



Accredited Africa Training Institute for Capacity Development

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

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COURSE BROCHURE

Petroleum And Chemical Storage Blending Distribution Technology Training

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 116040 · NQF Level 2 · 20 Credits · 17 Days

COURSE OVERVIEW

This course equips learners with the technical and managerial competencies required for the safe and efficient storage, blending, and distribution of petroleum and chemical products. It covers operational procedures, quality control, and regulatory compliance relevant to the South African petrochemical industry.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	116040
Accreditation	SAQA Accredited · NQF Level 2 · 20 Credits
Duration	17 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply principles of petroleum and chemical storage, including tank farm management and inventory control.
- Analyze blending processes to ensure product quality and consistency.
- Evaluate distribution logistics to optimize supply chain efficiency.
- Implement safety and environmental procedures in accordance with relevant legislation.
- Demonstrate understanding of regulatory requirements for handling hazardous materials.
- Design basic blending recipes and storage configurations for different product types.

WHO SHOULD ATTEND

- This course is designed for operators, supervisors, and managers working in petroleum and chemical storage, blending, or distribution facilities who seek to enhance their technical knowledge and operational skills.

COURSE OUTLINE

Day 1: Introduction to Petroleum and Chemical Storage, Blending, and Distribution

- Overview of petroleum and chemical products
- Industry value chain: storage, blending, distribution
- Key terminology and definitions
- Safety culture and regulatory framework (SANS, OSH Act)
- Environmental considerations
- Course structure and assessment criteria

Day 2: Properties of Petroleum and Chemical Products

- Hydrocarbon chemistry basics
- Key properties: density, viscosity, flash point, vapour pressure
- Product grades and specifications
- Sampling methods and quality control
- Testing equipment and interpretation of results
- Impact of properties on blending and storage

Day 3: Storage Tank Design and Construction

- Types of tanks: fixed roof, floating roof, spherical, refrigerated
- Materials: carbon steel, stainless steel, linings
- Tank design codes (API 650, API 620)
- Fittings: vents, gauges, mixers, fire protection
- Secondary containment and bund walls
- Corrosion protection and cathodic protection

Day 4: Tank Operations and Maintenance

- Receipt and dispatch procedures
- Tank gauging methods: manual, automatic, radar
- Inventory reconciliation and loss control
- Inspection schedules: API 653
- Cleaning and sludge management
- Common issues: leaks, corrosion, stratification

Day 5: Blending Principles and Equipment

- Blending objectives: octane, viscosity, volatility
- Batch vs. in-line blending
- Blending equipment: pumps, mixers, static mixers
- Flow meters, control valves, analysers
- Recipe management and blend optimisation
- Quality control during blending

Day 6: Blending Operations and Quality Control

- Start-up and shut-down procedures
- Online analysers: octane, Reid vapour pressure, density
- Blend ratio control and feedback loops
- Off-spec product handling
- Quality documentation and traceability

- Case study: gasoline blending

Day 7: Distribution Systems: Pipelines and Terminals

- Pipeline network design and hydraulics
- Terminal components: tanks, pumps, loading racks
- Batch transportation and interface management
- Pigging operations and maintenance
- Custody transfer meters: turbine, Coriolis, ultrasonic
- Meter proving and calibration

Day 8: Road, Rail, and Marine Distribution

- Road tanker loading: top loading, bottom loading, vapour recovery
- Railcar loading and unloading
- Marine vessel operations: ship-to-shore, barge loading
- Product segregation and line flushing
- Safety: grounding, overfill protection, PPE
- Documentation: bills of lading, manifests

Day 9: Storage and Handling of Hazardous Chemicals

- Hazard classification: flammable, toxic, corrosive
- Safety Data Sheets (SDS) interpretation
- Compatible storage groups
- Spill containment and clean-up procedures
- Emergency response plans
- Transportation of dangerous goods (SANS 10228)

Day 10: Environmental Management and Sustainability

- Environmental legislation in South Africa
- Air emissions: VOC control, vapour recovery units
- Wastewater treatment and oily water separation
- Solid waste management: sludges, filters
- Spill reporting and remediation
- Carbon footprint reduction strategies

Day 11: Instrumentation and Control Systems

- Level measurement: radar, ultrasonic, displacer
- Pressure and temperature transmitters
- Control valves and actuators
- SCADA and DCS overview
- Alarm management and shutdown systems
- Calibration and maintenance of instruments

Day 12: Fire Protection and Safety Systems

- Fire triangle and ignition sources
- Fixed foam systems and hydrants
- Deluge and sprinkler systems
- Gas detection: combustible, toxic, oxygen
- Emergency shutdown (ESD) systems
- Permit-to-work: hot work, confined space

Day 13: Risk Assessment and Management

- HIRA process and documentation
- HAZOP methodology and case study
- Layer of Protection Analysis (LOPA)
- Bow-tie diagrams
- Risk matrix and ALARP principle
- Management of change (MOC)

Day 14: Maintenance Strategies and Reliability

- Maintenance types and strategies
- RCM principles and implementation
- Corrosion monitoring: coupons, ultrasonic thickness
- Inspection planning (API 510, 570, 653)
- Shutdown planning and turnaround management
- Spare parts management

Day 15: Terminal Management and Operations

- Terminal layout optimisation
- Daily operations: scheduling, blending, loading
- Inventory management: stock reconciliation, ullage
- Loss control: measurement, evaporation, theft
- Regulatory compliance: licensing, reporting
- Key performance indicators (KPIs)

Day 16: Emergency Response and Incident Management

- Emergency response plan (ERP) elements
- Incident command system (ICS)
- Spill response: containment, recovery, disposal
- Fire fighting strategies for tank farms
- Tabletop exercise: simulated incident
- Incident investigation: root cause analysis, reporting

Day 17: Integration, Case Studies, and Assessment

- Group project: design a storage-blending-distribution facility
- Case studies: industry incidents and best practices
- Written assessment covering all modules
- Practical assessment: tank gauging, blend calculation, safety drill
- Course review and feedback
- Action plan for workplace implementation

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 **20 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 53,800.00	R 53,800.00
1	In-House	R 69,900.00	R 69,900.00
1	On-Campus (Pretoria)	R 80,700.00	R 80,700.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	01 Sep 2026	On-Campus	Durban, South Africa
10 Aug 2026	01 Sep 2026	On-Campus	Mauritius
11 Aug 2026	02 Sep 2026	On-Campus	Cape Town, South Africa
12 Aug 2026	03 Sep 2026	On-Campus	Dubai, UAE
13 Aug 2026	04 Sep 2026	On-Campus	Pretoria, South Africa
14 Aug 2026	07 Sep 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	08 Sep 2026	On-Campus	Shenzhen, China
18 Aug 2026	09 Sep 2026	On-Campus	Dubai, UAE

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 116040) 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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