Marcus NAT Wax for Water Based Emulsions

Eazy to Emulsify Naturally Derived Waxes

Marcus NAT 155 and NAT 180 can be easily converted into anionic, non ionic or cationic emulsions.

Due to the high degree of functionality these waxes readily saponify and make stable emulsions through either direct emulsification or homogenization.

Because these polymers are derived from natural oils, they are good candidates for food based applications such as fruit coatings (consult specific FDA regulation for limitations).

Marcus NAT waxes have good barrier properties yet will saponify under alkaline conditions to allow for easy dispersion.

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**Marcus NAT 155 and NAT 180 - Typical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>NAT 155</th>
<th>NAT 180</th>
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</thead>
<tbody>
<tr>
<td>Color (Lovebond)</td>
<td>1.5</td>
<td>4 Max</td>
</tr>
<tr>
<td>Iodine Value (cg/g)</td>
<td>5</td>
<td>5 Max</td>
</tr>
<tr>
<td>Acid Value (mg/g)</td>
<td>1</td>
<td>1 Max</td>
</tr>
<tr>
<td>Saponification (mg/g)</td>
<td>180</td>
<td>185-195</td>
</tr>
<tr>
<td>Melt Point (° F)</td>
<td>155-160</td>
<td>180-185</td>
</tr>
<tr>
<td>Hardness (dmm)</td>
<td>2</td>
<td>2</td>
</tr>
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</table>

Marcus NAT waxes are a new generation of naturally derived waxes that make ideal substitutes in many applications for petroleum, synthetic and other more expensive natural waxes.

Emulsification procedures are available for converting Marcus NAT waxes into high solids, stable anionic, non ionic and cationic emulsions –contact Marcus Oil & Chemical.

Unlike most traditional waxes, Marcus NAT waxes can be saponified to varying degrees allowing for both emulsification and subsequent dissolution under alkaline conditions.

Applications for Marcus NAT wax emulsions include:

**PAPER COATINGS**
When Marcus NAT wax emulsions are applied in coating applications, inks and other coating material are easily removed during re-pulping under mild alkaline conditions The newprint is easier to de-ink and the addition of other de-inking surfactant can be greatly reduced.

Additional benefits include reduced clean-up time and reduced surfactant needed for de-inking.

**FRUIT COATINGS**
Marcus NAT wax has good barrier properties to reduce transpiration and their natural origin makes them appealing for use on fruit.

**TEXTILE EMULSIONS**
Use in softener package or in sizing where ease of removal is desirable.

Other applications for Marcus NAT waxes include:

**POLISH**
**ADHESIVE APPLICATION**
**BOARD EMULSIONS**
**INKS AND COATINGS**

1. Patents Pending—The manufacture and use of hydrogenated vegetable wax emulsions is covered by pending US and International Patents

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