

Cera Rica Noda. Enlisting the lessons of nature for the benefit of humankind and the natural world.



Insect pests. Don't exterminate them. Harness their strengths and learn to coexist.

Scale insects are most intensely despised of all insects because their bodies exude a white wax that protects them from the deadly effects of pesticides. At Cera Rica Noda, we took notice of the valuable properties inherent in this white Cera Rica as an industrial material and now are in the process of commercializing several products that utilize it, including toner for office copiers and cassette ink-ribbons for word-processor printers. Backed by development financing from the Japan International Cooperation Agency (JICA), we have already entered research and trials in collaboration with the Chinese Academy of Forestry, and are moving ahead with plans for extensive tree-planting projects and the construction of refining plants in agriculturally unsuited mountainous sites in China's Yunnan and Sichuan Provinces.

A total of 100,000 Japanese wax trees already planted and growing in China.

The berries of the Japanese wax tree (*Rhus succedanea*), that is endemic to Japan, are a source of a quality vegetable wax, which has long been used in medicines and cosmetics. Working together with the Chinese State Forestry Administration, etc., in 1993 Cera Rica Noda planted 100,000 wax trees in Fujian Province. Those trees have grown well, and it should be possible to begin harvesting their berries for wax extraction in volume by the year 2000. The Cera Rica obtained from this source will be refined at a facility in Beijing and exported to Japan and other markets worldwide.

Humankind has been using one source of Cera Rica since 4200 BC

Collected from the wax honeybees secrete for building beehives, beeswax has been serving humankind for more than 6000 years. In ancient Egypt, it found use as a preparation for the preservation of mummies, and as a material for the wax boards onto which hieroglyphics were etched. In the same way, Cera Rica Noda has learned many things from the plant and insect kingdom and reaped innumerable benefits in turn.

From protection to communication.

Many insects secrete Cera Rica to protect their exoskeletons and regulate the evaporation of bodily moisture. The Cera Rica covering their bodies is also said to play an intermediary role in the mutual communicative behavior they engage in with their antennae. Furthermore, Cera Rica helps many waterfowl maintain the water-repellent properties of their feathers, and enables fish to adjust their buoyancy and store oxygen for respiration.

Environmental control and energy.

In much the same fashion, many plants cover the surfaces of their leaves, stems, seeds, and fruit with a thin film of Cera Rica to protect themselves from insects, disease, and dehydration, and to function as one mechanism of environmental control. No less importantly, the Cera Rica in many plant seeds becomes a vital source of food energy once those seeds germinate.

Safe and environmentally sound.

The Cera Rica that many plants and insects secrete for their own good is in reality far more delicate, exquisite, powerful, refined, and energy-rich than any artificial wax humankind is capable of synthesizing. It is safe and healthy for all life forms, including humans. It is also biodegradable and thus environmentally friendly.

A remarkable material with a part in the technological forefront of modern industry.

Cera Rica boasts astonishingly broad applications and functions. It has found use in today's leading-edge data-storage industry, and is also used as a material in the manufacture of microcapsules, pharmaceuticals, cosmetics, and packaging. What is more, its range of application can be expected to steadily widen in tandem with coming technological innovations and humanity's growing awareness of the importance of the global environment and health.

Key sources of Cera Rica and their uses



Japan wax

The Japanese wax tree has been cultivated in Japan over the past 1300 years as a source of vegetable wax. The Cera Rica obtained from this endemic source has accordingly earned the name "Japan Wax." It has a fine, adhesive texture and rubs into the skin well. Owing largely to these features, it is now widely used in the manufacture of various cosmetics, drugs, foods, writing instruments, and textiles.



China vegetable wax

China vegetable wax or tallow is a vegetable-based Cera Rica produced in China. Extracted from various berries including those of the Sumac tree and then refined, it has been approved by Japan's Ministry of Health and Welfare as a natural food additive. In terms of composition, it is similar to the extract from the Japanese wax tree. Furthermore, many fields now utilize it in similar ways to take advantage of its lubricant, water-repellent, and releasing qualities, gloss, viscosity, and consistency.



Rice bran wax

The Cera Rica extracted from rice bran is high in octacosanol, a substance known to influence the aging process. Rice bran wax bears a degree of hardness commensurate with its melting point and is easily refined and purified. It is used in information processing equipment as a data-storage material, and is also an ingredient in many cosmetics, foods, and paints.



Carnauba wax

A vegetable Cera Rica obtained from a species of palm that grows in northeastern Brazil. The leaves of this palm contain a wax that prevents against dehydration in arid zones. In terms of its gloss, tenacity, hardness, and microcrystalline structure, Carnauba wax is a Cera Rica of the highest quality. It, too, is used in recording media and as a material in various pharmaceuticals, cosmetics, foods, and paint products.



Candelilla wax

Another vegetable Cera Rica derived from candelilla, a sturdy shrub that lives in arid zones in Mexico's northern highlands. To survive harsh environmental conditions with annual temperature variations as broad as 60 degrees Centigrade, candelilla coats its stalks with a film of a Cera Rica. Candililla wax is glossy, water-repellent, and an excellent electrical insulator. As such, it is employed as a material for recording media and as an ingredient in foods, cosmetics, and brightening agents.



Beeswax

Beeswax is a refined insect-based Cera Rica product extracted from the raw wax of beehives. It is smooth-textured, water- and moisture-repellent, provides waterproofing qualities, and demonstrates emulsifying properties. Beeswax is widely used in many industrial fields: for the manufacture of safe and healthy cosmetic products and pharmaceuticals, as a ceramic binder, in precision die-casting applications, and as a material for recording media.

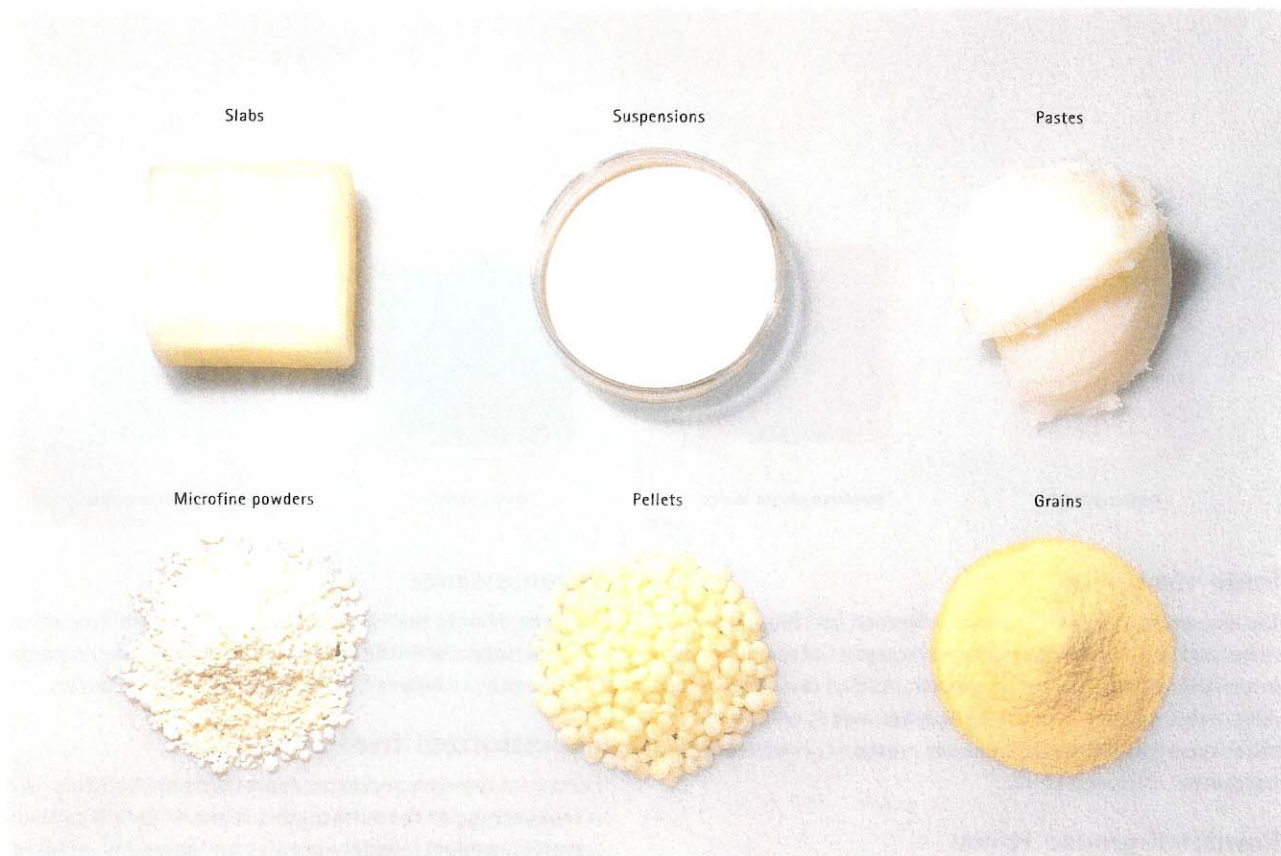


Snow White Wax

This is an insect-derived Cera Rica refined from the snow-white, needle-crystal-structured wax that scale insects secrete onto the stems of certain plants. It is glossy in appearance, has a high melting point, and is stable in terms of its physical chemistry. Snow White Wax is utilized as a moisture repellent, a lubricant, and a glazing agent in several fields, including the machine tool, electrical engineering, and pharmaceutical industries.

Cera Rica Noda Products

Cera Rica Noda manufactures its products in a variety of forms suited to the varying needs of its customers.



Flakes

Flakes are about 5-10 mm square and 1 mm thick. This is the most common form for hard Cera Ricas with high melting points. Flake products are easy to handle and easier to transport than Cera Ricas in slab form.

Pellets

About 15-20 mm in diameter and 3-5 mm thick, our pellet products are easy to measure out and are typically used for applications in which the Cera Rica must dissolve rapidly. This is the most common form for Cera Ricas with a relatively low melting point.

Grains

Our grain-form products consist of grains about 1 mm in diameter. They are easy to measure out and also dissolve easily. Grains are more uniform in size, and are better suited than flakes for the production of consistent mixtures or pastes.

Slabs

We use enamel vats to shape our slab Cera Rica products, which measure 15cm by 15cm by 3.5cm. This form is suitable for Cera Ricas that are to be used as food mold-releasing agents. Slabs are placed in an automatic filler machine, which spreads the Cera Rica into the food molds on a continuous basis.

Pastes

A Cera Rica Noda original, our paste products have added oil to improve their spreading properties. They can be more evenly

applied to processing machinery, and, as such, have proved effective in boosting the productivity of confectionery operations.

Powders

Our powders are below 26-mesh (about 600 microns in diameter), meaning they are finer than most anything offered by our rivals. They are generally blended with other powders for the production of mixtures or pastes.

Microfine powders

Consisting of particles about 5 microns in diameter, our microfine powder products are another Cera Rica Noda original and even finer than our regular powders. They too are used primarily for producing pastes with other powdered materials, and are also well-suited for direct-coating applications and the production of blends without heating.

Alcohol suspensions

These are suspensions of Cera Rica particles in alcohol. In fields ranging from food processing to high-tech industrial pursuits, these products have found use as fast-drying brighteners, with particle sizes suited to the utilization of automated spray-deposition equipment.

Water suspensions

These are suspensions of sub-micron Cera Rica particles in water. They are used as water-based ink additives and as preservative coatings to lock in the freshness of food products that are sensitive to alcohol.