Requirements of Facilities Processing Maple Syrup or Certain Other Maple Products

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) regulates processing of maple syrup and certain other maple products. The information in this section applies to all licensed food processing plants engaged in processing maple syrup or certain other maple products, including maple sap, maple sap water, shelf stable concentrated maple sap, non-shelf stable concentrated maple sap, and maple-derived water in Wisconsin.

These requirements come from Wis. Admin. Code § ATCP 87 (Honey and Maple Syrup). These licensed facilities also must meet requirements in Wis. Admin. Code § ATCP 70 (Wholesale Food Manufacturing), except for certain topics as summarized in the section at the end of this document, "Facilities Used Solely for Concentration of Maple Sap."

Definitions

Degrees Brix: The percentage by weight concentration of total soluble solids, mainly sugar, as measured using a refractometer calibrated at 68°F, and to which any applicable temperature correction has been made, or by any other method that gives equivalent results.

Liquid maple products: Includes maple syrup, shelf-stable concentrated maple sap, non-shelf-stable concentrated maple sap, or maple sap water.

Maple-derived water: Permeate that is removed by reverse osmosis, or water that is otherwise removed, from sap from trees of the genus Acer.

Maple sap water: Sap from the trees of the genus Acer that has not been concentrated to a solids content of more than 4%, or 4 degrees Brix, and is a potentially hazardous food as defined in Wis. Admin. Code § ATCP 70.02(33).

Maple syrup: The liquid food derived by concentrating and heating sap from the trees of the genus Acer, as defined in 21 CFR 168.140, having a solids content of not less than 66% by weight, or 66 degrees Brix, and not containing added sweeteners.

Non-shelf-stable concentrated maple sap: Sap from the trees of the genus Acer that has been concentrated using heating or other methods; has a solids content of more than 4% and less than 66% by weight, or from 4 to 66 degrees Brix; and will support microbial growth when stored at temperatures not lower than 41°F (5°C) or higher than 135°F (57°C).

Shelf-stable concentrated maple sap: Sap from the trees of the genus Acer that has been concentrated using heating or other methods; has a solids content of less than 66% by weight, or less than 66 degrees Brix; and will not support microbial growth when stored at temperatures not lower than 41°F (5°C) or higher than 135°F (57 °C).

Potentially hazardous food: A food that requires time or temperature control to limit pathogenic microorganism growth or toxin formation as defined in Wis. Admin. Code § ATCP 70.02(33).

Turbidity: The suspension of fine mineral particles in the maple syrup such that the syrup clarity is reduced.

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Licensing

Food Processing Plants

Facilities that make maple syrup and wholesale it to another processor or entity must have a food processing plant license unless an exemption applies. Solely gathering maple sap water is *not* food processing and does not require a license.

Your facility does *not* need a food processing plant license if you do all of the following:

- Sell the maple syrup or concentrated maple sap only to other processors for further processing.
- Sell less than $5,000 during the license year. This includes sales for the combined gross receipts from all maple syrup, non-shelf-stable concentrated maple sap, and shelf-stable concentrated maple sap. This covers only *wholesale* product, and the $5,000 does not include retail sales.
- Keep a written record of every sale and retain that record for at least two years. Keep in mind:
    - The record must be available for inspection and copying by DATCP.
    - The record must include the name and address of the purchasing processor, the date of sale, the amount of maple syrup or concentrated maple sap sold, and the sale price.
- Register with DATCP before engaging in any processing activities in any license year ending March 31. A registration expires at the end of the license year. A processor must register in writing using the maple sap processor registration form (F-fd-346).

Retail Food Establishments

If you sell maple syrup to a consumer, you must have a retail food establishment license. But, you do not need this license if both of the following apply:

- Your establishment only sells fresh fruits and vegetables, honey, cider, sorghum, or maple syrup.
- You produced the product sold to the consumer.

Food Warehouses

You must have a food warehouse license if you hold liquid maple products or other food for more than 24 hours at a location other than your licensed food processing plant or retail food establishment.

Variances

DATCP may issue a written waiver granting a variance from a construction, equipment, utensils, processing, or procedure standard if DATCP finds that the variance is reasonable and necessary under the circumstances, and that it will not compromise the purpose served by the standards. A variance application may be obtained from, and must be submitted through, your sanitarian.

Reasons for requesting a variance might include:

- You do not have a handwashing sink and instead use containers to supply water and dispose of wastewater in a sanitary manner, and you meet all other requirements for handwashing sinks.
- You do not have a 3-compartment sink on site and instead sanitize equipment and utensils by using a 2-compartment sink in conjunction with a finishing pan on site.
- You do not have a 3-compartment sink on site and instead use a 3-compartment sink that is located offsite at a different licensed facility and transport sanitized utensils in covered totes.
- You do not have a toilet room that is contiguous to the food processing plant and instead use a noncontiguous, conveniently located toilet.

Water Supply

Water for use as an ingredient or in other plant operations must:

- Comply with the health-related drinking water standards of Wis. Admin. Code § NR 809 (Safe Drinking Water).

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- Be obtained from a source that complies with Wis. Admin. Code § NR 811 (Requirements for the Operation and Design of Community Water Systems).
- Be obtained from a source that complies with Wis. Admin. Code § NR 812 (Well Construction and Pump Installation).

If water for use as an ingredient or in other plant operations is obtained from a privately owned source:

- You must sample that water at least every 12 months.
- You must have that sample tested by a certified lab for coliform bacteria.
- You must provide the test results during inspections.

When water for use as an ingredient or in other plant operations is transported in a bulk tanker or container the additional requirements of Wis. Admin. Code § ATCP 70.20(6) also must be met:

- It must be loaded, transported, and unloaded in a sanitary manner that prevents contamination.
- The bulk tanker or bulk container must be thoroughly cleaned and sanitized before filling.
- Suitable pumps, hoses, and fittings must be used to transfer drinkable water and drinkable liquids to and from bulk tankers and bulk containers.
- The bulk tanker or bulk container and each of its fittings and equipment must meet all of the following requirements:
    - It must be constructed properly and maintained to prevent contamination.
    - Food contact surfaces must comply with Wis. Admin. Code § ATCP 70.12(2).
    - It must be cleaned, sanitized, and inspected on a routine basis.
    - It may not be used to transport materials that may contaminate drinkable water or liquid that is subsequently transported in the bulk tanker or bulk container.
    - It must be sealed to protect the contents from contamination during transit.
    - It must be stored properly and serviced to prevent contamination.

    - When not in use, pumps, hoses, and fittings must be properly maintained, capped, stored, and protected from contamination.

Wastewater Disposal

Wastewater must be disposed of in a sanitary manner, and this disposal must be in compliance with applicable state and local regulations. If you will be disposing of water directly to the ground from your handwashing sinks, manual cleaning sinks, permeate from reverse osmosis, or other sources—and especially if it may runoff to surface water—you should contact a Wisconsin Department of Natural Resources (DNR) wastewater specialist, local zoning office, and/or township to ensure that you receive any required permits.

For more information, visit the DNR website at https://dnr.wi.gov/topic/wastewater/PermitsStaff.html.

Processing Liquid Maple Products or Maple-derived Water by Methods Other Than Concentration

- Liquid maple products might include flavored syrups, maple flavored beverages, or other liquid maple products.
- Equipment and utensils must meet applicable requirements in Wis. Admin. Code § ATCP 70.
- Personnel must meet applicable requirements in Wis. Admin. Code § ATCP 70.

Packaging, Storing, and Transferring Liquid Maple Products or Maple-derived Water

- Containers for packaging must be stored in a manner to prevent contamination.
- Rooms used for filling containers intended for the consumer and rooms used for storage of packaged or unpackaged liquid maple products or maple-derived water must be constructed and maintained in accordance with Wis. Admin. Code § ATCP 70.08.
- Transfer methods must prevent contamination when transferring to another building or area.

Temperature Control

Non-shelf-stable concentrated maple sap, maple sap water, and maple-derived water are potentially hazardous foods. These must be handled, stored, and processed under temperature control at less than 41°F or greater than 135°F unless used as described next in, "Maple-derived Water Used for Cleaning."

Maple-derived Water Used for Cleaning

Maple-derived water obtained by the reverse osmosis treatment of maple sap may be used to clean evaporators or other equipment surfaces that contact maple sap before the maple sap is subjected to concentration by heating, if all of the following apply:

- The water does not have any objectionable odors, flavors, or slime. This water must be sampled daily for a physical evaluation, but no record is required.
- Chemical treatment of maple-derived water does not use any chemical to suppress bacterial growth in water, or to prevent off-tastes or odors in water, unless that chemical is approved for that purpose by the U.S. Environmental Protection Agency (EPA). Neither the chemical as applied, nor any compound produced by the chemical application, may contribute to the adulteration of food.
- The storage tank must be emptied, cleaned, and sanitized at least once every 24 hours.
- Lines and hoses used in conjunction with this water must be clearly identified.
- Atmospheric break and automatic controls must be used for temporary connections to food product vessels.

If you do not follow all of the above requirements and want to use maple-derived water to clean evaporators or food contact surfaces of other equipment, you must meet the rules for reclaimed water found in Wis. Admin. Code § ATCP 70.20(3)(b) which adds requirements including, but not limited to:

- Turbidity testing, automatic fail-safe monitoring device, and automatic diverter.
- Temperature control if holding for longer than 24 hours.
- Posting of instructions for use of lines and hoses.

Maple-derived Water as a Beverage or Used as an Ingredient in Other Food and Beverages

The process and equipment used for production of maple-derived water must be reviewed and approved by DATCP's Division of Food and Recreational Safety before use.

Maple-derived water may not be used as an ingredient in:

- Bottled drinking water
- Soda water beverages (commonly known as soft drinks or soda water)

Maple-derived water, when produced for use as ingredient water, must be meet certain standards:

- Less than 1 coliform bacterium per 100 mL.
- Standard plate count of not more than 500 colony-forming units per 500 mL.
- Turbidity of less than 5 units, or an organic content of less than 12 mg per liter.

Maple-derived water, when produced for use as ingredient water, must be tested annually by a lab certified under Wis. Admin. Code § ATCP 77 for the following:

- Coliform bacteria levels

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- Standard plate count
- Turbidity or organic content

The requirements for bottling establishments in sub chapter V of Wis. Admin. Code § ATCP 70 are not applicable to bottled maple-derived water.

Grading

If a facility has a food processing plant license, it must label its maple syrup product as one of the following: *Grade A, processing grade, substandard, or ungraded*. A product may only be labeled as ungraded if the product is sold in bulk to be further processed, or if the facility does not hold a food processing plant license.

Grade A

Maple syrup labeled as Grade A must meet the following characteristics:

- Is not more than 68.9% solids content by weight, or 68.9 degrees Brix.
- Has good uniform color, odor, flavor and intensity of flavor, or maple taste, normally associated with the color class for Grade A maple syrup.
- Is free from off flavors and odors considered as damage.
- Is clean and free from cloudiness, turbidity, and sediment.

The color class of Grade A maple syrup is determined by the percent of transmittance of light at a wavelength of 560 nanometers through the syrup, as measured with a spectrophotometer using matched square optical cells having a 10 mm light path. The color value is expressed as percent of light transmission, as compared to analytical grade glycerol fixed at 100%. Percent transmittance is denoted by %Tc. Any method that provides equivalent results may be used to determine Grade A maple syrup color class. Grade A maple syrup color classes and corresponding flavor descriptors are shown in Table 1.

Table 1. Maple Syrup Color Classes and Flavor Descriptors

Grade A Color Class	Flavor Descriptor	Percent Light Transmittance
Golden	Delicate	At least 75.0
Amber	Rich	50.0 – 74.9
Dark	Robust	25.0 – 49.9
Very Dark	Strong	Less than 25.0

Processing grade

Maple syrup labeled as processing grade must be packed in containers holding at least 5 gallons (18.925 liters) and must not be packaged in containers smaller than 5 gallons (18.925 liters) for retail sale. Processing grade maple syrup has all of the following characteristics:

- Fails to meet the requirements for Grade A maple syrup.
- Possesses a fairly good characteristic maple taste.
- Is fairly clean and fairly free of damage, turbidity, or cloudiness.
- May be in any color class and have any percent light transmittance.
- Not more than 68.9% solids content by weight, or not more than 68.9 degrees Brix.
- May contain off flavors and odors.
- May have a very strong taste.

Substandard grade

Maple syrup labeled as substandard does not meet the requirements for processing grade.

Ungraded

Any maple syrup that does not have a grade designation.

Geographical Designation

Providing a geographical designation for your product is optional.

A facility may label their product with a Wisconsin designation (such as “Made in Wisconsin”) if the maple sap was concentrated in Wisconsin to meet the definition of maple syrup. If all sap was concentrated in Wisconsin, the geographical designation may precede any grade. If only *some* sap was concentrated in Wisconsin, it may only precede Grade A.

A facility may label its product as “Bottled in Wisconsin” or “Packaged in Wisconsin” if true.

Recall Plan

All food processing plants are required to have a written recall plan. You may request a recall plan template from your sanitarian.

Food Packaging and Labeling

Packaged food must be packaged and labeled according to all of the following, as applicable:

- FDA food labeling laws in 21 CFR § 101.
- Defoaming agents used in the production of maple syrup may not contain any major food allergens.
- If the packaged food contains a major food allergen, the ingredient statement on the package must disclose the common name of the major allergen. The disclosure must be equivalent in size and prominence to the rest of the ingredient statement. If an allergen originates from fish, crustacean shellfish, or tree nuts, the disclosure must include the common name of the source species. For example, if a food product includes an allergen that originates from fish, the ingredient statement must disclose the common species name such as bass, flounder, or cod. If the allergen originates from crustacean shellfish, the ingredient statement must disclose the common species name such as crab, lobster, or shrimp. If the allergen originates from tree nuts, the ingredient statement must disclose the common species name such as almond, pecan, or walnut.

More information about the legal requirements for packaging and labeling can be found in Wis. Admin. Code § ATCP 70.26.

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Requirements of Facilities Used Solely for Concentration of Maple Sap

This section only applies to facilities (e.g., buildings, areas) and certain equipment used solely for concentration of maple sap. This section provides a summary of key requirements in Wis. Admin. Code § ATCP 87 (Honey and Maple Syrup).

Facilities used for other activities, such as prepackaging or bottling maple syrup that is intended to be sold at retail or directly to the consumer, must meet requirements for these topics as applicable in Wis. Admin. Code § ATCP 70 and Wis. Admin. Code § ATCP 87.

Construction and Maintenance

- Floors must be smooth, cleanable, and durable.
- Gravel floors are not allowed, as the processor must be able to effectively clean the floors.
- Floor coving, light-colored walls and ceilings, and impervious materials are not required.
- The buildings and facilities must have tightly sealed walls and ceilings.
- The area around the building must be well drained and kept free of potential health nuisances.

Doors, Windows, and Other External Openings

- These external openings must be screened or protected against the entry of pests.
- External doors do not need to be self-closing, but they must be kept closed when not in use.

Lighting

- There must be at least 10-foot candles (108 lux) of illumination in all areas.

Ventilation

- Ventilation must be sufficient to prevent condensation.
- There are no requirements for air intake filters or positive pressure.

Toilet Facilities

- Employees must have convenient access to a sanitary toilet complying with applicable local law.
- This may include a self-contained portable toilet maintained in compliance with Wis. Admin. Code § NR 113.

Handwashing Facilities

At least one handwashing sink must be conveniently located for the toilet room and processing area. All handwashing sinks must be provided with:

- Drinkable water under pressure.
- A sanitary single service means of drying hands.
- An easily cleanable covered trash bin.
- Soap in a soap dispenser.

Also see “Variances” section.

Cleaning Facilities

If equipment, utensils, or containers are cleaned or sanitized manually:

- A 3-compartment sink is required to be conveniently located in the food processing area.
- This 3-compartment sink must be supplied with hot and cold running water under pressure, such

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as water from a gravity pressurized system, pressure tank, or other pressurized system.

Also see “Variances” section.

Plumbing Systems and Sewage Disposal

- All sewage and liquid waste must be disposed of in a sanitary manner.
- This may include using a private on-site wastewater treatment system or a portable toilet.

Garbage and Refuse

- These must be held in durable, leak-proof, easily cleanable, and pest-resistant containers.
- These containers must be kept covered with tight-fitting lids, cleaned and maintained to not attract or harbor pests, and emptied daily or kept in a separate room or designated area.
- If burning garbage and refuse, it must be done in compliance with state and local laws.

Control of Pests

- Insect, rodents, and other pests must be kept out of food processing areas.
- All animals, including pets and livestock, must be kept out of these areas as well.
- Pesticides:
    - Must be approved for use in food processing facilities.
    - Must be used according to label directions.
    - May not be stored in a manner that may contaminate food.

Fuel Storage

- Fuel must be stored outside, but enough fuel for one day’s production may be kept inside.

Condensate from the Thermal Concentration of Maple Sap

- Re-use for doing more than cleaning non-food contact surfaces involves additional requirements.
- It does not need to be tested for turbidity or have an automatic fail-safe diverter.

Equipment and Utensils

- Food contact surfaces of equipment and utensils must be cleaned as often as necessary to remove visible debris and must be sanitized after cleaning and before contacting food.
- Lead or lead-alloy soldering may not be used in food-contact surfaces.
- Copper and copper alloys such as brass and bronze may not be used in contact with a food that has a pH below 6. Maple syrup and some saps have a pH below 6.
- A frame encasing an evaporator hood must be made of smooth, cleanable, food-grade material.
- Vessels only holding maple sap before concentration of maple syrup do not need to be covered but must be protected from contamination.
- Filtering material such as socks and presses must be in a clean condition before use.
- Filter papers may not be reused.
- Filtering agents such as diatomaceous earth must be nontoxic.

Personnel Standards

- Maintain a high degree of personal cleanliness and observe good hygienic practices.
- Wash hands before beginning work and upon returning to work.
- Do not work in the facility if you have a reportable communicable disease, any symptom of acute gastrointestinal illness, or an open wound on exposed portions of your body.
- Do not eat, drink, or use tobacco in the food processing area.

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