



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Raw Materials Pulp Chemicals Physical Chemical Testing Training

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 114258 · NQF Level 3 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to perform physical and chemical testing on raw materials, pulp, and chemicals used in the pulp and paper industry. It covers sampling, preparation, and analysis procedures to ensure product quality and compliance with industry standards. The training emphasizes safety protocols and accurate interpretation of test results.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	114258
Accreditation	SAQA Accredited · NQF Level 3 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply appropriate sampling techniques for raw materials, pulp, and chemicals to ensure representative samples.
- Demonstrate correct use of laboratory equipment and instruments for physical and chemical testing.
- Analyze test results to determine compliance with specified standards and specifications.
- Evaluate the quality of raw materials and pulp based on physical and chemical properties.
- Implement safety procedures and waste disposal methods in accordance with laboratory protocols.
- Document and report test results accurately for quality assurance purposes.

WHO SHOULD ATTEND

- Laboratory technicians, quality control personnel, and production staff involved in the testing and analysis of raw materials, pulp, and chemicals in the pulp and paper manufacturing sector.

COURSE OUTLINE

Day 1: Introduction to Raw Materials and Pulp Chemicals

- Overview of the pulp and paper industry
- Key raw materials: wood, recycled fiber, fillers
- Major pulp chemicals: caustic soda, sodium sulfide, chlorine dioxide
- Introduction to physical and chemical testing
- Laboratory safety and good laboratory practices

Day 2: Sampling and Sample Preparation

- Principles of representative sampling
- Sampling equipment and containers
- Sampling procedures for solid, liquid, and slurry materials
- Sample labeling and chain of custody
- Sample preparation: drying, grinding, sieving

Day 3: Physical Testing of Raw Materials

- Moisture content determination (oven drying, infrared)
- Bulk density measurement
- Particle size analysis (sieve analysis, laser diffraction)
- Fiber length and coarseness measurement
- Equipment calibration and verification

Day 4: Chemical Testing of Pulp Chemicals

- Acid-base titrations for caustic soda and acids
- Iodometric titration for chlorine dioxide
- pH and conductivity measurements
- Active alkali and sulfidity tests
- Interpretation of chemical test results

Day 5: Physical Testing of Pulp and Paper

- Pulp freeness (Canadian Standard Freeness)
- Pulp consistency measurement
- Fiber classification (Bauer-McNett)
- Paper tensile strength and stretch
- Paper tear resistance and burst strength

Day 6: Chemical Analysis of Pulp and Paper

- Kappa number determination
- Lignin content via Klason method
- Brightness and whiteness measurement (ISO)
- Ash content and acid-insoluble ash
- Extractives analysis (Soxhlet extraction)

Day 7: Quality Control and Data Interpretation

- Statistical process control basics
- Control charts for variables and attributes
- Process capability indices
- Root cause analysis for out-of-spec results

- Report writing and data presentation

Day 8: Advanced Testing Techniques and Troubleshooting

- Near-infrared spectroscopy for rapid analysis
- Automated titration and analysis systems
- Method validation: precision, accuracy, bias
- Inter-laboratory proficiency testing
- Troubleshooting equipment and test procedures

Day 9: Integration and Practical Application

- Case studies: testing in process optimization
- Mock audit of testing procedures
- Continuous improvement in testing lab
- Final assessment and feedback
- Course wrap-up and certification

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **12 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 33,300.00	R 33,300.00
1	In-House	R 43,300.00	R 43,300.00
1	On-Campus (Pretoria)	R 50,000.00	R 50,000.00

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	14 Aug 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	14 Aug 2026	On-Campus	Lagos, Nigeria
05 Aug 2026	17 Aug 2026	On-Campus	Johannesburg, South Africa
06 Aug 2026	18 Aug 2026	On-Campus	Mauritius
07 Aug 2026	19 Aug 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	20 Aug 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	21 Aug 2026	On-Campus	Abu Dhabi, UAE
12 Aug 2026	24 Aug 2026	On-Campus	Mauritius

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 114258) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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