For refineries that do not have a sufficient supply of isobutane for the alkylation unit, the necessary isobutane can be made by isomerizing n-butane. The operation of the Butamer Isomerization Unit is similar to the pentane isomerization unit.

In the isomerization process, the butane feed is mixed with the butane recycle and enters the deisobutanizer. Any propane present is sent overhead to be used as a fuel gas. Isobutane that is present in the feed and the recycle is withdrawn as a side draw to bypass the reactors.

The bottoms product of the deisobutanizer contains concentrated n-butane and is mixed with hydrogen and hydrochloric acid to promote catalyst activity. In the reactor, n-butane is converted to isobutene. After the butane passes through the reactor, it enters a separator to remove hydrogen from the butane. The reactor effluent is then recycled back to the feed of the unit, and the hydrogen is recycled to mix with the bottoms product stream of the deisobutanizer.

**Typical GC Measurements**
There is typically only one process gas chromatograph used in this unit:

1. **Reactor Effluent** – monitors the butane recycle for isobutane and n-butane in order to calculate the level of conversion.
## Butamer Unit

![Butamer Unit Diagram](image)

<table>
<thead>
<tr>
<th>Analyzer no.</th>
<th>Stream</th>
<th>Components measured</th>
<th>Measurement objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reactor Effluent</td>
<td>iC₄, nC₄</td>
<td>Control conversion rate in the reactor</td>
</tr>
</tbody>
</table>

**For more information, please contact:**

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