Halobutyl rubber is produced in a continuous process through reaction of regular butyl rubber with bromine or chlorine to form bromobutyl or chlorobutyl, respectively. Halogenation allows co-vulcanization and improved compatibility with other diene rubber types, in addition to improvements in the vulcanization rates, states of cure and reversion resistance. Many of the properties of halobutyl vulcanizates are virtually identical, regardless of the halogen employed. With bromobutyl rubber however, the brominated sites are more reactive, resulting in faster cure and better adhesion to unsaturated rubber types. When the compounds based on either brominated or chlorinated X_Butyl® are correctly formulated and processed, the end-products have:

- very low permeability to gases and liquids
- excellent resistance to weathering, ozone and heat
- good resistance to acidic and basic chemicals
- high hysteresis for energy absorption
- good low-temperature flexibility

### PRODUCT PORTFOLIO

<table>
<thead>
<tr>
<th></th>
<th>Mooney [ML(1+8 @ 125 °C), MU]</th>
<th>Halogen [wt%]</th>
<th>Ash [wt%]</th>
<th>Volatiles [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromobutyl Rubber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X_Butyl® BB 2030</td>
<td>32</td>
<td>1.8</td>
<td>&lt;0.7</td>
<td>&lt;0.7</td>
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<tr>
<td>X_Butyl® BB 2040</td>
<td>39</td>
<td>1.8</td>
<td>&lt;0.7</td>
<td>&lt;0.7</td>
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<tr>
<td>X_Butyl® BB X2</td>
<td>46</td>
<td>1.8</td>
<td>&lt;0.7</td>
<td>&lt;0.7</td>
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<tr>
<td>Chlorobutyl Rubber</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X_Butyl® CB 1240</td>
<td>38</td>
<td>1.25</td>
<td>&lt;0.5</td>
<td>&lt;0.5</td>
</tr>
</tbody>
</table>

### APPLICATIONS

The versatility of halobutyl rubber has led to its use in a diverse range of tire and non-tire applications including:

- tire innerliner
- pharmaceutical stoppers
- hoses
- protective clothing
- tank linings
- high traction footwear
- adhesives
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