



EQUIPMENT REQUIRED TO SET UP SPECIFIED ANALYSIS

TITRATABLE ACIDITY

250 mL Erlenmeyer flasks
5 mL Volumetric A pipet
Titration assembly (buret set up)

0.1N Sodium Hydroxide
Phenolphthalein
Source for degassing (vacuum or hot water)

pH

pH meter with electrode and ATC probe
50 mL glass beakers
100 mL nalgene beakers
Optional: magnetic stirrer with stir bars.

Distilled water
pH 4.00 buffer
pH 7.00 buffer
pH 3.00 buffer

VOLATILE ACIDITY

Cash still assembly
Titration assembly (2 burettes)
250 mL Erlenmeyer flasks
10 mL Volumetric A pipet
5 mL Serological pipet
Pipet safety bulb

0.1 N Sodium hydroxide
Phenolphthalein
1+ 3 Sulfuric Acid
0.02 N Iodine
Starch indicator
Antifoam B

AERATION OXIDATION FREE SO₂

Aeration-oxidation assembly
20 mL Volumetric A pipet
10 mL Serological pipet
Pipet safety bulb
Titration assembly

3% Hydrogen peroxide
25% Phosphoric Acid
0.01 N Sodium hydroxide
SO₂ Indicator

RIPPER FREE & TOTAL SO₂

250 mL Erlenmeyer Flasks
25 mL Serological pipet
5 mL Repipettor (for Sulfuric Acid)
10 mL Serological pipet
Pipet safety bulb
Titration assembly
Optional: 10 mL Tilting pipette (for 1N NaOH)
250 mL red dispensing bottle (for Starch)

0.02 N Iodine
Starch indicator
1+3 Sulfuric Acid
1N Sodium hydroxide

ENZYMATIC ANALYSIS

Malic acid, Glucose-fructose, Ammonia

Spectrophotometer with UV capability
Cuvettes & Cuvette rack
10-100 uL Adjustable Eppendorf Pipettor with tips
100-1000 uL Adjustable Eppendorf Pipettor with tips

Volumetric glassware for dilutions
Appropriate test kits and standards

ALPHA AMINO NITROGEN

Spectrophotometer, UV 335 nm
Cuvettes & Cuvette rack
50 uL Pipettor with tips
10—100uL Adjustable pipettor with tips
Centrifuge & Centrifuge tubes
Scientific calculator or spreadsheet software like Excel
Reagent kit with standards:

10mM IsoLeucine Standard
5% OPA
NAC Buffer
Distilled water

MICROSCOPE—microscan, yeast viability

Microscope with phase contrast objectives
Slides
Cover slips
Pasteur pipets w bulb
Lens paper
Levy Counting chamber
Alcohol burner & wick

Methylene blue stain
Immersion oil
Reagent alcohol (for burner)
70% Isopropyl alcohol (sterility)