

## Marcus NAT 180 Vegetable Derived Wax

**Marcus NAT 180** wax is a natural wax derived by utilizing a special hydrogenation process of select oil fractions. This process produces a very hard, high melting and light colored wax that is suitable for use in applications where a food grade wax is desirable.

Applications for Marcus NAT 180 wax include replacement of other more expensive waxes such as carnauba and Candelilla waxes.

Marcus NAT 180 wax can be readily emulsified into a stable anionic, cationic or nonionic emulsions<sup>1</sup>. The emulsion can be used in a diverse range of ink and polish and coating applications such as fruit coating, boxboard and pill coatings. The wax has good moisture barrier properties and in the case of boxboard coating, can be readily dispersed in traditional repulping applications where Marcus NAT 180 will readily disperse and aid in deinking and repulping of paper and paperboard.

The table below indicated the functionality of Marcus NAT 180 that is unique and may require compatibility testing when substituting for other types of naturally derived waxes. Marcus NAT 180 has been shown to be compatible with relatively polar high EVA resins in adhesive applications and should be compatible with a variety of polar ingredients used in cosmetic applications.

### Typical properties of Marcus NAT 180 wax

Wax	Nat 180	Carnauba
<b>Property</b>		
Hardness @ 25 C (77F)		2 dmm
Melt Point	83C (182F)	84 C (183 F)
Viscosity		360 (nn2/s) @ 98.9C (210 F)
Acid number	1.0	8
Saponification number	190	80
Functionality	Triglyceride (esters) and long chain fatty esters	Mostly aliphatic and aromatic esters of long chain alcohols and acids

### Packaging and Product Form

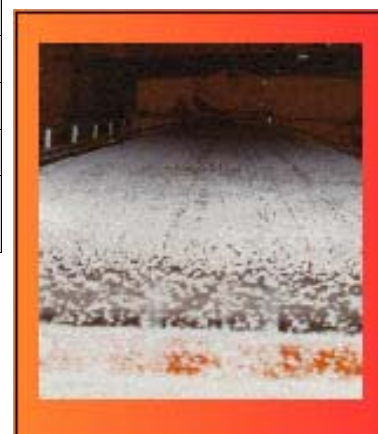
Marcus NAT 180 wax is available as white pastilles (approx. 3-6mm dia) and as a fine powder.

Standard packaging for Marcus NAT 180 wax is in 50 lb (22.7 kg) plastic lined kraft bags with 45 bags to the pallet (2250 lbs).

### Safety

Please consult the Material Safety Data Sheet for specific information on the safe handling of Marcus Polyethylene waxes.

1. Patents Pending



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