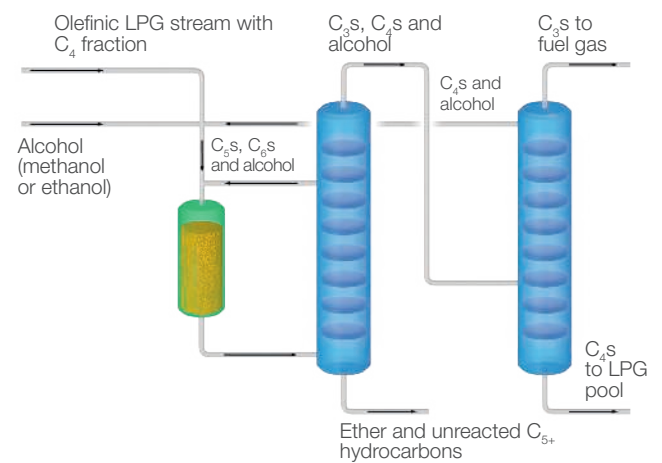


NEXETHERS™

Flexible MTBE and ETBE Production

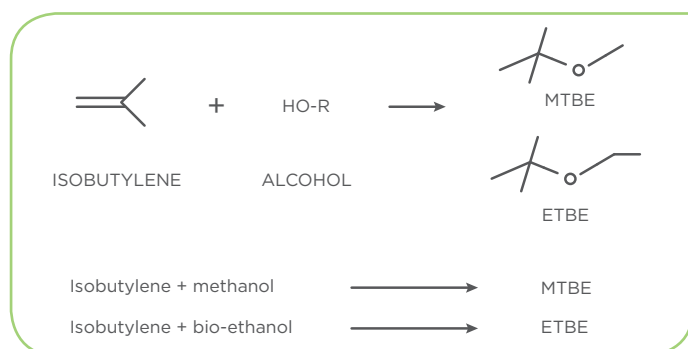


NEXETHERS™ concept for single ethers production

NEXETHERS™ for MTBE and ETBE production

High Conversion Clean Fuel Ether Production at Low Cost

All gasoline fuel producers face today the challenge of achieving current and future specifications with high availability at low cost. Need for economically sound and operationally reliable solution for processing olefinic C4 streams is more pronounced than ever. With effective process, fuel ethers will be the optimum blending components for gasoline pool – now and in the future.



catalyst. Reactor effluent is routed to the main fractionator which separates ether product from unreacted C4 hydrocarbons and lighter components. The remaining alcohol and light oxygenates (dimethyl ether and water) are included in the overhead product.

The second fractionating tower serves a dual purpose: its most important function is the near-total recovery of unreacted feed alcohol which is returned to the reactor section with the unreacted isobutylene to enhance the conversion of both components. Simultaneously, alcohol and all light oxygenates are removed from the C4 stream which is the bottom product of the distillation column. There is normally no need for a separate oxygenate removal unit to purify the resulting raffinate-2 stream. Because the overhead stream contains only an azeotropic amount of alcohol, an almost complete conversion of feed alcohol is obtained.

Process Solution

In the NEXETHERS single component process, iso-butylene present in olefinic LPG stream and alcohol react to form ether product in the presence of a commercial ion exchange resin

Benefits

Economical Benefits

- Extremely high MTBE and ETBE yields at low cost using low maintenance equipment.
- The ultimate integration of alcohol recovery and oxygenates removal – essentially total alcohol conversion.

Easy Operability

- Individually controlled reactor temperatures ensure high ether yield with minimal side product formation.
- Conventional catalyst available from several sources, needs no complex loading procedures.

Feed and Product Flexibility

- Complete freedom to choose between methanol and ethanol feed, or to convert to isooctene production.
- With bioethanol feed, the process provides a low-cost way to maximize biogasoline yield from isobutylene and olefinic feedstocks.

High Availability

- No need to shut-down the unit during catalyst change.
- Excellent availability and track record for easy operation.

Yields & Conversions

Design yields and conversions are subject to optimization. Typical values are:

MTBE	99%	ETBE	96 to 99+%
Methanol	99.5%	Ethanol	99.7%

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