Purity Drop of Mud Held in the Clarifier

Fall in purity of clarifier mud held hot over time, by Hugot's rule (eqn 29.1: t/10 up to 10 hours, t²/100 beyond), and the mud purity left.

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

Input parameters

Unit system: SI

Parameter	Value	Unit
Time the mud is held	6.0000	h
Purity of the mud juice when settled	84.000	%

Calculated results

Parameter	Value	Unit
Purity drop (points)	0.60000	%
Purity after holding	83.400	%

Notes for this case

- Rule for mud at about 95 °C and pH 6–6.5. Over weekends Hugot cools the juice to 80 °C, adds lime to pH 8.7 and a little formalin.

Formula and method

$$\Delta P = \frac{t}{10} \ (0 < t \leq 10 \text{ h}), \quad \Delta P = \frac{t^2}{100} \ (t \geq 10 \text{ h})$$

Variables

t	Time the mud is held	s
P_0	Purity of the mud juice when settled	-
ΔP	Purity drop (points)	-
P	Purity after holding	-

Method and standards

Hugot's empirical rule.

Assumptions and limits

- Mud near 95 °C, pH 6–6.5; temperature and pH are not inputs. Apparent purity (brix and pol), as in routine control.
- Beyond about a day the rule is an extrapolation; a note appears.

References

- Hugot
- Handbook of Cane Sugar Engineering
- 3rd ed. (Elsevier, 1986)
- ch. 29
- eqn 29.1
- p. 433

Report details

Report reference	FCC-P4C7-8NC5 (the same inputs always give the same reference)
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Calculator	Purity Drop of Mud Held in the Clarifier
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/clarification/clarifier-mud-purity-drop

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.