# Thermo Scientific™ Nalgene™ Labware Chemical Resistance Reference Guide

## Nalgene Plastic Labware Chemical Resistance Reference Guide

<table>
<thead>
<tr>
<th>Substance</th>
<th>Resistance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>10% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>15% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>20% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>30% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>40% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>50% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>60% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>70% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>80% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>90% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>95% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
<tr>
<td>100% Hydrochloric Acid</td>
<td>Excellent</td>
<td>For use up to 25°C (77°F) with agitation. Above 25°C (77°F), use only with proper Personal Protective Equipment (PPE) and sufficient ventilation.</td>
</tr>
</tbody>
</table>

**Chemical Resistance Key**

- **Excellent**: Good resistance to chemicals. Ideal for most applications.
- **Good**: Moderate resistance to chemicals. Suitable for applications requiring moderate chemical resistance.
- **Moderate**: Limited resistance to chemicals. Not recommended for applications requiring high chemical resistance.
- **Caution**: Chemical resistance may be substantially reduced under certain conditions. Use with caution.
- **Not tested**: Chemical resistance has not been tested. Use with caution.

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**Chemical Resistance**

- **E**: Excellent resistance to chemicals. Suitable for most applications.
- **G**: Good resistance to chemicals. Suitable for applications requiring moderate chemical resistance.
- **M**: Moderate resistance to chemicals. Not recommended for applications requiring high chemical resistance.
- **C**: Caution: Chemical resistance may be substantially reduced under certain conditions. Use with caution.
- **N**: Not tested: Chemical resistance has not been tested. Use with caution.

**Interpretation of Chemical Resistance**

The chemical resistance data is a general guide and part of a Thermo Scientific product. It is based on factors such as chemical resistance of the given product, chemical resistance data, and your own conditions. This chart is not a substitute for use with Nalgene products. For specific applications, contact Nalgene Technical Support at 800-625-4327 or 585-586-8800.

**Effects of Chemicals on Labware**

Chemicals can affect the strength, surface appearance, color, dimensions, or weight of plastic. The basis of interaction which can cause changes are:

1. Chemical attack on the polymer chain, leading to chemical breakdown and degradation.
2. Physical attack, leading to chemical breakdown and degradation.
3. Plasticizers and chemicals which cause plastic to lose flexibility and eventually weaken.
4. Chemicals that cause the plastic to become brittle.
5. Chemicals that cause the plastic to discolor or change color.
6. Chemicals that cause the plastic to be attacked by aggressive chemicals.

**Mixing and/or Dilution of Certain Chemicals**

The combination of different chemicals or components of two or more chemicals or liquids can cause a reaction, which can result in damage to the plastic. The product may become brittle, weaken, or disintegrate.

**Caution:** To avoid chemical resistance issues, always chemically test the plastic before use. Chemical resistance may be reduced under certain conditions.

**Physical Properties**

- **Density**: 1.18 g/cm³
- **Volume**: 0.19 L
- **Melt Flow Index**: 0.7 g/10 min
- **Color**: Transparent
- **Weight**: 0.02 kg
- **Dimensions**: 118 mm x 118 mm x 118 mm
- **Thickness**: 3 mm

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