

Contract and Wholesale Manufacturing

IMPROVE SECURITY OF SUPPLY WITH CONCEPT TO FULL SCALE COMMERCIAL PRODUCTION

Chemical Reaction Plants

Pasadena, Texas Jubail, Saudi Arabia

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

Custom Manufacturing and Tolling of Specialty Chemicals

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

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and

LEARN MORE



HALLIBURTON

halliburton.com/specialty-chemicals

the customer that is applicable to the sale.

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