Imidazolines for Industrial Applications

Effective October 2020

Colonial Chemical
**Cola®Zoline** imidazolines are classified as neutral agents that can easily be converted to cationic agents. Cola®Zolines and their acid salts offer the following functional properties: wetting, emulsification, detergency, thickening, moisture displacement, corrosion inhibition, film formation, and antistatic effects.

**Chemical Properties**

Cola®Zolines are readily soluble in polar solvents and in hydrocarbons while relatively insoluble in water. The acid salts of Cola®Zolines with low molecular weight acids (acetic, hydrochloric, or phosphoric acid) are water-soluble. Oil soluble salts can be formed by neutralization with long chain organic acids.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Fatty Acid Source</th>
<th>Amine Type</th>
<th>Min. % Imidazoline</th>
<th>Min. % Active</th>
<th>Amine Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cola®Zoline C</td>
<td>Coconut</td>
<td>AEEA</td>
<td>90.0</td>
<td>&gt; 98.0</td>
<td>200.0 – 240.0</td>
</tr>
<tr>
<td>Cola®Zoline T</td>
<td>Tall Oil</td>
<td>AEEA</td>
<td>87.0</td>
<td>&gt; 98.0</td>
<td>160.0 – 175.0</td>
</tr>
<tr>
<td>Cola®Zoline LM</td>
<td>Lauric/Myristic</td>
<td>AEEA</td>
<td>90.0</td>
<td>&gt; 98.0</td>
<td>203.0 – 240.0</td>
</tr>
<tr>
<td>Cola®Zoline O</td>
<td>Oleic</td>
<td>AEEA</td>
<td>90.0</td>
<td>&gt; 98.0</td>
<td>163.0 - 173.0</td>
</tr>
<tr>
<td>Cola®Zoline TD</td>
<td>Tall Oil</td>
<td>DETA</td>
<td>72.0</td>
<td>&gt; 98.0</td>
<td>170.0 - 210.0</td>
</tr>
</tbody>
</table>

![Imidazoline Structure](image)

**APPLICATIONS**

**Corrosion Inhibition**

Cola®Zoline products improve water repellency, prohibit corrosion, and reduce static. Cola®Zoline T, TD, and O will provide the best hydrophobic barriers and corrosion inhibition while Cola®Zoline C and LM will add lubricity and reduce static charge to surfaces.

**Cationic Surfactants**

Cola®Zoline products will make cationic surfactants, once neutralized with acids or quaternized with methyl chloride, di-methyl or ethyl sulfate.

**Car Washing**

Drying agents and spray waxes commonly include imidazoline-based emulsifiers, which emulsify mineral seal oils or wax additives and form a water-repelling film to drive water off vehicle surfaces and render shine and protection.

**Acid Cleaners**

Cola®Zoline products can be used in cleaning and brightening metals in acid cleaners and protect metal surfaces from corrosion. Imidazolines will clean the metal and deposit a corrosion resistant film. Other applications for imidazolines include acid-based lavatory and dairy cleaners.

**Dispersing Aids**

Cola®Zoline imidazolines are used to disperse carbon black in pigment applications and in fiberglass manufacturing and processing.

**Textile Applications**

Cola®Zoline products are used in fabric softening, lubricating, cleaning, adhesion improvement, and dye fastness.

**Lubricant Emulsions**

Cola®Zoline O, T and TD and their salts can be used in industrial lubricants and corrosion inhibitors.

**Bituminous Coupling Agents and Emulsifiers**

Cola®Zoline O, T and TD are effective emulsifiers in bitumen emulsions.

**Antistatic Agents**

Cola®Zoline O, T and TD can be used for static reduction of metal, glass and plastic surfaces.

**Oil and Grease Thickeners**

Cola®Zoline products can be used to treat bentonite and improve its thickening performance in oils and greases.

**Paint and Coating Applications**

Cola®Zoline products can also improve substrate adhesion and waterproofing.

**Mining Applications**

As flotation collectors, Cola®Zoline products improve yield of separation in mining of minerals and precious metals.