



Halliburton Chemical Reaction Plant, Jubail, Saudi Arabia

## Contract and Wholesale Manufacturing

**IMPROVE SECURITY OF SUPPLY WITH  
CONCEPT TO FULL-SCALE COMMERCIAL  
PRODUCTION IN THE MIDDLE AND EAST  
AND NORTH AFRICA**



# Custom Manufacturing and Tolling of Specialty Chemicals

## Chemical Reaction Plants

Jubail, Saudi Arabia

Houston, U.S.A.

## CAPABILITIES

- » Stainless steel reactors (multiple sizes)
- » Glass-lined reactors (multiple sizes)
- » Blenders (multiple sizes)
- » Onsite pilot plants
- » R&D and QA/QC laboratories
- » Bulk storage, loading, and drumming
- » Flexible batch operations

The ability to develop ethylene and propylene oxide-based (EO/PO) product has extended Halliburton's reach beyond the energy markets we serve.

Today, Halliburton is one of the fastest growing custom manufacturers and tollers of specialty chemicals in the Middle East and North Africa (MENA) region and the U.S.

In addition to EO/PO-based chemistries, our contract manufacturing team can process a variety of custom flammable blends and develop and process sophisticated, multi-step reactions at our chemical reaction plants in Saudi Arabia and the U.S..

Our team offers concept to full-scale commercial production, intellectual property protection, production flexibility, development partnerships, product optimization and blending services among others to multiple industries.

## KEY SERVICES

- » Flammable blending and storage
- » Oxide chemistry manufacturer
- » Simple to complex reactions
- » Concept to commercial production
- » Production flexibility
- » Intellectual property protection
- » Land and sea shipping
- » Development partnerships





## ONSITE LABORATORIES

- » Research and development, and quality assurance and control
- » Wide array of laboratory-scale capabilities
- » Fully-staffed R&D team
- » Develop chemistries from concept to full-scale commercial production

## MULTI-STEP ALKOXYLATION

- » Fully automated, stainless-steel reactors
- » Ethylene oxide-based (EO) products
- » Propylene oxide-based (PO) products
- » Mixed oxides

## NOVEL CHEMISTRY

- » Alkoxylates
- » Demulsifiers
- » Surfactants
- » Scale inhibitors
- » Corrosion inhibitors
- » Hydrate inhibitors
- » Phosphate esters
- » Amides/imidazolines
- » Benzyl chloride quats
- » Phosphonates

## PILOT PLANTS

- » Bench-scale pilot capability and field pilot reactors (multiple sizes)
- » Examine all aspects before commercialization
- » Manage a broad set of chemistries







## EO/PO BENEFITS FOR CUSTOMERS

Halliburton's ability to develop ethylene and propylene oxide-based (EO/PO) products benefit our customers in the following ways:

- » Improved supply chain
- » Security of supply
- » Short lead times
- » Streamlined logistics
- » Multiple packaging options
- » Concept to commercial production
- » Local/regional value chain

## PROTECTING INTELLECTUAL PROPERTY

Halliburton offers confidentiality parameters for clients wanting their products to be developed through predetermined manufacturing and production instructions and specifications. This includes:

- » Segregating customer data/info from internal data
- » Separate raw material storage in warehouses
- » Stringent on-site visitor policies
- » Enforcement of Halliburton code of business conduct

## COMMITMENT TO LOCAL DEVELOPMENT

Investing in local industry has long been a focus for Halliburton. This includes:

- » Collaborating to scale up and commercialize technologies
- » Hiring and developing Nationals to be our employees and leaders
- » Partnering with local vendors to increase in-country capabilities, use local raw materials, and eliminate supply chain gaps



LEARN MORE



Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

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