HACCP Assessment
Vanilla Slush Product

Hazard Analysis and Critical Control Point overview for vanilla semi-frozen slush beverage prepared using pasteurized milk, vanilla base, approved ingredients, and slush machine processing.

Product	Vanilla Slush
Intended Use	Cold / semi-frozen beverage for immediate consumption
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1. Product Description

Smooth semi-frozen vanilla slush beverage prepared from vanilla base, milk, and approved ingredients, processed in a slush machine to create a creamy semi-frozen texture.

Area	Details
Ingredients	Pasteurized milk, vanilla base, potable water/ice as applicable, and approved ingredients.
Packaging / Serving	Approved cold cup with lid and straw. Product should be dispensed directly from slush machine and served immediately.
Storage	kept refrigerated at 0°C to 5°C before loading. Keep sealed, labeled, and protected from contamination.
Product Condition / Delivery	Chilled beverage after full preparation. Slush machine holding temperature: approximately -2°C to -4°C.
Shelf Life	Prepared mix shelf life: up to 7 days when kept sealed and refrigerated at 0°C to 5°C. Slush mix in machine should be used within same operating day and machine cleaned according to cleaning schedule.

2. Process Flow

1. Receiving milk, base, packaging, and approved ingredients
2. Cold storage of raw materials / prepared mix
3. Mixing and preparation of approved vanilla slush mix
4. Chilling before loading
5. Loading into clean slush machine
6. Slush freezing / machine operation until target texture
7. Cold holding in slush machine
8. Dispensing and serving
9. End-of-day disposal and cleaning / sanitation

3. HACCP Hazard Assessment Table

Process Step	Potential Hazard	Type	Control Measure	CCP?
Receiving ingredients	Damaged packaging, expired milk/base, temperature abuse, foreign objects	Biological / Physical / Chemical	Approved supplier, delivery temperature check, packaging and expiry check, reject damaged or expired items	No
Cold storage	Temperature abuse, microbial growth, cross-contamination, allergen cross-contact	Biological / Allergen	Keep refrigerated at 0°C to 5°C, sealed containers, FIFO, allergen separation, daily temperature log	Yes
Mix preparation	Incorrect dilution, contaminated utensils, allergen cross-contact, poor mixing	Biological / Chemical / Allergen / Quality	Use approved recipe, sanitized utensils, pasteurized milk, potable water, controlled mixing, label batch	Yes
Chilling before loading	Prepared mix left at unsafe temperature before machine loading	Biological	Chill mix to 0°C to 5°C before loading; minimize time at room temperature	Yes
Slush machine operation	Incorrect machine temperature, large ice crystals, blocked flow, poor texture	Biological / Quality	Operate machine to target texture; verify serving temperature range -4°C to 0°C, target -3°C	Yes
Machine holding	Extended holding, microbial growth, quality deterioration, contamination from machine parts	Biological / Physical	Use within same operating day, keep machine covered/closed, monitor temperature, discard leftovers at end of day	Yes
Serving	Cross-contamination from hands, cups, lids, straws, or surfaces	Biological / Physical / Allergen	Hand hygiene, approved packaging, do not touch inside cup/lid/straw, clean counter, avoid allergen cross-contact	No
Cleaning and sanitation	Chemical residue, ineffective cleaning, milk residue inside machine	Chemical / Biological	Correct chemical dilution, rinse as required, follow machine cleaning schedule, supervisor verification	Yes

4. Critical Control Points - CCPs

CCP 1: Cold Storage of Mix / Ingredients

Hazard: Microbial growth from temperature abuse, especially due to milk-based ingredients.
Critical Limit: Ingredients and prepared mix must be stored at 0°C to 5°C. Prepared mix shelf life is up to 7 days only when sealed and refrigerated.
Monitoring: Check chiller temperature daily. Verify batch label, preparation date, and expiry date before use.
Corrective Action: Reject or discard any mix stored above the limit, expired, unlabeled, sour, separated, or suspected unsafe.

CCP 2: Mix Preparation and Chilling Before Loading

Hazard: Cross-contamination, incorrect recipe, poor mixing, or warm mix loaded to machine.
Critical Limit: Use approved vanilla slush recipe with pasteurized milk and approved base. Mix completely and chill before loading.
Monitoring: Supervisor or trained staff checks recipe, ingredient condition, mixing quality, and temperature before loading.
Corrective Action: Stop preparation, correct recipe if possible, re-chill if safe, or discard if contamination or unsafe handling is suspected.

CCP 3: Slush Machine Temperature / Serving Temperature

Hazard: Microbial growth or quality failure from incorrect machine holding temperature.
Critical Limit: Slush machine holding temperature approximately -2°C to -4°C. Finished serving temperature range: minimum -4°C, target -3°C, maximum 0°C.
Monitoring: Check machine setting and product texture during operation. Verify temperature if product appears melted, separated, or abnormal.
Corrective Action: Adjust machine or stop service. Discard product if temperature, texture, or safety limit is not maintained.

CCP 4: Same-Day Machine Holding and End-of-Day Disposal

Hazard: Quality deterioration, milk residue buildup, and microbial growth from extended machine holding.
Critical Limit: Slush mix in machine should be used within the same operating day. Remaining mix must be discarded according to SOP unless an approved validated process exists.
Monitoring: Record loading time and discard time. Supervisor verifies end-of-day disposal and cleaning.
Corrective Action: Discard expired or leftover machine mix. Clean and sanitize the machine before reuse.

CCP 5: Cleaning and Sanitation of Slush Machine

Hazard: Milk residue, biofilm, chemical residue, or foreign matter inside machine.
Critical Limit: Machine must be cleaned according to cleaning schedule using correct dilution and rinsing procedure.
Monitoring: Daily cleaning checklist and supervisor inspection after cleaning.
Corrective Action: Re-clean and re-sanitize if cleaning is incomplete. Do not load fresh mix until machine is verified clean.

5. Good Manufacturing Practices - GMP

- Wash hands before handling cups, lids, straws, ingredients, or machine parts.
- Use only approved pasteurized milk, approved base, and potable water/ice where applicable.
- Keep prepared mix sealed, labeled, refrigerated, and protected from contamination.
- Use FIFO system: First In, First Out.
- Do not load product into a dirty or unverified slush machine.
- Avoid touching inside cups, lids, and straws.
- Separate cleaning chemicals from ingredients and packaging.
- Follow allergen control practices for milk, gluten, chocolate/vanilla, and nearby nut or coffee products.

6. Sensory and Finished Product Controls

Control Area	Acceptance Criteria
Visual Appearance	Creamy white to light vanilla-colored semi-frozen beverage with smooth slush consistency. No visible curdling, separation, or large ice lumps.
Colour	Milky white to pale cream vanilla color.
Aroma	Sweet vanilla aroma with clean dairy notes.
Texture / Mouth Feel	Smooth semi-frozen slush texture, creamy mouth feel, balanced sweetness, no icy hard crystals or powdery texture.
Serving Temp	Minimum -4°C / Target -3°C / Maximum 0°C
Brix / Sweetness	12 - 16 Brix; target 14 Brix.
Net Volume	Minimum 330 ml / Target 355 ml / Maximum 380 ml
Reject Product If	Milk sourness, curdling, separation, large ice crystals, clumping, blocked machine flow, off smell / off taste, excessive sweetness, weak vanilla taste, foreign matter, incorrect texture, or expired mix.

7. Allergen Assessment

Contains: Milk, gluten, vanilla. Cross-contact may occur with chocolate, nuts, coffee, or other flavored ingredients handled in the same area. Control: Use dedicated, clean utensils where practical, prevent cross-contact, and inform customers that cross-contact may occur if applicable.

8. Verification Activities

- Daily chiller temperature record
- Prepared mix batch label and expiry review
- Slush machine temperature / texture check
- Brix / sweetness verification as scheduled
- Machine cleaning checklist
- Supervisor review
- Supplier approval review
- Staff hygiene inspection

9. Records Required

Record	Frequency
Receiving checklist	Each delivery
Cold storage temperature log	Daily
Mix preparation / batch log	Each batch
Slush machine temperature / texture log	During operation / each batch
Brix check record	As scheduled / each batch when required
End-of-day discard log	Daily
Cleaning checklist	Daily
Staff training record	Monthly / when needed

10. Final Product Safety Statement

Vanilla Slush is a milk-based semi-frozen beverage that requires strict control of refrigerated storage, mix preparation, slush machine temperature, same-day machine holding, allergen control, and machine cleaning. The key controls are 0°C to 5°C refrigerated storage before loading, -2°C to -4°C machine holding, finished serving temperature within -4°C to 0°C, and daily cleaning/sanitation.

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