Milk SNF and Total Solids from Lactometer Reading and Fat

Solids-not-fat and total solids of milk from the corrected lactometer reading and fat per cent, by the ISI formula or Richmond's formula, with specific gravity.

Method: ISI formula (Indian practice) and Richmond's formula for milk solids

Input parameters

Unit system: SI

Parameter	Value	Unit
Corrected lactometer reading (at the lactometer's temperature)	28.000	
Fat	4.5000	%
Formula	ISI: SNF = CLR/4 + 0.21F + 0.36	

Calculated results

Parameter	Value	Unit
Solids-not-fat	8.3050	%
Total solids	12.805	%
Specific gravity	1.0280	

Notes for this case

• The lactometer reading (CLR) is (specific gravity − 1) × 1000 after correcting to the lactometer's calibration temperature. Fat lowers density and solids-not-fat raise it, so SNF follows from CLR and fat: the ISI formula SNF = CLR/4 + 0.21F + 0.36 is used at Indian milk collection centres; Richmond's TS = CLR/4 + 1.2F + 0.14 gives a slightly different SNF. Low SNF with a low CLR suggests added water. Use the formula your buyer or standard specifies.

Formula and method

$$SNF = \frac{CLR}{4} + 0.21F + 0.36 \ \text{(ISI)}, \quad TS = \frac{CLR}{4} + 1.2F + 0.14 \ \text{(Richmond)}$$

Variables

CLR	Corrected lactometer reading (at the lactometer's temperature)	-
F	Fat	-
formula	Formula	-
SNF	Solids-not-fat	-
TS	Total solids	-
SG	Specific gravity	-

Method and standards

SNF from CLR.

Assumptions and limits

- Normal cow or buffalo milk.

References

ISI formula (Indian practice) and Richmond's formula for milk solids

Report details

Report reference	FCC-JRY4-DX5G (the same inputs always give the same reference)
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Calculator	Milk SNF and Total Solids from Lactometer Reading and Fat
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Release checks	3 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/chemical/food-dairy/milk-snf-from-clr

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.