



OIL, GAS AND PETROCHEMICALS TRAINING

Alkylation Unit Operations

5 day course

Classroom, online or in-house

Course overview

An alkylation unit turns light olefins and isobutane into a clean, high octane blendstock, but it does so with hydrofluoric or sulphuric acid, and loss of acid strength or containment is the central risk. It starts with the chemistry and why isobutane to olefin ratio, acid strength, temperature and mixing intensity govern alkylate octane and acid consumption. Sulphuric and hydrofluoric processes are then studied side by side: contactors and settlers, refrigeration and effluent cooling, acid runaway, deisobutaniser operation and acid regeneration. Feed contaminants such as water, butadiene and oxygenates are traced to their effect on acid usage and corrosion. HF release mitigation, protective equipment and the newer solid acid and ionic liquid catalysts complete the programme. Alky staff return able to run the unit for octane at lowest acid cost with acid hazards controlled.

What you will learn

- Explain alkylation chemistry and the side reactions that degrade alkylate quality
- Set isobutane to olefin ratio, temperature and mixing for best octane
- Monitor acid strength and prevent acid runaway
- Compare sulphuric and hydrofluoric acid processes and their equipment
- Trace feed contaminants to acid consumption and corrosion
- Operate deisobutaniser and product treating sections
- Apply hydrofluoric acid release mitigation and protective measures
- Evaluate solid acid and ionic liquid alternatives

Who should attend

- Alkylation unit operators and supervisors
- Process engineers on light ends upgrading
- Refinery safety and emergency response staff
- Corrosion and inspection engineers on acid service
- Planners managing gasoline octane and vapour pressure

Course outline

- 01 Alkylation chemistry
- 02 Process variables and alkylate quality
- 03 Sulphuric acid process
- 04 Hydrofluoric acid process
- 05 Feed contaminants and acid consumption
- 06 Fractionation and product treating
- 07 Acid hazards and release mitigation
- 08 New catalyst technologies

Upcoming dates



Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Lagos, Nigeria	Classroom	USD 1,325
14 to 18 December 2026	Harare, Zimbabwe	Classroom	USD 1,325
28 December 2026 to 1 January 2027	Online	Online	R8,500
25 to 29 January 2027	Accra, Ghana	Classroom	USD 1,325

Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriScience.co.za, or WhatsApp us on **+27 63 479 1136**.

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