

# CHEMICAL MARKET REPORTER

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## Marcus Oil & Chemical Corners Vegetable Oil Waxes

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### Oils, Fats & Waxes

THE MARKET FOR vegetable oil waxes is poised to expand with their development as cost-effective alternatives to petroleum waxes. In an early sign of potential growth opportunities, Marcus Oil & Chemical, a division of Houston, Tex.-based HRD Corp., recently received a patent for the use of vegetable oil waxes made from soybeans, and has several patents pending for a wide range of applications in adhesives, emulsions, inks and dry wall.

The company says it has always been on the lookout for alternative resources, as petroleum wax prices continue to climb and supplies remain under pressure. US petroleum wax consumption is said to be over 2 billion pounds per year and imports continue to rise as production of refined petroleum wax in the US dwindles.

“Our involvement in waxes has given us a good understanding of the market dynamics,” says HRD chairman Abbas Hassan. “We saw a declining supply of petroleum waxes and began researching vegetable waxes that might provide alternatives. Our efforts have shown promising results in several large application areas for which we have filed for intellectual property rights both in the US and abroad.”

Interest in vegetable oil waxes is growing due to the relative abundance of soybean and other vegetable oils. In addition, excess hydrogenation capacity in the industry could lead to vegetable oil wax’s cost-competitive advantage over petroleum wax, says Mr. Hassan. Another bonus is the wax’s environmental friendliness.

“There is a lot of interest in green products in countries like Germany, where environment regulations are quite strong,” says Mr. Hassan. “We discovered that vegetable oil waxes can actually enhance the recycling process, unlike petroleum waxes, which are a problem to recycle. The use of chemicals to help recycle paper may even be reduced with these waxes,” he adds.

In the area of adhesives, Marcus Oil found that vegetable oil waxes can be used with existing polar tackifiers and resins, enabling formulators to develop a broad range of adhesive compounds. Vegetable oil wax also carries the benefit of being repulpable.

“This can have a tremendous advantage to repulping operations that usually have to use expensive techniques to separate out the ‘stickies and tackies’ that result from repulping conventional adhesives,” says Mr. Hassan. “We believe this represents the first available technology that allows for formulating high-quality, repulpable hot-melt adhesives that are cost-competitive with conventional and hard-to-recycle hot-melt adhesives.”

The company sees good potential as well in paper coatings, polish and flexographic inks in the area of water-based wax emulsions. In fruit-coating, where emulsions are used to extend shelf life and reduce moisture-loss for a wide variety of produce, the food-grade status of the wax is said to be a distinct advantage.

Drywall or gypsum board is another area where Marcus Oil has filed for patents. Petroleum and other waxes have traditionally been used in a water-based form to manufacture moisture-resistant drywall. Vegetable oil waxes, when powdered, were tested and found to be an effective substitute wax in gypsum formulation.

The ease of powdering vegetable oil waxes also led Marcus Oil to a patent-pending application involving ink formulations. Mr. Hassan says the cost of grinding vegetable oil wax is much lower than that of grinding conventional petroleum waxes when incorporating it into ink formulations.

Marcus Oil says several adhesives and major paper companies have already expressed interest in the products. Marcus Oil is in the process of completing its intellectual property actions and plans to aggressively market vegetable oil waxes for these as well as other applications.

“We haven’t done any commercial trials yet with these new materials, and so we are now looking for the right partners to do this step,” says Greg Borsinger, consultant for Marcus Oil.

“Prices for vegetable oil wax is currently at a premium over petroleum wax, but if we can get one or two big applications to drive up volume, we envision prices coming down to be competitive with where high-grade petroleum waxes are today,” he adds.

Several vegetable oil wax suppliers say they expect double-digit growth for the market within the next several years as investments in research and development continue within the vegetable oil refining industry, associations and individual companies.

In the US, agribusinesses such as Cargill, Archer Daniels Midland and Bunge are already major participants in the industry. Cargill currently markets vegetable oil wax under its Nature Wax product line, mostly for candle applications. CMR

