Final Molasses per Tonne Cane (Hugot) and from Stock

Final molasses % cane from mixed-juice brix, purity, boiling-house recovery and molasses analysis (Hugot eqn 33.43), and molasses from stock (eqn 38.2).

Method: Hugot; Handbook of Cane Sugar Engineering; ...

Input parameters

Unit system: SI

Parameter	Value	Unit
Mixed juice % cane	98.000	%
Mixed juice brix	15.000	%
Mixed juice purity	85.000	%
Final molasses brix	95.000	%
Final molasses purity	40.000	%
Boiling-house recovery (sucrose in sugar per sucrose in mixed juice)	90.000	%
Other boiling-house losses	1.0000	%
Crushing rate	100.00	t/h
Purity of a product in stock	85.000	%

Calculated results

Parameter	Value	Unit
Final molasses % cane	2.9593	%
Final molasses	2.9593	t/h
Sucrose of the stock product going to molasses	11.765	%

Notes for this case

- Hugot's example: Q 98, B 15, P 85, B_m 95, P_m 40, recovery 90 % and 1 % other losses give 2.96 % cane. The stock line uses pure sugar (s = 100).

Formula and method

$$q = \frac{QBP(1 - r - \varepsilon)}{B_m P_m}, \quad M = \frac{P_m(1 - j)}{j(1 - P_m)}$$

Variables

Q	Mixed juice % cane	-
B	Mixed juice brix	-
P	Mixed juice purity	-
B_m	Final molasses brix	-
P_m	Final molasses purity	-
r	Boiling-house recovery	-
ε	Other boiling-house losses	-
A	Crushing rate	kg/s
j	Purity of a product in stock	-
q	Final molasses % cane	-
$\dot{m}_M$	Final molasses	kg/s
M	Sucrose of the stock product going to molasses	-

Method and standards

Hugot's sucrose balance to molasses.

Assumptions and limits

- Steady state.
- Recovery is sucrose in sugar as a share of sucrose in mixed juice.
- The stock line is a separate calculation on the same page: it uses only the stock product's purity j and the final molasses purity P_m, with pure sugar (s = 100).

References

• Hugot
• Handbook of Cane Sugar Engineering
• 3rd ed. (Elsevier, 1986)
• ch. 33
• eqn 33.43
• p. 677; ch. 38
• eqns 38.1–38.2
• p. 837

Report details

Report reference	FCC-THZF-JABY (the same inputs always give the same reference)
Generated	17 November 2026, 19:35 UTC
Calculator	Final Molasses per Tonne Cane (Hugot) and from Stock
Method last reviewed	13 November 2026
Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/sugar-ethanol/pan-boiling/final-molasses-hugot

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.