

TOPICS

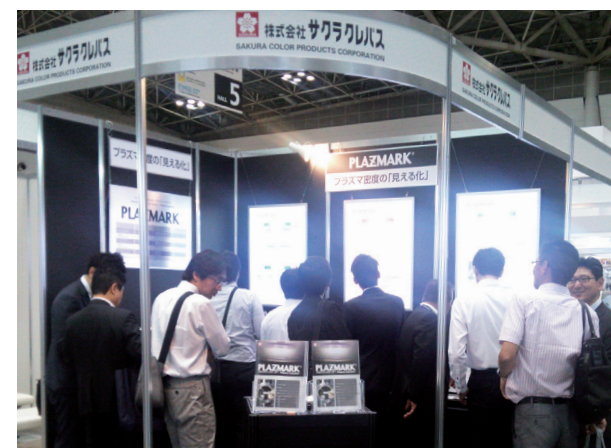


Being involved in the “soft” realm of education and culture in addition to the “hard” realm of classic and new products

SAKURA COLOR PRODUCTS CORPORATION manufactures and sells products in a wide range of fields including Cray-pas, the first Japanese drawing material; Coupy Pencil, whole colored plastic pencil; WaterColor paints; writing materials for general use; office supplies; and products for medical and industrial use. Its businesses also include Educe, a mail-order business selling teaching materials, stationery, art supplies, daily goods, and other products for educational and childcare facilities; Corusupport, in which art education specialists are dispatched to educational and childcare facilities; and Hoiku Studio, a website that offers childcare ideas and content to teachers at kindergartens and childcare facilities who struggle with the content of daily childcare. In the culture field, it operates Sakura Art Salon art lessons, and Sakura Art Museum, its corporate art museum. In these and other ways, SAKURA is involved in the “soft” realm of education and culture in addition to the “hard” realm.

Lively exhibitions of PLAZMARK and other evaluation tools putting color material technologies to practical use

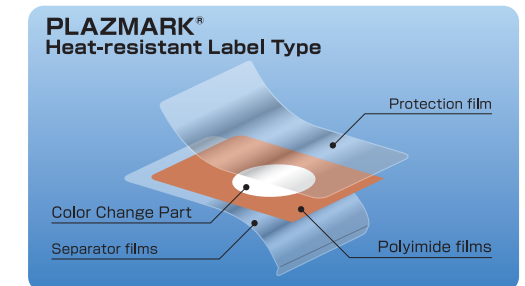
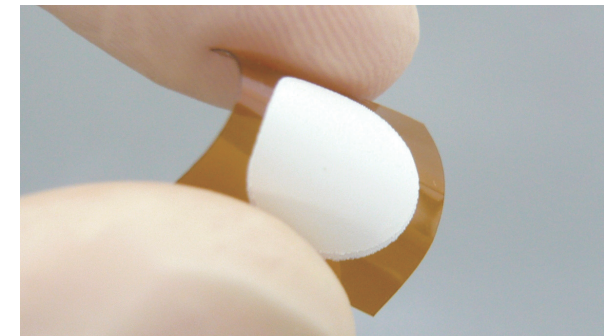
SAKURA COLOR PRODUCTS CORPORATION exhibited at NEPCON JAPAN 2015 (the 16th IC Packaging Technology Expo) in January 2015 and JPCA Show 2015 (the 45th Japan Electronics Packaging and Circuits Association Exhibition) in June. Centered on displays and demonstrations of PLAZMARK, a plasma indicator that fulfills onsite needs to visualize plasma processing intensity, SAKURA exhibited chemical indicators for sterilization, an ozone gas indicator, UV indicator, thermochromism color material, and other products. At JPCA Show 2015, SAKURA exhibited samples of the Card type for atmospheric plasma treatment, which enables the confirmation of plasma distribution. This product changes color even with atmospheric-pressure plasma (which is generally difficult for indicators to detect) and is currently under development. At the event, a lively seminar was held at no cost entitled, “Visualizing Plasma Processing Effects With PLAZMARK.” SAKURA is currently engaging in active business developments, such as directly visiting the corporations that showed interest in this product.



FACT SHEET

PLAZMARK Heat-resistant Labels visualize plasma processing intensity

These stickers show the effects of plasma processing and can be used in high-temperature and clean processes up to 200°C.



This type has a flexibility and a adhesion, as a result, you can evaluate easily plasma processing status.

Technology overview

These stickers are used in the semiconductor manufacturing process and feature heat resistance that has been increased to 200°C. Plasma processing intensity can be evaluated simply by placing the stickers in a plasma chamber. PLAZMARK comes in the form of a flexible label, so it can be affixed to substrate surfaces or chamber interiors to easily visualize the current state of plasma processing. This enables process improvements and quality management. Inorganic color materials and a polyimide substrate are used to enhance heat resistance, and the gas emitted by PLAZMARK has also been restrained. It is also adapted to high-temperature processes in front-end processes for which cleanliness is required. In addition, now plasma can also be visualized for various types of process gas. Special equipment such as spectrometers and probes has traditionally been used in plasma evaluation for semiconductor manufacturing processes. Because PLAZMARK gradually changes color according to plasma intensity, the changes in color tone make it possible to instantly judge and quantify processing results. Distribution can also be understood using multiple stickers.

Feature 1

This product improves the heat resistance of traditional indicators made from organic color materials from 60°C to 200°C. In Thermal Desorption Spectroscopy (TDS) measuring of gas released by the indicator, with high temperatures up to 300°C, vacuum degree deterioration has been reduced from 1×10⁻⁵Pa or less to around 1×10⁻⁴Pa, even after heating. In this way, a clean environment is maintained. This product can be used in high-temperature processes or semiconductor manufacturing processes that require cleanliness.

Feature 2

This product has a structure with an adhesive layer that can be affixed easily to the location where one wants to measure. It is flexible so it can be affixed to curved surfaces such as chamber inner walls. It allows the user to immediately determine processing results after plasma processing according to color, which reduces work time. The measuring time is one tenth compared to contact angle measurement. In membrane evaluation, which requires time, this product enables the immediate judgment of heterogeneous factors, reduces mass production line waiting time while waiting for evaluations, and improves the equipment operation rate. The machine difference for equipment of the same type can also be determined in a short period of time. The color changes can be easily quantified to view correlations with other measuring results.

Development background

SAKURA COLOR PRODUCTS CORPORATION is a comprehensive stationery manufacturer that was founded in 1921. Its products include Cray-Pas, Coupy Pencil, and writing materials for general use. It has applied the color material technologies cultivated since the company's founding to develop products including chemical indicators, in which color is used to evaluate the sterilization status of medical instruments. SAKURA recently developed a tool that is simply placed inside a device to evaluate plasma intensity. This product can be widely used in electronics manufacturing fields including semiconductors.

Uniqueness

This evaluation tool (indicator) uses color to visualize plasma intensity inside a device; the user merely has to place the indicator inside the device before plasma processing. It allows the evaluation of process variation and in-plane distribution easily and at a low price, by which it helps improve productivity and yield. In addition to the Card-type STANDARD and Heat-resistant Label types that are currently on sale, SAKURA is also developing the more advanced Card type for atmospheric plasma treatment and Clean Wafer Type, which reduces emitted gas as much as possible.

The outlook for the future

SAKURA will utilize the color material technologies ever cultivated in the electronics manufacturing field, aiming for adoptions in a broader range of fields including LEDs and other electronic devices as well as the automobile, aerospace, and medical equipment industries. In the future it will continue working to develop technologies for new areas.

Company history

1921	Foundation of the company in Koishikawa, Tokyo and began manufacturing and selling Sakura Crayons.	2000	Won the Japanese Patent Office Governor Prize, a national invention award, for a Gel ink for Ballsign (a patented invention). The Ballsign Tiara was chosen as Stationery of the Year at the International Stationery & Office Products Fair (ISOT) 2000.
1925	Invented Cray-Pas and registered the trademark for Cray-Pas. (Trademark registration no. 0167993)		Developed a dye ink that washes out in the laundry and released Washable Indian Ink.
1973	Released Coupy Pencil whole colored plastic pencils.	2002	Began educe, a mail-order business supporting educational institutions. Established Shanghai Sakura International Trading Co., Ltd., a sales company, in Shanghai.
1975	Developed a chemical indicator for sterilization.	2006	Began the Corusupport art teacher dispatch business.
1982	Developed and released Pigma, the world's first sign pen by pigment ink. Released Outline Markers, which became hugely popular. Began the Sakura Art Salon art lesson business. Developed TC Color, a thermo chromism material.	2014	Developed and released PLAZMARK plasma indicators.
1984	Developed and released Ballsign, the world's first water-based gel ink pen.	2015	Began the Hoiku Studio business to provide practical childcare content via the Internet to kindergarten teachers and childcare workers.
1991	Acquired Royal Talens BV, a world-famous Dutch art material company, becoming the world's top maker of art materials. Founded Talens Japan, a company that handles professional art materials. The Osaka Head Office was rebuilt to commemorate the company's 70th anniversary. SAKURA also opened the Sakura Art Museum and started the first annual All Japan Amateur Art Grand Prize Contest (currently the All Japan ArtSalon Art Prize).		

Company Profile - Key information (as of August 2015)

Location: 1-6-20 Morinomiya Chuo, Chuo-ku, Osaka-shi 540-8508
 URL: <http://www.craypas.com>
 TEL: +81-6-6910-8800
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 Number of employees: 1,200 (group total)
 Capital: 90 million yen
 Established: 1921
 Representative: President Hikoshiro Nishimura

Inquiries regarding PLAZMARK

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 Location: 7-18-47 Kano, Higashiosaka-shi, Osaka 578-0901
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Business areas

Manufacturing and sale of stationery, office supplies, art materials, and other products. Mail-order sales for educational facilities. Operation of art lessons and the corporate museum. New businesses, including PLAZMARK, that apply color material technologies.