



Application Note AN-T-132

Titratable acidity in milk and yogurt

Accurate determination according to DIN 10316, ISO/TS 11869, and IDF/RM 150

The titratable acidity gives an indication of the freshness of milk and yogurt as well as other fermented milk products. The determined titratable acidity in milk is mainly given through the absorption of hydroxyl ions by milk proteins and milk salts. The acidity increases with bacterial acidification and with enzymatic lipolysis.

The titratable acidity corresponds to the amount of sodium hydroxide required to titrate 100 g sample to a pH value of 8.30.

In this Application Note, an easy and accurate method to determine the titratable acidity in milk according to DIN 10316 and in yogurt according to ISO/TS 11869 and IDF/RM 150 is demonstrated.

SAMPLE AND SAMPLE PREPARATION

The method is demonstrated for UHT milk and natural yogurt. The samples are prepared

according to the standard.

EXPERIMENTAL

This analysis is performed on a 905 Titrande equipped with a magnetic stirrer and a Porotrode for pH measurement.

Prior to the analysis, the Porotrode must be calibrated in order to ensure accurate results.

A reasonable amount of milk or prepared yogurt sample is used for the titration. An endpoint titration is carried out with standardized sodium hydroxide to a pH value of 8.3.



Figure 1. 905 Titrande with tiamo. Example setup for the determination of the titratable acidity in dairy products.

RESULTS

The analysis demonstrates acceptable and reproducible results. The results are summarized

in **Table 1**. An example titration curve is displayed in **Figure 2**.

Table 1. Mean titratable acidity of a milk and a yogurt sample determined with a Titrande system (n = 5).

Sample	Mean titratable acidity	SD(rel) in %
Milk	144.40 mL c(NaOH) = 0.1 mol per L milk	0.28
Yogurt	12.87 mmol NaOH / 100 g	0.17

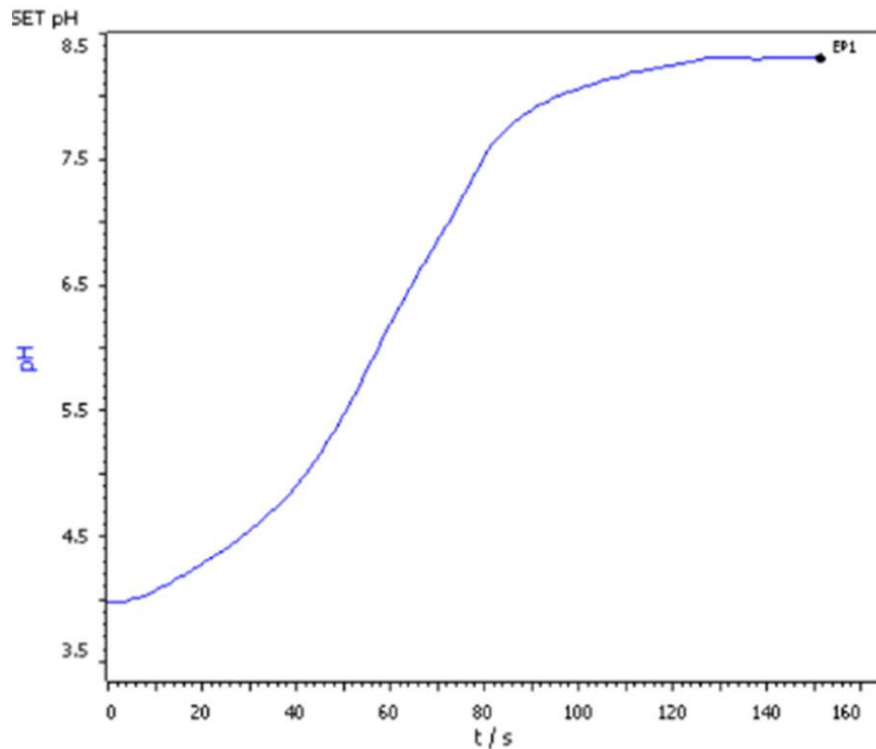


Figure 2. Example titration curve of the determination of titratable acidity in a dairy product.

CONCLUSION

After sample preparation, the determination of the titratable acidity can be performed reliably and cost-efficiently by using a Metrohm

autotitrator. Fast and precise determination according to **DIN 10316**, **ISO/TS 11869**, and **IDF/RM 150** is possible.

Internal reference: AW TI CH1-1156-042014

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CONFIGURATION



905 Titrando

用于使用 Dosino 加液系统一个量接口位分析滴定的
高端滴定。

- 多四套 800 Dosino 加液系
- 等当点滴定(DET)、等量等当点滴定(MET)和点
定滴定(SET)
- 使用子性量(MEAS CONC)
- 控的加液功能,LQH
- 用于外拌器或加液器系的四个 MSB 接口
- 智能“iTrode”
- USB 接口
- 使用 OMNIS-Software、*tiamo*-件或 Touch
Control
- 如果需要,足 GMP/GLP 和 FDA 要求,比如 21
CFR 第 11 部分



Porotrode

合 pH 用于 pH 量/滴定:

- 含蛋白的品(食物、生物品)
- 重染的品
- 粘性品

的毛管隔膜和参比液 Porolyt (6.2318.000) 可在含蛋
白的溶液中最佳性能。存放在保存液中。