

T.A.O. NEWSLETTER

Quarterly Company Newsletter



ECO Friendly

Green Ink Cup



UR4 Cleaning agent



How Pad Printing can be green: Green Ink cup and Cleaner?

T.A.O. Bangkok Corporation Limited is a provider of products and solutions for Industrial Printing and Decoration. We have created this newsletter to deliver information and news about our products and services. For our first issue we will be focusing on a topic that we are very committed to, which is the concept that Industrial Printing can be an Eco-friendly process whereby industry and the environment can co-exist harmoniously together. We will be introducing green environmentally products and processes which can help conserve the Earth's resources.

The highlight article is "How Pad Printing can be green and environmentally friendly". Focusing on the Green Ink Cup and Green Cleaner which are the latest Technological advancements in Pad Printing which also allows our environmental footprint to tread lighter on the Earth's resources.

The Special column "TAO Inside" we will be giving information on ways that we implement "Environmental Management" in our organization at the same time creating customer confidence in our products as well as running operations that are beneficial to our society and the Environment.

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Advantages of Green Ink cup [inner cup for pad printing]



Able to keep health, powerful work force



Environmentally friendly



No hazardous chemical evaporation



Save time



Save Solvent



Low-cost effectiveness

Advantages of UR4 Cleaner



Not health hazard



Not environment hazard



Not harmful the kidneys



"Solvent Naphtha" free

TAO Newsletter: Product, solutions and services provide for our value customers

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Please advise for content topic or any comment, contact us ;

GET IN TOUCH WITH US

Like other form of printing, pad printing utilizes ink, solvents, films and various kinds of chemicals. Some of these chemicals will be disposed to the water, soil and air, which eventually will pollute the environment. For pad printing, there's an alternative that can reduce the use of solvents and chemicals with "Green Pad Printing System".

Green Pad Printing system is an innovative pad printing process which employs a number of novel green features each resulting from new technology and engineering advancements.

The result is an efficient and environmentally friendly pad printing process. KENT has been awarded winning in "Green Pad Printing System" and we are delighted to raise one of the elements of green pad printing that KENT is working on - Green Cup - the new sealed ink cup system that is able to reduce consumption of ink and cleaning solvent of as much as 90%.

Advantages of Green Ink cup

- Kent's patented ink cups with long life rings bring numerous production and handling advantages.
- Improvement on productivity, low-cost effectiveness and anti-pollution
- No ink cleaning [save solvent/time]
- No extra cleaning labors
- No enormous drainage of cleaning chemical solvent and no hazardous chemical evaporation
- No unexpected medical claim expenditure
- Able to keep health, powerful work force

The other green alternative apart from Green Ink cup, that we would like to endorse is "UR4 Cleaner". The cleaning agent for screen and pad printing that respond to environmental demands on chemical products. UR4 Cleaner is free from "Solvent Naphtha", which can affect you when breathed in and by passing through your skin. Long term exposure can cause drying and cracking of the skin and repeated exposure may damage the nervous system and may affect the kidneys.

Apart from that, UR4 Cleaner has no "N", known as "Dead fish" symbol that concern the toxicity for aquatic life.

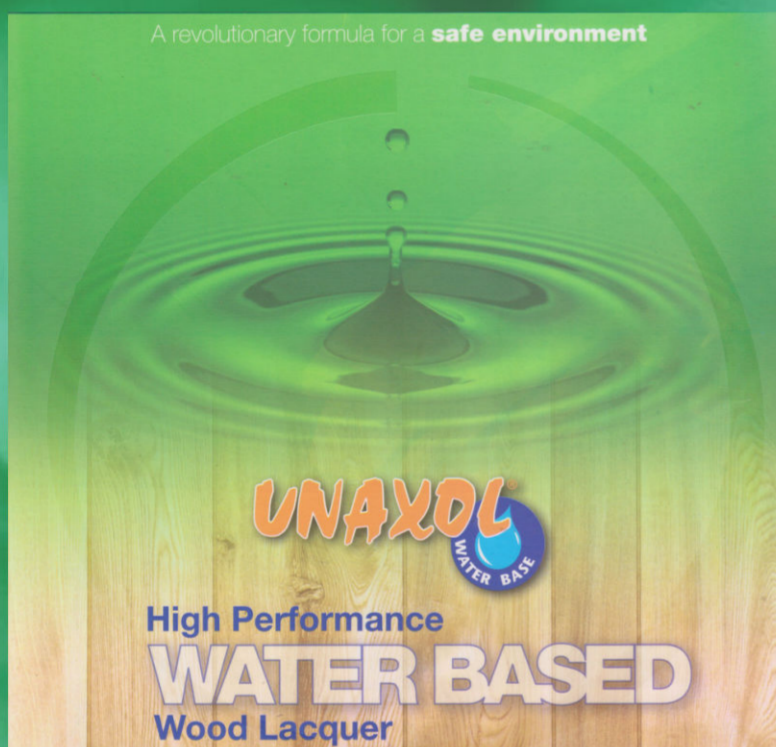
T.A.O. Bangkok has made UR4 Cleaner in Thailand, under the license of Marabu GmbH & Co. KG, Germany. The product is in compliance with RoHS Directive 2011/65/EU [Annex II].



Unaxol is the solution to eco-friendly wood coatings



Unaxol Eco-friendly wood coatings



The UNAXOL is formulated to be environmentally friendly, health of conscious and free from conventional toxins like heavy metals, azo, aromatic solvents, formaldehyde, isocyanate and polyvinyl chloride. The UNAXOL provides lower odor comparing to the conventional solvent-based paints and environmentally harmless. The total volatile organic content [TVOC] of the UNAXOL is in compliance with environmental regulations. Hence UNAXOL is suitable to be applied to public areas [hospitals, hotels, office and restaurants, etc.] plus the renovating areas, toys, children rooms and any wooden product that highly required low odor and toxicity of the wet paint.

Unlike traditional water-based systems, the UNAXOL consists of modified polysiloxane resin that impacts the excellent of

- Superior hardness, as good as the premium polyurethane
- Excellent water resistance
- Leveling and gloss to the resultant dry film
- The UNAXOL matches solvent-based lacquers in terms of drying/curing
- Dry films of the UNAXOL can resist boiling water for prolonged period of exposure without blushing
- The UNAXOL can overcome the problem of grain raising that is typical of water-based coating on wooden substrates

The UNAXOL, the high-performance water-based wood lacquer is your better choice of wood coating solution, Conscious of health, environmentally friendly, superior-performance and easy to use.

Remark : Distributed in Thailand only

United Paint & Chemical, a leader in water-based wood lacquer proudly presents **UNAXOL**, a breakthrough in coating technology, which exceeds conventional solvent based paints in terms of performance as well as being environmentally friendly.

Unlike traditional water based systems, **UNAXOL** consists of modified polysiloxane resin which has

- Superior Hardness (as good as premium polyurethane).
- Maximum water resistance
- Excellent leveling & gloss when dried
- Matches solvent based lacquers in terms of drying/curing.
- Products coated with UNAXOL can resist boiling water for prolonged periods of exposure without blushing.
- No grain raising, which is a common problem with water based wood coatings.

Use **UNAXOL** sanding sealer as the prime coat to smoothen and prevent grain raising at the surface of the wood.

Finish off with a choice of two **UNAXOL** topcoats, gloss or satin. **UNAXOL** topcoats provide surfaces which are extremely smooth and crystal clear whether applied by brush, spray or roller.



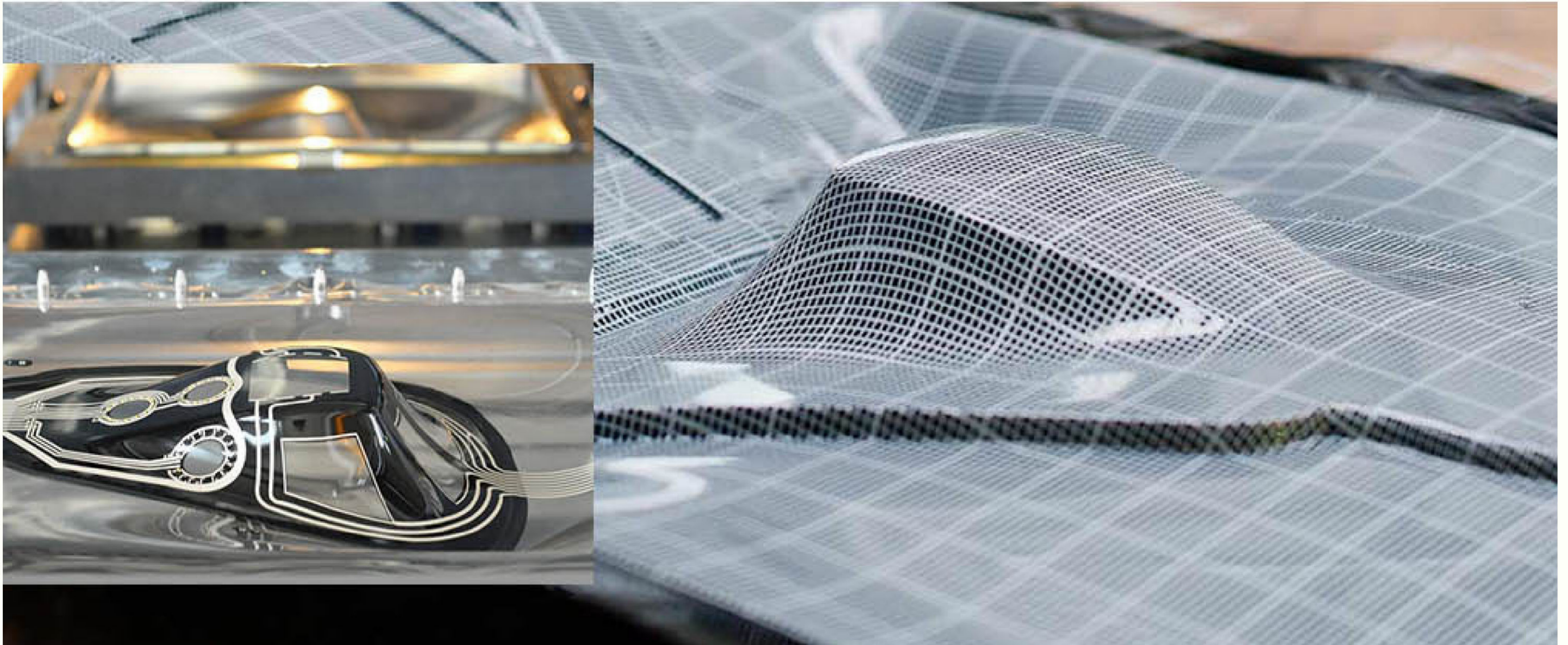
Marabu Tampa® Tex TPX Pad Printing Inks for Sensitive Applications.

Toys, baby products and medical accessories are examples of items with heightened product safety needs. It is vital to ensure the substrate itself and the printing inks are free from Substances that could be harmful.

Tampa® Tex TPX was originally designed for textile printing, and is also well up at the front at a great number of further substrates. A main application is printing onto baby bottles, drinking cups, soothers, and teething rings.

Tampa® Tex TPX is 2-component pad printing ink for a large number of substrates. Especially polypropylene and Tritan™ are substrates which are used for baby bottles and soothers. There are very strict guidelines for these applications: Ingredients such as hazardous heavy metals, PAH, phthalates, and BPA, to name only the most important, are an absolute exclusion criterion.

Renowned European manufacturers of baby products use Marabu inks for these sensitive applications. Tampatex TPX is successfully tested for toys, baby products and medical accessories and compliant with health and safety standards, e.g. EN 71 part 3 for Toy Safety Standard].



IMD/IML: Environmentally Alternative

IMD and IML have become one of the main methods for plastic decoration in the world, in place of traditional methods such as painting, silk-screen printing and pad printing. IMD and IML is now widely known as the only method which can meet designers' high-level demands for beauty.

In mold decorating of durable products provides environmentally alternative to painting and chrome plating. Regulation regarding VOCs [volatile organic compounds] from various manufacturing finishing processes are heavily regulated, which has many manufacturers looking for better materials, methods and processes by which to manufacture their products.



One alternative for decorating plastic products that is becoming more in demand is in-mold decorating that includes a variety of methods including film insert molding [FIM] as a way to avoid painting parts, and in-mold labeling of chrome like parts as an alternative to chrome plating, which means that it contains no hexavalent and trivalent and is highly durable.

With the commitment to respond the customers' requirements in various industries, we select the high-quality products, fulfilled IMD/IML decoration process as the followings.

- PROELL IMD/FIM Screen Printing inks from Germany
- FRINTRUP Stencil from Germany
- COVESTRO Polycarbonate Films from Germany
- THIEME Screen Printing Machine from Germany and MINO Screen Printing Machine from Japan
- NATGRAPH Drying & Curing Systems from United Kingdom
- NIEBLING High Pressure Forming Machine from Germany



Energy Saving for Glass with Screen printing Inks

Glass is formed by melting a mixture of minerals and various compounds, and then cooling down without crystallization. Glass can be classified into many types, depending on the ingredients and the different properties.

The traditionally popular technique is the kiln-fired ceramic on the surface and being cured at temperature up to 600 degree Celsius, so that the colors permanently printed on the surface, but it comes with heavy metals, which are not safe for the users.

The glass decoration technique that is energy saving and reduces the curing/drying time is to do screen printing. This technique is more environmentally friendly and safer in terms of the energy and the safety for the production staff and users by applying MARABU Ultra Glass UVGL, Mara Glass MGL, Tampa Glass TPGL. All these products are compliance with heavy metal limit value required by packaging directive 94/62/EC. It is fast curing, scratch and chemical resistances.

Advantages compared to ceramic inks

- Significant energy savings
- Free from high-risk heavy metals
- High chemical resistance
- No color shift during the curing process
- Noticeably high production speeds
- No degradation of the glass' physical properties

MARABU Ultra Glass UVGL

- UV-curable screen-printing ink for flat glass used indoors, packaging and restaurant glass.
- A fast curing UV Ink
- A post curing will be achieved its final adhesion and resistances after 24 hours at room temperature.

MARABU Mara Glass MGL

- Screen printing ink for glass, ceramics, metals aluminum.
- High gloss, high brilliance, silicone free and fast curing
- Final hardness can be achieved at 140 degree Celsius for 30 minutes.

MARABU Tampa Glass TPGL

- Pad Printing ink for glass, ceramics, metal, aluminum, and thermosetting plastics
- Gloss, high opacity and fast curing
- Final hardness can be achieved at 140 degree Celsius for 30 minutes.



Remark: Ceramic ink requires the extreme temperatures to get a good adhesion and needs to start firing before use in order to keep high temperature that the inks will be readily melted and fused to the ceramic surface.

T.A.O. INSIDE

Environmental Management in the organization



T.A.O. Bangkok has been awarded the certificate and the trophy for Good practice of waste utilization management according to 3Rs Practice, which consist of:

- Reduce [reduce and stop using unnecessary things]
- Reuse [reuse until running out]
- Recycle [reuse] according to the waste utilization development project for 2017 from the Department of Industrial Works on 1 September 2017.



Awarded for Employee's Good Health Promotion for SMEs from the Department of Industrial Works on 29 June 2017 and has continuously been applied in the organization.



Environmental Management System in the organization

1. Sorting garbage types
2. Hazardous waste management
3. Water management system
4. Air quality management, e.g. ventilations and extractions in the production room
5. Chemical evaporation management
6. Employees' health and safety
 - Annual health check-up
 - Warning signs in the strict area and clearly visible
 - Provide personal protective equipment [PPE] and all employees wearing them properly
 - Green area

