Nouryon is a leading producer of fatty amine based products. Triameen Y12D-30 represents a highly effective biocidal amine with broad spectrum microbiological properties. It is an aqueous dilution containing about 30% of N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (as “diamine”, CAS 2372-82-9 in the review program of the Biocidal Product Regulation for disinfectant product types 2, 3, 4). It does not have an ionic charge like the quaternary ammonium compounds.

Nouryon also produces a wide array of chelating agents. Chelating agents are known to boost the efficacy of biocidal formulations by extracting metal ions from cell membranes of microorganisms and so making them more vulnerable for biocidal attack. One of the best chelates to use for this purpose is GLDA (CAS 51981-21-6), a chelating agent with superior environmental and (eco)toxicological properties and sold under the name Dissolvine® GL-47-S.

This guideline formulation combines the outstanding properties of both products:
10% Triameen Y12D-30
8% Dissolvine® GL-47-S
82% water

All data refer to this formulation.

**EN 13697**
(Surface test for bactericidal efficacy)
Test strains: Escherichia coli,
Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa;
Clean conditions: 0.3 g/l Albumin;
Test passed at 1.5% (= 1: 67 dilution)
Clean conditions 8.5 g/l Skim milk for Pseudomonas aeruginosa:
Test passed at 2.0% (= 1:50 dilution)

**EN 1276**
(Suspension test for bactericidal efficacy)
Test strains: Escherichia coli,
Staphylococcus aureus, Enterococcus hirae, Pseudomonas aeruginosa;
Clean conditions (0.3 g/l Albumin):
Test passed at 0.4% (= 1.250 dilution)

**EN 1650**
(Suspension test for yeasticidal efficacy)
Test strain: Candida albicans;
Clean conditions (0.3 g/l Albumin):
Test passed at 0.3% (= 1.33 dilution)

Specifically suitable for disinfection of food contact surfaces
- usual concentrations are safe regarding indirect food contact
- on the “French positive list”
- no MRL (Maximum Residue Limit)

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### Phys-Chem Properties

<table>
<thead>
<tr>
<th></th>
<th>As such</th>
<th>1:50 dilution*</th>
<th>1:75 dilution*</th>
<th>1:200 dilution*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance at 20°C</td>
<td>clear liquid</td>
<td>clear liquid</td>
<td>clear liquid</td>
<td>clear liquid</td>
</tr>
<tr>
<td>Cloud point</td>
<td>55°C</td>
<td>&gt;75°C</td>
<td>&gt;75°C</td>
<td>&gt;75°C</td>
</tr>
<tr>
<td>Density</td>
<td>1.02 g/cm</td>
<td>1.00 g/cm</td>
<td>1.00 g/cm</td>
<td>1.00 g/cm</td>
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<tr>
<td>pH</td>
<td>12.0</td>
<td>10.1</td>
<td>9.9</td>
<td>9.4</td>
</tr>
<tr>
<td>Foam height**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>immediately</td>
<td>157 mm</td>
<td>140 mm</td>
<td>128 mm</td>
<td></td>
</tr>
<tr>
<td>after 1 min</td>
<td>152 mm</td>
<td>138 mm</td>
<td>125 mm</td>
<td></td>
</tr>
<tr>
<td>after 5 min</td>
<td>145 mm</td>
<td>136 mm</td>
<td>121 mm</td>
<td></td>
</tr>
<tr>
<td>Surface Tension (Du Noüy)</td>
<td>31.0 mN/m</td>
<td>30.5 mN/m</td>
<td>30.6 mN/m</td>
<td>30.2 mN/m</td>
</tr>
<tr>
<td>CMC</td>
<td>17 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Dilution is done in water 17° German Hardness (17dGH) = 300 mg/l as CaCO3
** Foam height was measured in Vindan at 20°C
About Nouryon
We are a global specialty chemicals leader. Markets worldwide rely on our essential chemistry in the manufacture of everyday products such as paper, plastics, building materials, food, pharmaceuticals, and personal care items. Building on our nearly 400-year history, the dedication of our 10,000 employees, and our shared commitment to business growth, strong financial performance, safety, sustainability, and innovation, we have established a world-class business and built strong partnerships with our customers. We operate in over 80 countries around the world and our portfolio of industry-leading brands includes Eka, Dissolvine, Trigonox, and Berol.

For more information visit surfacechemistry.nouryon.com