspect parting line
Packaging	Flattened lip or warped base after stacked storage	Re-test unpacked, conditioned samples

Why changing Shore A alone can fail

A softer silicone compound may improve local conformity, but it can also let a thin lip fold or the bowl body deform. A firmer compound may improve stability but make activation harder. Hardness is only one measured property; the selected compound, wall thickness, lip profile and chamber geometry must be tested together.

For material recovery, distinguish an **immediate temperature-dependent change** from accumulated deformation after repeated exposure. ASTM D395 addresses rubber compression set under specified loads and conditions, but a standard compression-set result is not a ready-made suction-bowl performance rating.

3 | Representative redesign workflow

The following case-style workflow is illustrative. No customer name, complaint rate, test result, material grade or redesign success is claimed.

01 | Reproduce the complaint

Collect a failed sample, unused comparison piece, water-temperature / cleaning details, video, tabletop description and exact activation technique.

02 | Establish controlled reference conditions

Use one flat, clean, dry, nonporous reference surface and repeat the same cooling and drying step. Test all comparison samples consistently.

03 | Map the contact edge

Inspect the full seal circumference. Identify a repeatable gap, curled release tab, visible trim defect or uneven lip thickness.

04 | Measure geometry before changing hardness

Compare free-state lip height, chamber depth, base diameter, support features and flatness between passed and failed samples.

05 | Assess process and post-use recovery

Review mold cavities, cure records, finishing, washing agents and package compression. Compare dimensions after defined conditioning.

06 | Prototype a single controlled change

Revise the lip thickness / root radius, chamber collapse path, body stiffness or tab transition as appropriate. Avoid changing geometry and compound simultaneously unless the experiment can isolate their effects.

07 | Validate before production

Approve repeat wash-cycle performance, side-load resistance, release usability, quality inspection points and packaging conditions.

Do not overclaim: Commercial suction bowls cannot be guaranteed to stick to every wooden, textured, porous or uneven table. Marketing claims must match the exact tested surfaces and instructions.

4 | Controlled hot-water cleaning validation

For supplier approval, record conditions before testing. The manufacturer and brand must agree temperatures, cycle durations, detergents, reference surfaces and acceptance criteria rather than applying arbitrary universal values.

Controlled factor	Record / acceptance plan
Cleaning exposure	Specified water temperature or dishwasher program, immersion time, detergent and number of cycles
Temperature state	Immediately after washing vs completely conditioned to common room temperature
Surface state	Wet, towel-dried, fully dry; same surface cleaning procedure
Tabletop	Named flat nonporous reference surface, plus defined real-use surfaces
Activation	Where pressure is applied, duration, operator method or controlled fixture
Holding performance	Predefined initial seal, elapsed holding period, vertical / lateral or peel-loading procedure
Removal usability	Adult-accessible intentional release; no unintended easy lift in normal use
Geometry	Base flatness, lip contact, chamber height and release tab, before / after cycles
Sampling	Multiple parts, molds / cavities, production lots where available
Packaging	Final retail pack and storage conditioning before retest

Decision logic

- **Fails only while warm / wet:** adjust cleaning / drying instructions if validated; do not immediately retool.
- **Fails after cooling and drying:** inspect dimensional change, sealing contact and compound/process recovery.
- **Fails only on certain tables:** characterize surface compatibility and avoid universal suction claims.
- **Fails only in certain production units:** inspect cavity-to-cavity variation, trimming, cure, packaging and handling.

For safety, test stability under realistic mealtime conditions. A suction feature is not a substitute for supervision, and the product should not be marketed as impossible for a child to pull free.

5 | Reemane RFQ and failure evidence checklist

Before quotation or mold modification, send the facts needed to determine whether the issue belongs to use conditions, design, material or process.

- Current STEP / STP or 2D drawing, mold revision and available sample;
- Photos and video: before wash, immediately after wash, after full cooling and drying;
- Cleaning process: water temperature, duration, detergent, rinsing, drying and wash cycles;
- Tabletop material and texture; photos of the actual failure surface;
- Base and lip measurements; known Shore A and silicone grade if available;
- Whether the release tab, edge trim or packaging shows deformation;
- Original sample performance, affected lot / cavity if known, and approximate failure frequency;
- Target country, finished-product requirements, labeling and cleaning instructions;
- Prototype quantity, first production quantity, annual use and target launch timeline.

Practical scope of support

Reemane can review existing-mold baby suction bowls or custom suction-base designs, discuss material and molding direction, develop prototype samples and coordinate the agreed testing and packaging requirements. Whether an existing mold can be modified depends on its insert structure and steel availability; no modification or result should be promised before engineering review.

Send drawings and failure videos for review
https://www.siliconefactories.com/get-a-quote/
sales@siliconefactories.com

Related Reemane pages

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Silicone Mold Development
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Sample test record (project worksheet)

Use this blank register to compare returned customer samples with retained control samples. Fill every condition before recording a pass/fail conclusion.

Sample ID	Condition / exposure	Surface / activation	Seal result / notes
Control	_____	_____	_____
Hot - after wash	_____	_____	_____
Cooled + dried	_____	_____	_____
After repeated cleaning	_____	_____	_____

Approval sign-off: Approved sample revision _____ | Test method revision _____ | Responsible reviewer _____

Technical boundary: This guide is an engineering decision aid. Product performance must be established using actual samples and documented user / cleaning conditions. Do not infer FDA / LFGB approval or claim that one material report covers every color and finished product.