

Eco-friendly Products

Aiming at 100% replacement of our products with those that are environmentally friendly by fiscal 2010, Nippon Paint is working hard to develop environmentally conscious products and technologies.

SURFCOAT® CM1706 Chrome-free Pretreatment for Metals

Chromium(VI) or phosphate pretreatments for metals are widely used for preventing corrosion and surface pretreatment. To comply with the EU's ELV (End of Life Vehicle), WEEE (Waste Electrical and Electronic Equipment) and RoHS (Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) directives, however, regulations regarding Chromium(VI) are also being considered in Japan.

To keep up with this trend, Nippon Paint introduced SURFCOAT CM1706 chrome-free pretreatment for multi-metal applications. Unlike traditional chrome-free surface treatments, SURFCOAT CM1706 can be applied to a variety of metals, including cold rolled steel, aluminum alloy and galvanized steel.

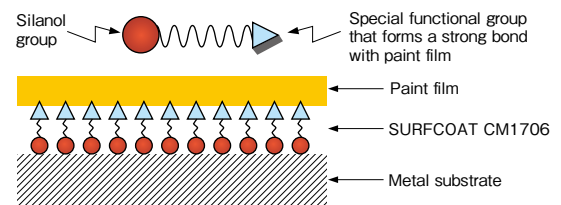
SURFCOAT CM1706 is a coating-type pretreatment consisting of silane compounds, and features strong anti-corrosion properties and good paint adhesion. This product has a sufficient level of performance to replace conventional Chromium(VI) surface treatments, and is

free from fluorine or heavy metals often contained in surface treatment agents.

Also, this agent does not belong to the categories of hazardous or poisonous materials, making handling easier with a relatively low risk.

SURFCOAT CM1706 has already been employed for manufacturing lines at more than ten companies at home and abroad, with highly satisfactory results. We will continue improving the product to enable its use on an even greater variety of metal substrates.

►SURFCOAT CM1706 Paint Adhesion Mechanism Model



O-DE NO TACK Water-based Interior Paint Resistant to Skin Oils

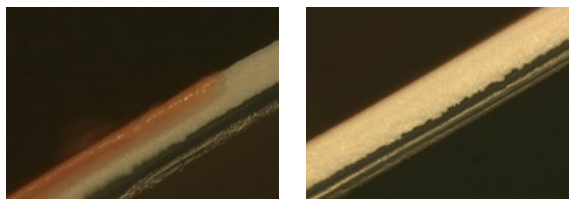
In response to growing concerns about the “sick house” syndrome, water-based paints are increasingly used for coating interior steel structures in Japan.

While water-based paints are useful for alleviating this syndrome, the softening of paint film caused by contact and permeation of natural skin oils has become an increasingly prominent problem with water-based paints, although the same problem occurred with traditional solvent-based paints.

Nippon Paint solved this problem by incorporating a special monomer in an emulsion resin to form a paint film that resists skin oil penetration. This resulted in the development of O-DE NO TACK, which enjoys a great deal of popularity in the marketplace.

●O-DE NO TACK Features

- (1) Highly resistant to dirt and peeling caused by skin oils
- (2) Relatively lower tack—the lowest level among water-based paints (Nippon Paint survey)
- (3) Water-based paint free from hazardous heavy metals (with a formaldehyde emission grade of F☆☆☆☆)
- (4) Refined paint texture suitable for interior coating
- (5) Built-in anti-fungal and anti-algae properties; optional antibacterial properties can also be added
- (6) Totally water-based coating for interior steel surfaces possible through combination with water-based primer (HI-PON PRIMER WB)

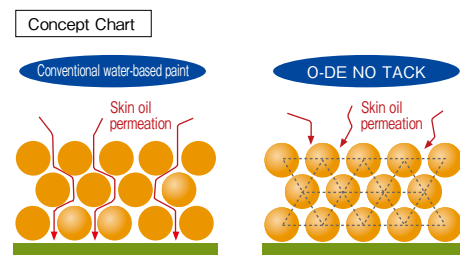


►Skin Oil Permeation Test Results (photomicrographs of paint film cross-sections)

Left: Conventional Nippon Paint water-based paint

Right: O-DE NO TACK

* Artificial skin oil (colored in red) was dripped on dry paint films and the degree of oil permeation was checked after four hours.



NIPPE CRYSTACOAT Ultralow Dirt Pickup Overcoat

NIPPE CRYSTACOAT is an inorganic overcoat agent specially designed for ultralow dirt pickup by drawing on Nippon Paint's original inorganic technology. By lining and fixing inorganic molecules containing hydrophilic groups on the coating film surface, a high hydrophilic property was incorporated into the product. Because molecules bond with the coating film in brush form, it is free from crack-caused changes in appearance or degradation of hydrophilic properties, unless the undercoat film itself deteriorates. This makes an initial attractive appearance last for a long period of time.

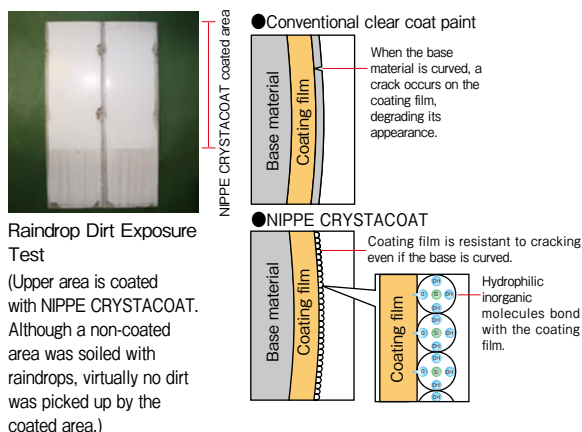
Unlike conventional technologies that cause the hydrophilic properties to gradually develop through light and rain after painting, the NIPPE CRYSTACOAT is completely hydrophilic when delivered, thus exhibiting sufficient hydrophilic properties right after painting. Thanks to this, the product is highly resistant to dirt pickup immediately after painting. An exposure test and test painting on a structure subjected to heavy soilage near a national road for a period of more than four years showed that the coated area was virtually free from dirt pickup initially and over time.

Also, the inorganic overcoat film produced with our patented technology is not as hard as glass, so it can adapt to expansions and contractions of the base. This makes it possible to add ultralow dirt pickup qualities to elastic paints as well. NIPPE CRYSTACOAT can be

used for both water- and solvent-based paints, making it suitable for a wide range of applications.

This product is currently available in trade-use paint markets, mainly for lengthening the repainting intervals of high-rise buildings, condominiums and symbolic architectures.

Going forward, we will strive to adopt our patented technology to add hydrophilic properties not only for trade-use paints but also for other paint and coating products that require ultralow dirt pickup properties.



COLUMN

POWERFLOAT cationic electrodeposition paint and ATTSU-9 solar reflective coating included in the industrial energy-saving equipment database

The database of whereabouts information on industrial energy-saving equipment, managed by the Energy Conservation Center, Japan (ECCJ), has recently included Nippon Paint's eco-friendly products. The ECCJ is an organization under the control of the Ministry of Economy, Trade and Industry's Agency for Natural Resources and Energy.

This database was set up to enable access to information from a wide range of sources when deploying energy-saving equipment and devices.

Information on two Nippon Paint products can be retrieved from the database: POWERFLOAT cationic electrodeposition paint, which contributes to reducing CO₂ emissions and waste (featured in our 2007 CSR Report); and ATTSU-9 solar reflective coating (featured in this report). If a keyword search is conducted by inputting "Nippon Paint," the brand names of

these registered products are displayed. Once these names are clicked, the browser will jump to the "Nippe Show-Biz" industrial coating site, in which detailed product information can be accessed.

Registration in this database gave us an increased opportunity to inform more customers of our products that are useful for energy conservation. It is our hope that more customers will be able to appreciate the benefits of these products for reducing environmental impact through actual use.

Database of whereabouts information on industrial energy-saving equipment
<http://eccj06.eccj.or.jp/equip/index.php> (in Japanese only)

