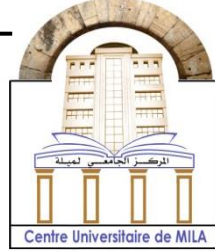


الجمهورية الجزائرية الديمقراطية الشعبية

People's Democratic Republic of Algeria

وزارة التعليم العالي و البحث العلمي

Ministry of Higher Education and Scientific Research



Abdelhafid BOUSSOUF University Centre - Mila

Institut des Sciences de la nature et de la Vie

Department of Biotechnology

Field: Natural and Life Sciences

Program: Biological and Agricultural Sciences

Specialization: Microbiology

Practice Rapport N:

Presented by:



Instructor

Date:

Introduction

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Theoretical Background

Mass-Based Alcohol Dilution Formula (Alcometry)

The mass of high-proof alcohol required for dilution is calculated using the following formula:

$$x = p \cdot [b / a]$$

- Where:
- (x): Mass of high-proof alcohol to be diluted
- (p): Mass of low-proof alcohol (diluent)
- (a): Mass fraction (weight percent) of the high-proof alcohol
- (b): Mass fraction (weight percent) of the low-proof alcohol
- (p - x): Mass of water to be added

Note: All alcometric operations are conducted on a mass basis. Therefore, volumetric alcohol concentration (volume percent) must be converted to mass fraction (weight percent) before use.

☞ Conversion from Volume Percent to Mass Fraction

To convert volumetric alcohol concentration to mass fraction, use:

$$\text{Mass fraction} = \text{Volume fraction} \cdot [D/d]$$

Where:

- **Volume fraction:** Alcohol concentration expressed as % v/v (volume/volume)
- **D:** Density of absolute ethanol (typically 0.79 g/mL)
- **d:** Density of the alcohol solution being used (varies with concentration)

Materials and Reagents

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Procedure

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Results

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