2025

The Paste

MARIAUD CONSULTING

Our PROGRAM

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MARIAUD Consulting

The Paste

The Paste 01 Présentation

📌 The paste in barrel-making

In barrel-making, the paste is mainly used to **ensure the sealing between the heads and the staves of the barrel.** It is applied all over the surface of the **head**, where it comes to **plug the pores of the wood and fill the irregularities** between the head and the staves. This ensures an efficient seal from the first uses of the barrel.

In certain cases, especially during **repairs**, the paste can also be used on the **joints of the staves**, to reinforce the seal of old or fragile assemblies. Traditionally composed of **flour and water**, the paste is adjusted according to the use and the workshop habits. In semi-industrial production, certain modern recipes based on vegetable or synthetic binders can also be used.

The paste allows to:

✅ Ensure an immediate seal from the first fillings with liquid.
✅ Fill the micro-gaps between the head and the stave without compromising the adjustment.
✅ Reinforce the hold of the head under pressure.
✅ Facilitate disassembly and cleaning during repair.

- It is applied manually or mechanically just before the head is installed.
- It covers the entire surface of the regular head.
- During the final hooping, the head compresses the paste in the gaps.

🔹 The paste acts as a simple and natural joint. It follows the deformations of the wood while ensuring a perfect seal.

🧭 Key Points to Remember

- Adapt the recipe to the use and the season.
- Store the paste in a clean, temperate, and airtight place.
- Never use fermented paste (sour smell, bubbles, sticky texture).
- Apply the paste j**ust before the head is installed,** to prevent it from drying out.

🥩 Recipe 1 - Classic Paste with Wheat Flour

Composition :
- 🔸 150 g wheat flour
- 🔸 10 cl warm water
- ✅ Texture soft and homogeneous
- ✅ Easy to spread and quick to prepare
- ✅ Adapted to traditional workshops
- ❗ Color white, can be seen if not cleaned properly
- ❗ Sticky

🥩 Recipe 2 - Flour & Buckwheat

Composition:
- 🔸 100 g wheat flour
- 🔸 50 g buckwheat flour
- 🔸 10 cl warm water
- ✅ Texture more fibrous
- ✅ Slight improvement in hold on damp wood
- ✅ Color closer to oak

🥩 Recipe 3 - Flour & Oak Sawdust

Composition:
- 🔸 100 g wheat flour
- 🔸 50 g oak sawdust
- 🔸 10 cl warm water
- ✅ Excellent grip on the head
- ✅ Withstands compression well
- ✅ Color identical to oak

🥩 Recipe 4 - Flour & Oak Ash

Composition:
- 🔸 100 g wheat flour
- 🔸 50 g sifted oak ash
- 🔸 10 cl warm water
- ✅ Texture fatty, ideal for irregular heads
- ✅ Slight antiseptic action
- ✅ Good hold in humidity

The Paste 02 4 Typical Recipes

Recipe	Texture	Application / Installation	Aging & Humidity
Recipe 1 : 150g wheat + 10cl water	Soft, smooth, slightly sticky	Very easy to prepare. Often fluid and runs into the pores.	Becomes brittle when drying. Sensitive to humidity and mold. To be used within 24h.
Recipe 2: 100g wheat + 50g buckwheat + 10cl water	Thick, granular, good hold	Good kneadability. Sticks well to the head. Stays in place without running. Good hold under compression.	Good hold in humidity. Risk of fermentation if stored for a long time.
Recipe 3: 100g wheat + 50g oak sawdust + 10cl water	Dry, fine, slightly powdery	Less fluid. Sits less homogeneously if paste is too dry.	Very good resistance to mold. Swells slightly with humidity. Good stability.
Recipe 4: 100g wheat + 50g oak ash + 10cl water	Fibrous, compact, slightly rough	**Excellent grip.**	Very good stability.

The recipes presented here are **basic examples.** Each cooperage develops its own variants based on its practices, environment, and objectives.

Some use **rice flour, bran, or add liquid sulfur** to modify the texture, preservation, or behavior of the paste on wood.

🛡️ HACCP Standard - Safety and Risk Prevention

1. Inspect each bag of flour upon reception

Detail: Verify the bag's integrity (no tears, stains, mold), absence of a sour smell, or insect dust.
Example: When opening a bag, notice a fermentation smell and a trace of humidity → discard the bag from the stock immediately.

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2. Note the reception and opening date

Detail: Write legibly with a marker on the bag or airtight container. Use labels if necessary.
Example: "Received 10/04 - Opened 12/04" marked on a bucket with a lid containing the flour in use.

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3. Store the flour in an airtight container

Detail: Use food-grade buckets or closed bins to prevent humidity, direct light, and contamination.
Example: Pour the flour into a plastic bucket with a waterproof lid as soon as the bag is opened, then store it on a high shelf.

🛡️ Norme HACCP – Sécurité et prévention des risques

4. Maintain a stable temperature and a dry environment

Detail: Install a thermometer and a hygrometer in the storage room. Ensure ventilation and the absence of contact with the floor.
Example: Record the data on a wall chart every week**.**

→ temperature : 17 °C, humidity : 52 %.

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5. Apply the FIFO method (First In, First Out)

Detail: Organize the stocks so that the oldest flours are used first. Implement a rotation.
Example: Place the bag received on April 5th in front of the one from April 8th to ensure it is used first.

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6. Clean the containers regularly

Detail: Clean the storage buckets and bins every 15 days or with each lot change. Use hot water, dry thoroughly.
Example: After emptying a bucket, wash it, turn it over to dry, and disinfect it if needed before re-using.

🛡️ HACCP Standard - Safety and Risk Prevention

7. Keep a control register

Detail: Create a paper or digital file with the following elements: date, room temperature, visual/olfactory condition of the flour, signature.
Example: "15/04 - T°C: 16.8°C - Flour OK - No smell - Control carried out by Thomas."

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8. Eliminate all questionable flour immediately

Detail: Do not try to recover or mix a suspect flour, throw it away and report it.
Example: A paste made with poorly stored flour swelled after 6 h → throw everything away and check with the team on storage conditions.

🟦 ISO 22000 Standard - Safety organization and management

1. Write a simple and clear procedure

Detail: Detail the steps of flour management (reception, storage, preparation, disposal) in a document accessible to all.
Example: A fact sheet displayed in the workshop says: "Store the flour < 18 °C - Use within 7 days after opening - Paste to be discarded after 24h."

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2. Train operators in good practices

Detail: Integrate flour management into internal training. Provide a monthly reminder or in case of a procedure change.
Example: Organize a 2-minute reminder on the first Monday of each month to review flour hygiene and preservation.

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3. Create a raw material sheet per type of flour

Detail: Indicate on the sheet: product name, supplier, delivery date, DLUO, storage method. The Optimal Use-By Date (DLUO), now called the Minimum Durability Date (DDM)
Example: "Rye flour - Moulin Dupont - Lot 457 - DLUO 01/09 - Store dry at < 18 °C."

🟦 ISO 22000 Standard - Safety organization and management

4. Update procedures at least once a year

Detail: Revise documents based on field feedback or after an incident (paste too liquid, fermentation, etc.).
Example: After a series of losses related to summer humidity, add to the procedure: "Use a dehumidifier starting in May."

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5. Systematically check the flour before use

Detail: Before each use, visually check, smell, and validate the opening date.
Example: Every morning, the operator checks on his job sheet: "Flour OK / Paste OK / Date OK".

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6. Appoint a person responsible for flour monitoring

Detail: Assign a person the responsibility for stock, dates, controls, and container cleaning.
Example: Thomas manages the stock, notes the dates, checks the temperatures, and updates the monitoring sheet.

🟦 ISO 22000 Standard - Safety organization and management

7. Ensure traceability of lots of paste used

Detail: Associate each lot of prepared paste with the flour used (lot, date). Note this on the production sheet.
Example: "Barrel n°812 - Paste made 10/04 - Flour lot 456 - DLUO 30/05".

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8. Display reference visuals in the workshop

Detail: Use simple photos to illustrate: the correct texture of a paste, the correct storage method, and the errors to avoid.
Example: A laminated poster shows three textures: paste that is too dry, ideal paste, paste that is too liquid.

🔍 How to identify a fermented paste

1. Detect a sour or acidic smell

Smell a pungent odor, similar to vinegar or fermentation.

2. Observe the presence of bubbles or foam

Spot bubbles on the surface or inside the paste.

3. Note a change in color

Notice an abnormal yellowing or browning.

4. Evaluate the texture

Touch a paste that has become sticky, gooey, or slightly liquid.

5. Listen for gas release

Hear a small sound of pressure or gas when opening the container.

⏱️ Fermentation time depending on temperature

Room temperature	Estimated duration before fermentation
14-16°C	24 to 36 hours
18-20°C	12 to 24 hours
> 25°C	6 to 12 hours

✅ Precautions to be applied

- Prepare only the necessary quantity.
- Store in a cool place between 14 and 18 °C.
- Close the containers hermetically.
- Identify the time or date of preparation.
- Discard any questionable paste without hesitation.

It's up to you to put your knowledge into practice and perfect your expertise!