Titratable Acidity of Milk as Lactic Acid (% and °Dornic)

Titratable acidity of milk, yoghurt or whey as per cent lactic acid and degrees Dornic from the titre of sodium hydroxide of known normality.

Method: Acid–base titration as lactic acid

Input parameters

Unit system: SI

Parameter	Value	Unit
Titre of NaOH	1.6000	mL
Normality of NaOH	0.10000	
Sample mass	9.0000	g

Calculated results

Parameter	Value	Unit
Titratable acidity as lactic acid	0.16014	%
Degrees Dornic	16.014	

Notes for this case

• Each millilitre of 1 N NaOH neutralises 90.08 mg of lactic acid, so the acidity is V × N × 0.09008/m (with V in mL and m in g) as a fraction of the sample. Fresh milk shows 0.14–0.17 % (natural acidity from proteins and phosphates); yoghurt is set at about 0.7–1.0 %. One degree Dornic is 0.1 g of lactic acid per litre, about 0.01 %, taking the sample density as 1. Titrate to the phenolphthalein end point.

Formula and method

$$TA = \frac{VN \times 0.09008}{m}, \quad {}^{\circ}D \approx 100\,TA(\%)$$

Variables

V	Titre of NaOH	m³
N	Normality of NaOH	-
m	Sample mass	kg
TA	Titratable acidity as lactic acid	-
${}^{\circ}D$	Degrees Dornic	-

Method and standards

Titratable acidity.

Assumptions and limits

- Lactic acid basis; density near 1.

References

Acid–base titration as lactic acid

Report details

Report reference	FCC-82HZ-40X3 (the same inputs always give the same reference)
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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/titratable-acidity-lactic

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.