Promulgen™ D
Nonionic Emulsifier

Chemical Name/FDA IID*: Cetearyl Alcohol and Ceteareth-20.

Product Description: Promulgen™ D nonionic emulsifier is an ethoxylated cetearyl alcohol compounded with cetearyl alcohol. It is 100% active, and is supplied as a waxy solid.

Typical Properties: Physical properties are listed below and indicate typical values and properties; they are not intended to be used as product specifications.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance at 25°C</td>
<td>White waxy flakes</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Acid Value, mg/g</td>
<td>0.8</td>
</tr>
<tr>
<td>Melt Range, Class I, °C</td>
<td>47-55</td>
</tr>
<tr>
<td>Moisture, % wt.</td>
<td>&lt;0.5</td>
</tr>
<tr>
<td>Saponification Value, mg/g</td>
<td>1.5</td>
</tr>
<tr>
<td>Hydroxyl Value, mg/g</td>
<td>170</td>
</tr>
<tr>
<td>Ash, % wt.</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Iodine Value</td>
<td>1.5</td>
</tr>
<tr>
<td>Cetyl Alcohol, % wt.</td>
<td>&gt;19</td>
</tr>
<tr>
<td>Stearyl Alcohol, % wt.</td>
<td>&gt;44.5</td>
</tr>
</tbody>
</table>

Features and Benefits:
• Efficient oil in water emulsifier
• Broad pH compatibility
• Contributes to viscosity of final formulations

Suggestions for Use:
Promulgen™ D nonionic emulsifier is derived from a vegetable based alcohol. Its nonionic nature allows flexibility in formulation and provides compatibility over a wide pH range.

Cetearyl alcohol and ceteareth-20, nonionic emulsifier is used for external application in a wide range of prescription (Rx) and over the counter (OTC) products including emulsion, creams, suspensions, aerosols and foams.

Some of the active pharmaceutical ingredients (API) that have been formulated with cetearyl alcohol and ceteareth-20 are: Nystatin, efornithine hydrochloride, halcinonide, triamcinolone acetonide, hydroquinone, spinosad, sodium sulfacetamide, urea, benzoyl peroxide, clotrimazole, betamethasone dipropionate halcinonide and clotrimazole.
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Cetearyl alcohol and ceteareth-20 have been listed in FDA Inactive Ingredient Database (IID) for topical products up to 8% maximum potency.
Recommended use levels range from 0.5% to 5.0%, depending on the application.

Storage and Handling:
Promulgen™ D nonionic emulsifier is packed in 25-kg boxes. Material should be stored in closed containers and protected from extreme temperatures (store below 40 °C).