

e-Report

- Global Material Trend

TITLE 타이틀명	Material Sample Kit _ Fresh Idea II
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DESIGN SPECTRUM™

Material Sample Kit



Fresh Idea II

Creative Thinking with New Materials

Functional Material

Process

Electrical Parts

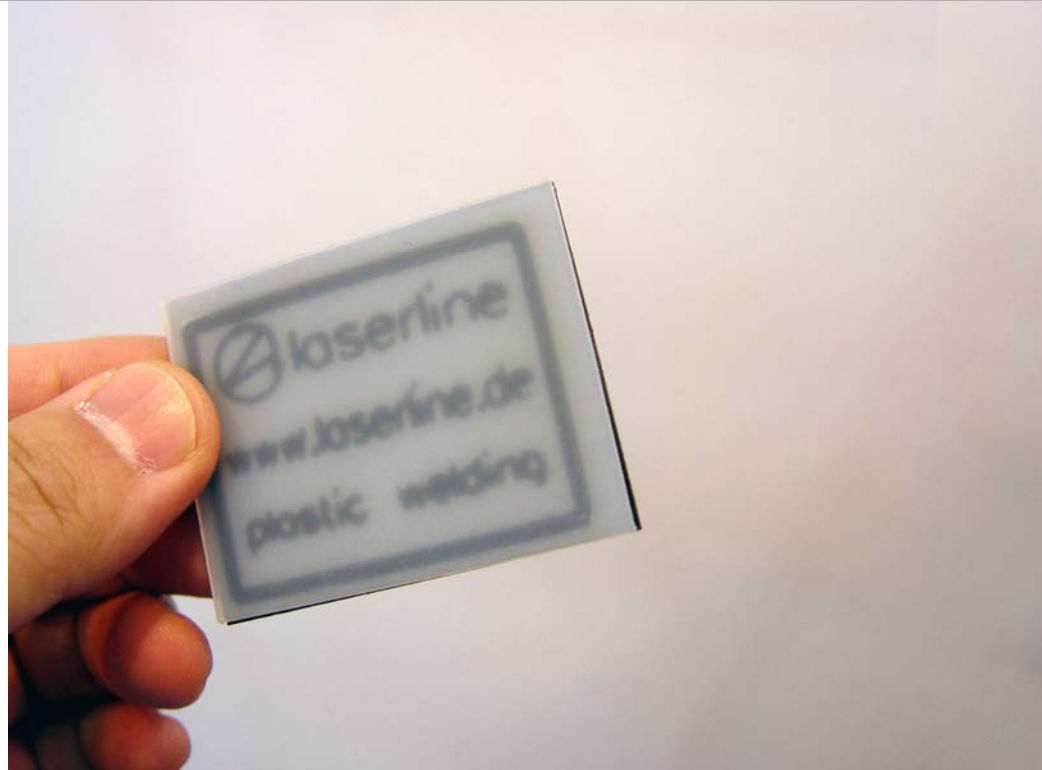


다이오드 레이저를 이용한 플라스틱 용착 기술

Details

레이저 용착 기술은 사진처럼 두 플라스틱 표면을 접합시키면서 패턴을 만들어 낼 수도 있다.

이를 이용하면 투명한 레이어를 가진 제품의 외관 내부에 다양한 패턴을 입력하는 것이 가능하다.



Contact.

Eurovision
한상배 차장

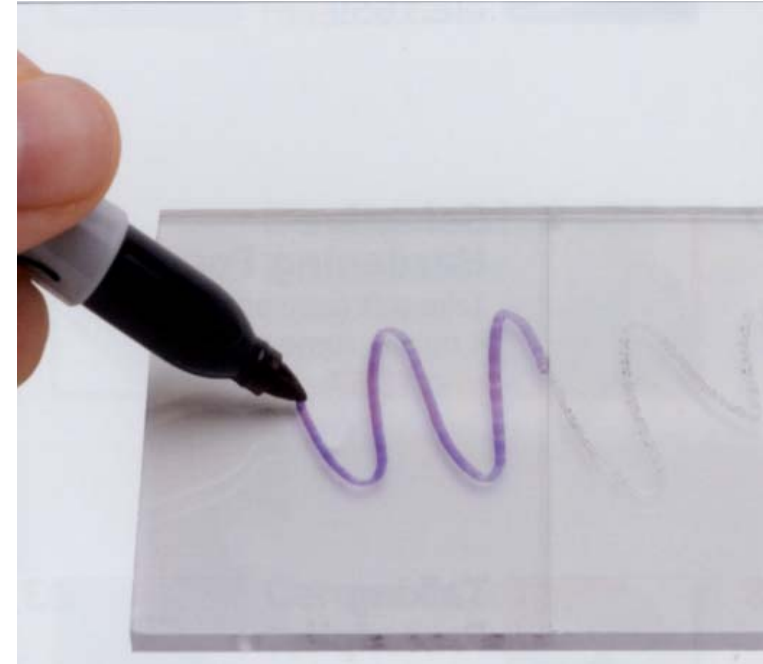
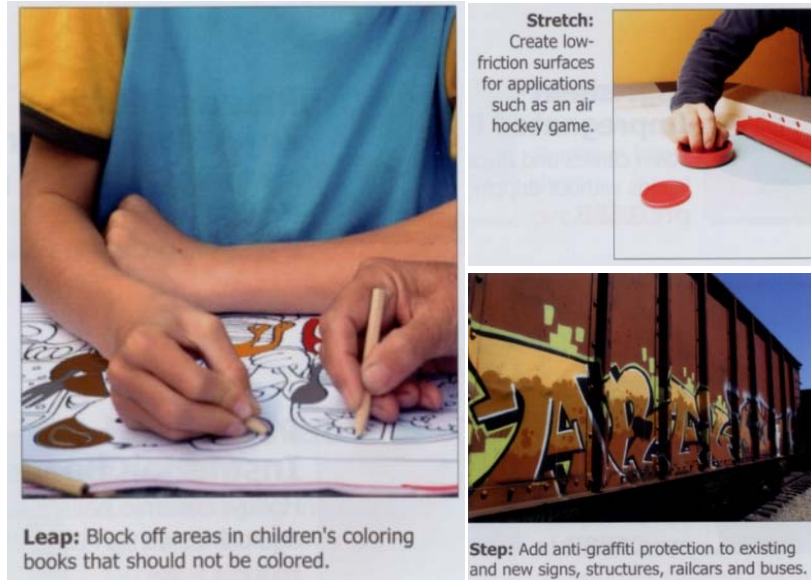
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Details

표면 보호 필름.

낙서나 먼지 또는 녹으로부터 다양한 소재의 표면을 보호한다.



Keyword

Feature	The film protects against graffiti, dirt, rust, bleaching from UV radiation and other weathering effects.
Material/Process	FluoroGrip®-F
Manufacturer	Integument Technologies, Inc.
Application	Street and road signs, Street furniture, Garbage bins, Mailboxes, City bus, Trains, Subway windows, Interior/Exterior walls, bathroom stalls, schools
More Info.	http://www.integument.com/products/fluoro.php

Details

감자 전분으로 만든 친환경 플라스틱으로써
음식용기나 패키지 등을 만들 수 있다.

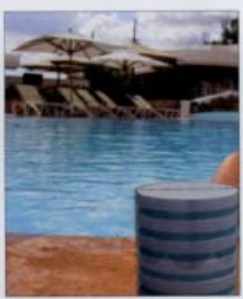


Leap: Currently, biodegradable plastics aren't used to preserve foods as they are air permeable. Coat biodegradable plastics with nanoday technology to make them air tight.



Step: Sandwich this inside paper plates to keep them from becoming soggy.

Stretch: Create a chemical-dispensing tube for swimming pools containing several plugs separating doses of chemical. After you throw it in the pool, once a week a plug dissolves and releases its chemical.



Keyword

Feature	This is durable and disposable cutlery made out of pressed potato starch and oil.
Material/Process	Vegware Natural Starch Cutlery
Manufacturer	VegWare
Application	Cutlery, foodware and packaging, tableware, etc.
More Info.	http://www.vegware.co.uk

Ceramic Cloth

Details

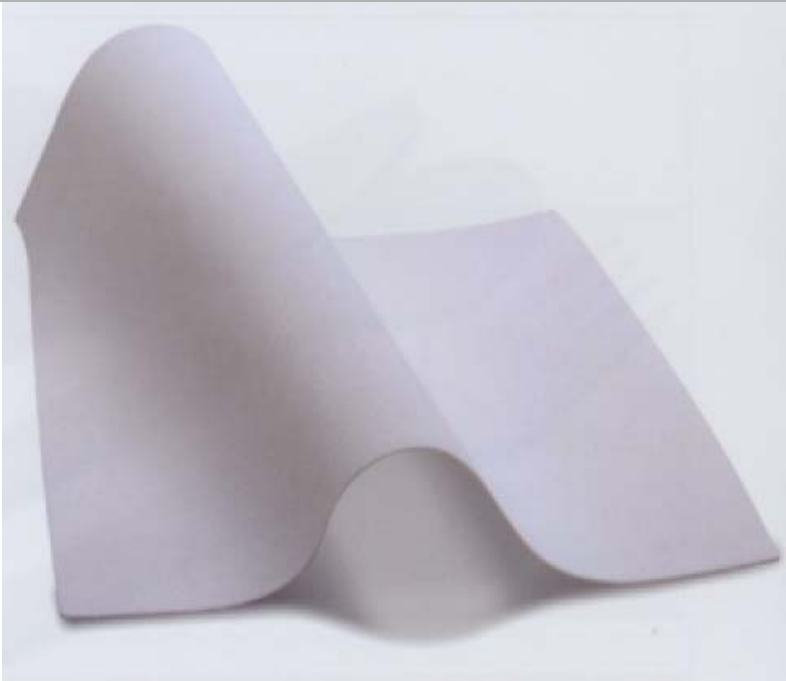
세라믹 섬유로 만들어진 직물로서 열과 전기에 대한 차단효율이 높다. 일반 직물처럼 재단하여 사용할 수 있으며 경우에 따라 단단하게 만들 수 있다.



Stretch: Cushiony laptop bottom that protects your thighs from heat



Step: Filtration of hot gases



Keyword	
Feature	Temperature resistance, lowest thermal conductivity
Material/Process	Zirconia Cloth Type ZYK-15
Manufacturer	Zicar Zirconia, Inc.
Application	Separators in nickel-hydrogen batteries, High-temperature insulation, Heat shielding material, Reinforcement for ablative materials, Filter media for hot gases, Catalyst supports, corrosion, resistant wrapping, Flexible setter cloths
More Info.	www.zicarzirconia.com

Clear Insulating Coating

Details

금속이나 플라스틱 등의 소재에 코팅을 하면 부식과 산화방지의 효과와 동시에 열을 차단하는 효과가 있다.



Stretch: Coated metal used on stair rails and car door handles to keep them from getting extremely hot under the sun.



Step: Insulated beverage bottle



Leap: Raincoat that can also insulate



Keyword

Feature	Prevent oxidation and corrosion, reduces heat transfer.
Material/Process	Nansulate™
Manufacturer	Industrial Nanotech, Inc.
Application	Textile, Food Processing, Pipes, Tanks, Other hot processes
More Info.	http://www.nansulate.com , www.industrialnanotech.com

Details

더운 날씨에는 땀을 방출하고 외부 수분은 막는다.

추운 날씨에는 수분 방출을 막아 몸을 따뜻하게 유지한다.

날씨에 관계없이 착용자의 몸을 항상 쾌적하게 유지시켜준다



Stretch: A blanket carried by an emergency vehicle that's used to stabilize a patient's core temperature.



Step: Camping, foul-weather and active sports clothing, shoes and gear



Leap: A compost cover that keeps material warm and speeds decomposition, then keeps internal temperature optimal by venting excess gas heat.

Keyword

Feature

The c_change™ membrane reacts to different prevailing conditions. In doing so, not only temperature but also air and body moisture are balanced out.

Material/Process

c_change™

Manufacturer

Schoeller USA

Application

c_change™ is applicable for apparel for highly aerobic activities: bicycling, golfing, running, hiking, skiing, sailing, motorcycle, etc. The functions include water and wind protection, waterproof, moisture vapor permeability, adjusts to climate changes.

More Info.

<http://www.c-change.ch>
www.schoeller-textiles.com

Colored Flame

Details

다양한 불꽃 색을 가진 양초.
빨강, 보라, 녹색, 파랑, 골드의 다섯 가지 색이 가능하다.
저마다 다른 metal salts를 양초에 섞으면 다양한 불꽃 색을 연출
할 수 있다.
Lithium(red), sodium(yellow), potassium(purple),
rubidium(blue),
Cesium(sky blue), copper(green)



Leap: A gas stove indicator that changes the flame color from blue to red when the flame is set on high.



Step: Colored cigarette lighter fluid



Stretch: Colored logs for a fireplace



Keyword	
Feature	The candles are non-toxic and do not give off harmful smoke or combustion gases.
Material/Process	Metal salts, candle
Manufacturer	Herbaria Products Ltd.
Application	candle
More Info.	http://www.angelflames.com

Details

매우 얇고 구부러지는 디스플레이.
LCD, CRT와는 다르게 직사광선 아래에서도 선명하게 글을 읽을 수 있다. 배터리 효율이 매우 높다.





Step: Animated sign that can be read in direct sunlight.

Stretch: Download Web sites to electronic paper to read on the bus.



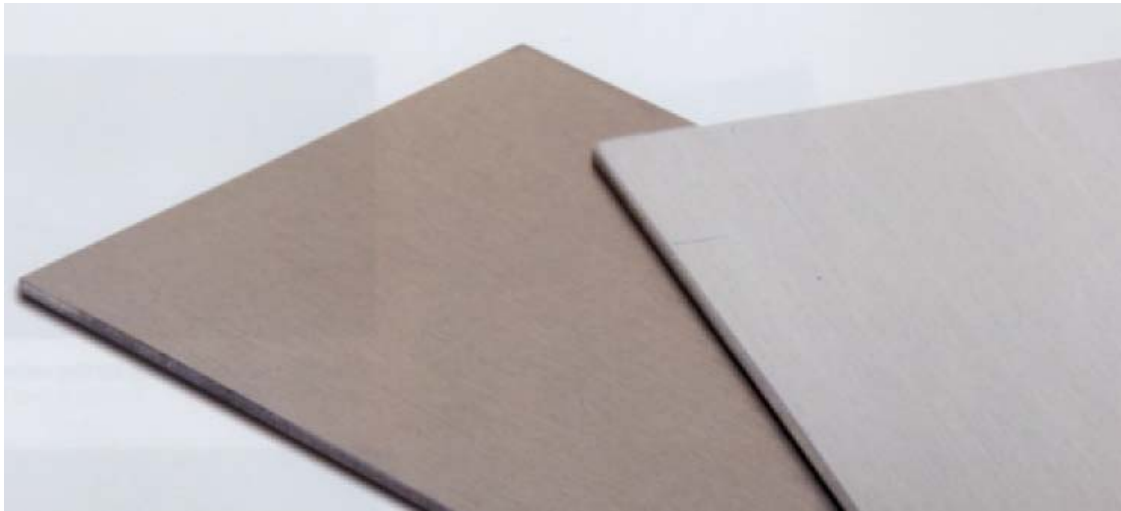
Leap: A reusable Sudoku game that can randomize numbers



Keyword	
Feature	Super-thin, bendable, energy-efficient
Material/Process	E Ink® Imaging film, Ink-In-Motion™ (IIM)
Manufacturer	NeoLux Co. Ltd.
Application	Advertising on: Shelves or counters. Cosmetics, Electronic goods, Cellular phones, Cigarettes, Games
More Info.	www.neoluxiim.com

Details

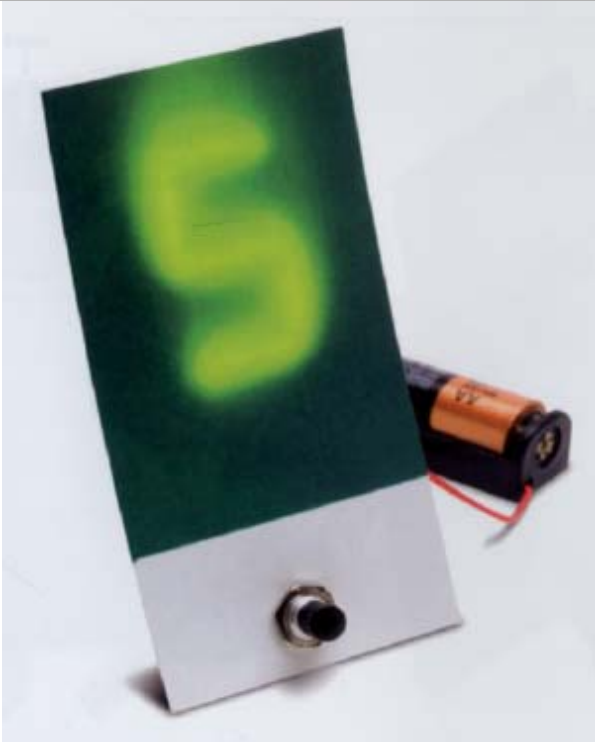
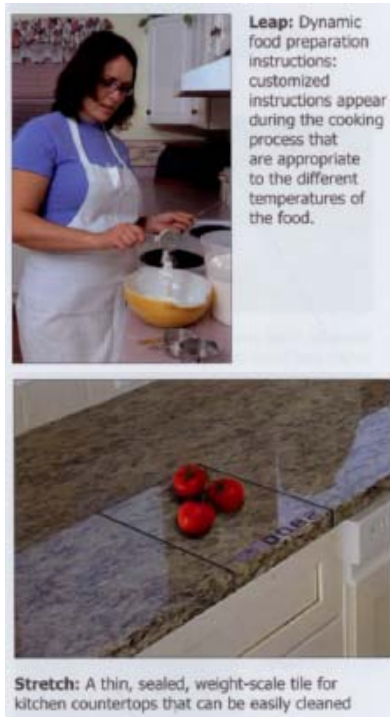
알루미늄 자체로는 부식되지 않는다.
하지만 좀 더 튼튼하게 하려면 합금으로 만들게 되는데
이때에는 부식의 위험이 있다.
하지만 이 기술로 특성이 다른 두 알루미늄을 융합시켜
부식에 강하고 더욱 튼튼한 소재를 만들 수 있다.



Keyword	
Feature	Automotive sheet with both strength and improved formability to enable new design options. Architectural applications with a superior surface finish and enhanced strength.
Material/Process	Novelis Fusion™ Technology
Manufacturer	Novelis
Application	Automotive, Infrastructure, Architectural, Heat exchanger, Transportation
More Info.	www.novelis.com

Details

온도에 따라 색이 변하는 필름으로 다양한 소재에 적용될 수 있다. 하지만 온도 변화에 비해 상대적으로 반응속도가 늦다.



Keyword	
Feature	This display incorporates heat-activated inks (thermochromic inks), which change colors in response to temperature changes
Material/Process	Thermochromic inks
Manufacturer	ARL (US Army Research Labs)
Application	Media, Advertising, Safety, Toys, Education, Fashion, Computers, Trade Shows, Interactive literature/instructions, Training
More Info.	US Army Research Labs, mrausa@arl.army.mil

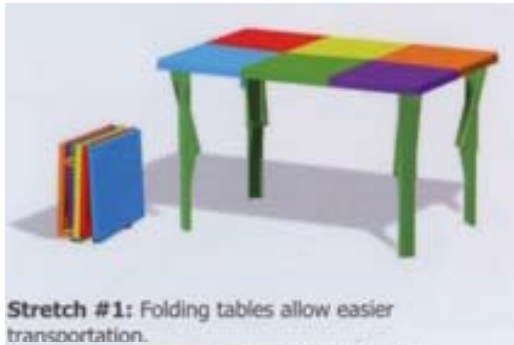
Hoberman's Fold

Details

두껍고 단단한 제품들을 작게 접을 수 있는 기술.

(Patent-pending hinging system)

의자, 테이블을 비롯해 크고 넓은 제품을 작게 접을 수 있다.



Step: Collapsible lap tray for automotive, airplane or bus passengers



Keyword

Feature

This design system makes it possible for rigid or thick, large surfaces to be folded up into a compact bundle.

Material/Process

Hoberman's Fold

Manufacturer

Hoberman Associates.

Application

Aerospace, Furniture and Interiors (both commercial and residential), Tradeshow Displays, Toys and Entertainment, Consumer Electronics, Military

More Info.

www.hoberman.com

Ingredient–Impregnated Foam

Details

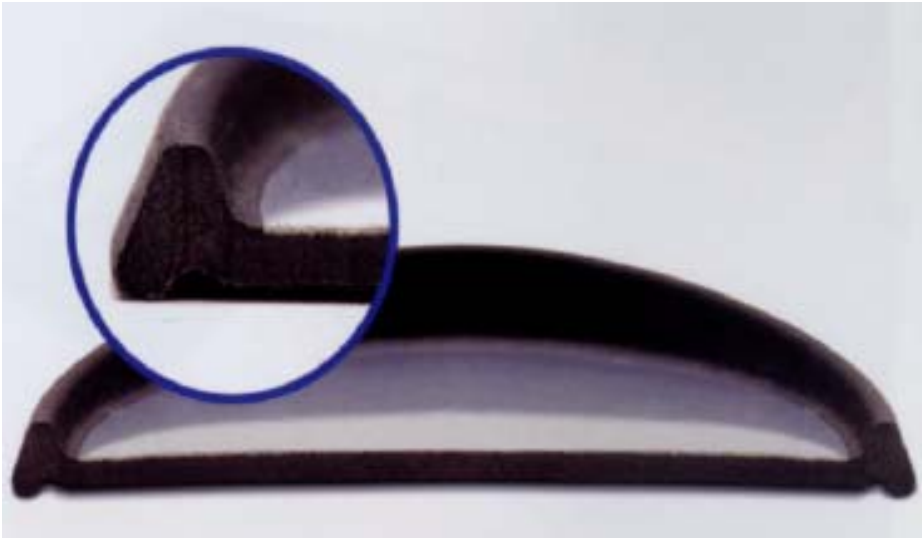
수분에 접촉하지 않았을 때에는 일반 스펀지 이지만
물에 적시면 스펀지 내의 작은 입자가 물에 녹아 섞여 나오게
된다. 화장품이나 커피 등의 휴대용품에 응용할 수 있다.



Keyword	
Feature	This foam can carry up to 15 times its weight in water-based liquids, and it will not release any liquid until it has been immersed in water.
Material/Process	Capu-Cell® Polyurethane Foam
Manufacturer	TMP Technologies
Application	A clean room wipe in the medical and electronics industries.
More Info.	A clean room wipe in the medical and electronics industries.

Details

금속과 폴리머를 하나의 성형물로 제조할 수 있는 기술.



Keyword	
Feature	This process makes it possible to mold single parts combining the properties of steel and polymer in one step, using a standard, unmodified injection-molding machine.
Material/Process	Polymer Injection Forming (PIF)
Manufacturer	Corus Group
Application	Small Domestic Appliances, Consumer Electronics and Automotive interior trim
More Info.	www.pif-solutions.com

Pourable Insulation Beads

Details

고온의 열을 견뎌 낼 수 있는 절연물질의 알갱이.



Keyword

Feature

Ceramics make great insulators. These hollow ceramic balls are made from a ceramic known as zirconia. They provide thermal insulation for extremely high-temperature applications.

Material/Process

Type ZHB zirconia hollow balls

Manufacturer

Zircar Zirconia, Inc.

Application

Heat-exchange media in fluidized bed reactors.
Insulation in constrained spaces in very-high temperature applications.

More Info.

www.zircarzirconia.com

Selective Hardening Foam

Details

Foam의 특정 부분을 단단하게 만들 수 있는 기술.
패키지에 응용 가능하다.



Step: Packaging that's harder on the outside and softer on the inside to protect contents



Stretch: Blackboard eraser that's soft on the side that does the erasing and harder and stiffer on the side that's held



Keyword

Feature

This soft, flexible polyurethane foam can be machined into complex shapes with smooth contours. Using a second electron beam process, a foam part can be made soft in some areas and rigid in others.

Material/Process

StructUre™ polyurethane foam

Manufacturer

Foam Parner Reigies

Application

Rigid foam: weight-saving material, sandwich structures, trucks, rail vehicles, aerospace, boat building, blades for windmills, building industry
Semi-rigid foam: Automotive, sports, body protection, packaging, shock absorption

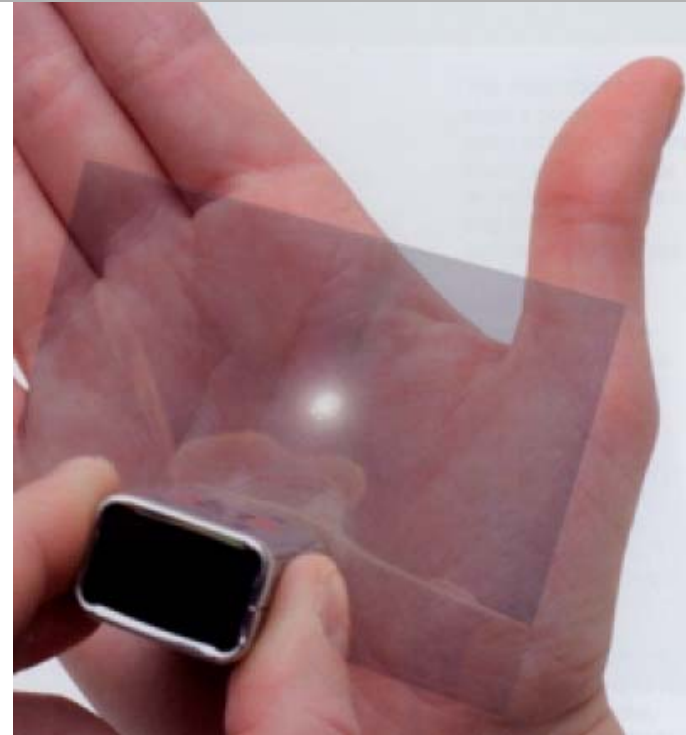
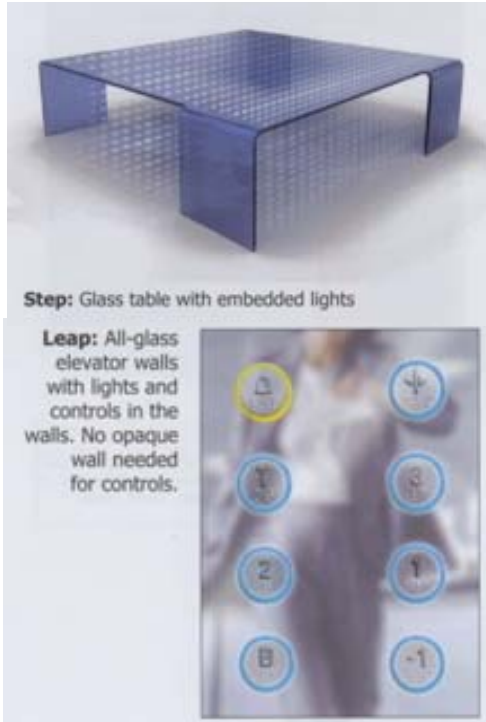
More Info.

www.zircarzirconia.com

Transparent LED Film

Details

투명한 필름에 전도성 있는 코팅을 하는 기술.
투명한 전자제품에 응용할 수 있다.



Keyword

Feature	This film is a clear sheet with a transparent but electrically conductive coating acting as invisible wires.
Material/Process	electrically conductive coating film
Manufacturer	Sun-Tec Swiss United Technologies Co., Ltd.
Application	Architectural glass, Automotive industry, Elevator industry, Doors (Glas Trösch), Big Glass Design Elements (Glaverbel), Sensor Glass Elements (Schindler), Military applications
More Info.	www.sun-tec.ch

Wood Paper

Details

종이처럼 얇은 나무이며 전자제품의 케이스나 각종 패키지에 적용하면 실제 나무 질감을 느낄 수 있다.



Keyword	
Feature	Sheer Veneer is the only known wide-web, all-natural ultra-thin veneer made specifically for the printing and converting industries.
Material/Process	Wood Paper(Sheer Veneer)
Manufacturer	Sheer Veneer
Application	Currently packaging, printing, lamination, pressure sensitive adhesive converting, emboss/foil, point of sale, litho label for corrugate. Soon to approach in-mold label for electronics and automotive.
More Info.	www. sheerveneer.com

Lumisty view control film

Use

Although this film was designed for sticking to glass windows it can just as easily be applied to plastics, which means that it potentially has uses within a product application. Although it has yet to be fully explored it has been used for keeping prying eyes from computer monitors but there is an opportunity to use in point of sale, and security application or even to experiment with applying in a more graphical context

Why use it

The most sensible reason is in places where you want a level of control over what can and what can't be seen. But just as valid is to use it because it's fun!

wwwhere else

www.madico.com

www.lumistyfilm.com

UK distributors are Architectural Window Films

Tel : 0208 441 4545



Thermochromics

Uses

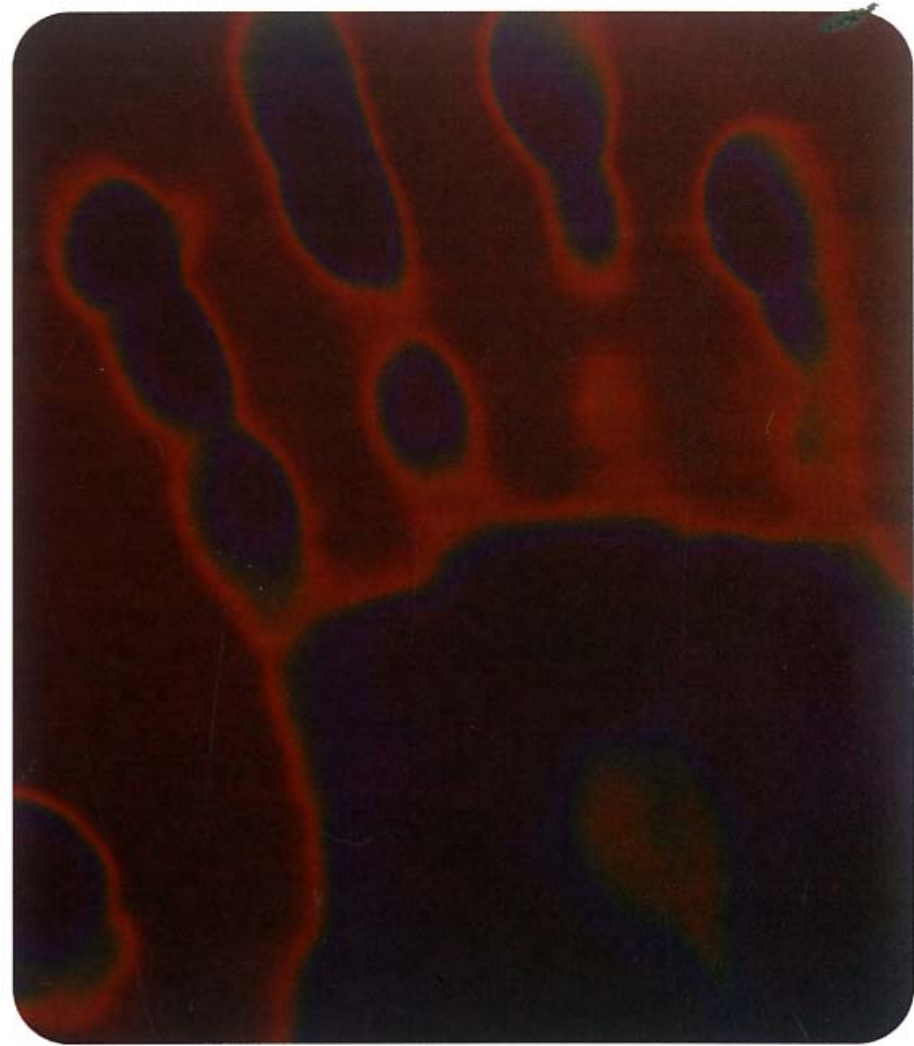
Thermochromics can be used in sheet form, printable form and as a master batch to moulded product. Depending on the type of thermochromics they are found in, including everything from children's products for testing the temperature of food and drink to industrial safety signage, promotional products and even food packaging.

Why use it

Apart from being a whole load of fun the ability to warn of high temperatures means they have many uses in safety applications, in either the printable or mouldable form. Depending again on which type you select the effect can be reversible or non-reversible.

wwwhere else

www.chromazone.co.uk



Shape memory polymer

Uses

Most applications so far are in industrial uses and as componentry. But what

Would happen if this element of recovery could be applied to consumer products? As a way to repair dented car bumpers or as a way to customise household products, or collapsible furniture.

Imagine bending a sheet of this stuff into one product, sticking it in a hot bath and starting again with something else.

Why use it

The obvious feature of this material is that it can be formed, bent, and then when heated returns to its original shape.

wwwhere else

www.crgrp.net



Uses

Formed in 1997 rolatube, the company who invented the product applications for this unique technology. The material itself allows for a whole new range of collapsible products. Its website demonstrates a list of applications that currently use rolatube including flags, masts and also something called a fiddleStik check it out for yourselves! But the area of consumer product and new opportunities for temporary or portable structures has yet to really embrace this fantastic little invention.

Why use it

The obvious use is for a more efficient transportation of structures and storage. But another use for this extendable tube is in areas where access may be a little restricted for long poles which might benefit from a little extendibility

wwwhere else

www.rolatube.com



Translucent concrete

Uses

This material is still at the early stages of research but it is anticipated that some day you will be able to have architectural applications, furniture and patrician walls.

Why use it

It opens up a whole new set of scenarios and possibilities for structural materials with a high compression strength that transmit light.

wwwhere else

billpprice@hotmail.com

www.optics.org

www.nbm.org



TRANSPARENCY _ Glas-platz

Uses

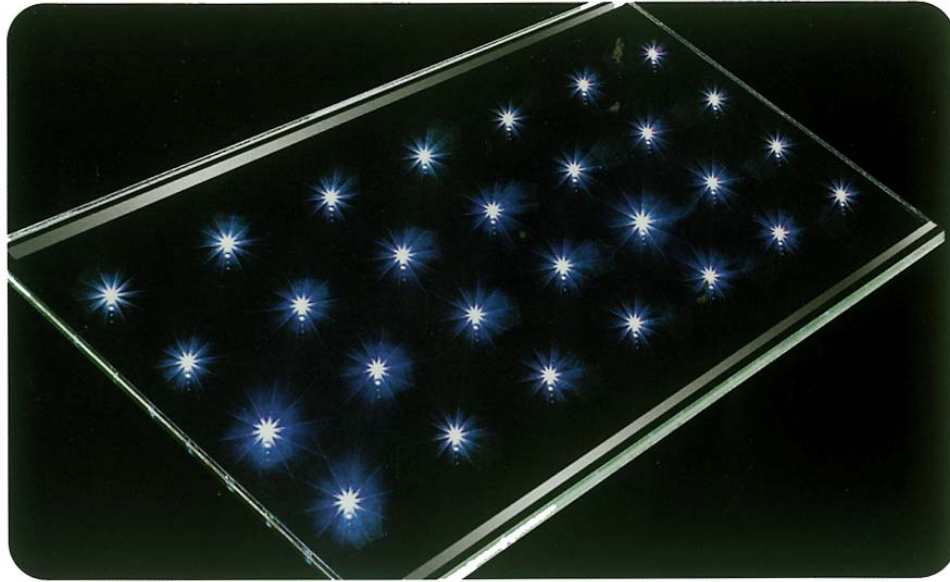
The panels can be suspended or fixed directly to windows. The scale of the panels can be specified during manufacture and can be used as task and decorative lighting in any environment from commercial to domestic.

Why use it

The potential for walls of lights held in a transparent screen make this a unique form of lighting. The composition of these lights can be altered into any pattern you want, allowing not just decorative effects, but also branding and signage.

wwwhere else

www.glas-platz.de



TRANSPARENCY _ Effects

Uses

The possibilities are endless. There are enough decorative effects between these companies to keep designers thirst for new surfaces and effects satisfied, but if you are in need of some ideas here are a few; packaging, mobile phones, wearable electronics, toys and jewellery.

Why use it

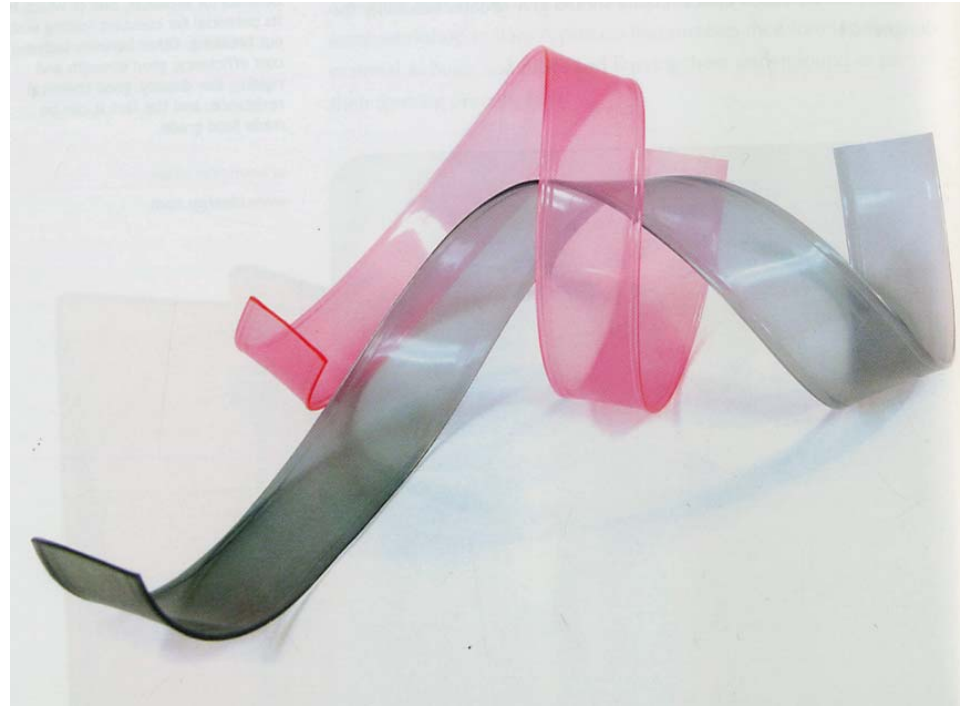
Purely for decoration. One of the interesting applications for illuminate is in plastic bottles for water, which give off a blue tint along the moulded edges of the container.

wwwhere else

www.geplastic.com

www.dow.com

www.bayerfantasia.com



TRANSPARENCY _ Clear PP packaging

Uses

The key to understanding uses for this new formula lies in the fact that the markets for polypropylene can be much broader due its increased clarity, replacing plastics like PET and PVC. Applications include food and storage containers, bottles, packaging, medical devices, sheet, tubes... a virtually endless variety of innovative products.

Why use it

It has many practical advantages which bring a whole new range of benefits for products, one of which is its potential for constant folding without breaking. Other benefits include; cost efficiency, good strength and rigidity, low density, good chemical resistance, and the fact it can be made food grade.

[wwwwhere else](http://www.whereelse.com)

www.clearpp.com



TRANSPARENCY _ Clear PP packaging

Uses

Apart from the optical clarity it is used in all sorts of places ranging from toothbrushes, tool handles, toys and goggles. Many of these personal, hand held products exploit its naturally warm feel

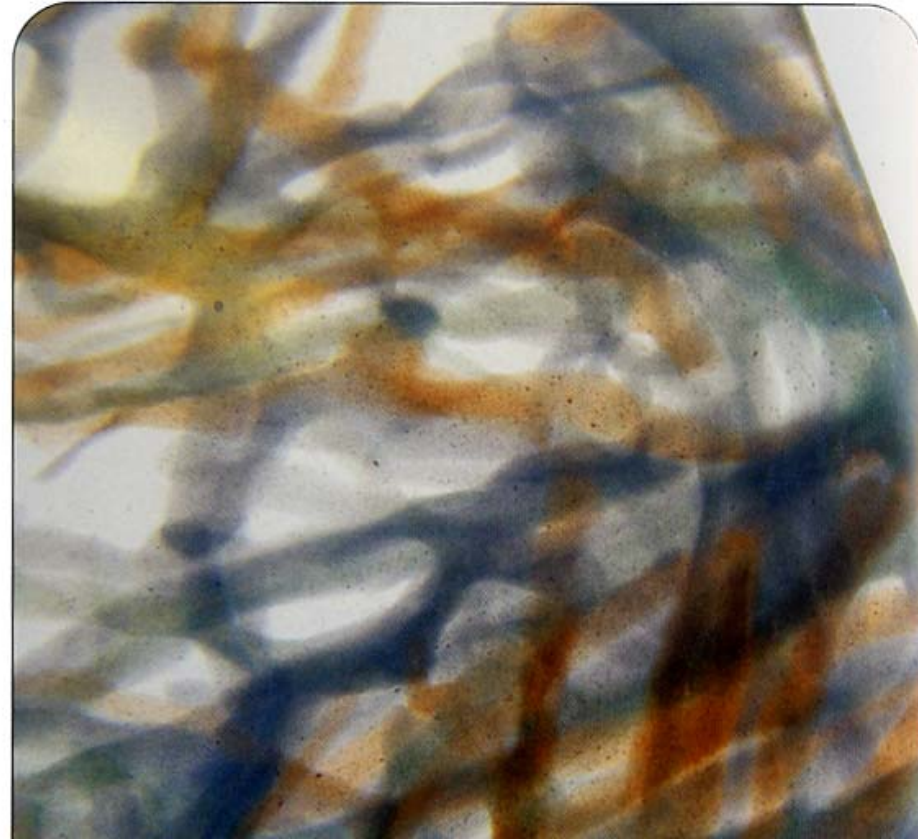
Why use it

Apart from its clarity it is unique in the way it suspends these clouds of colour beneath its skin, which gives it an historic reference. Other reasons to use it are that it's tactile nature and it is partly made from a renewable source.

wwwhere else

www.eastman.com

www.mazzucchlli1849.it



SURFACE _ multiple skin _ Inclosia

Uses

The potential for applying materials on to plastic mouldings is almost limitless. Existing products include mobile phones, PDA's and laptops. Denims, leathers, thin metals, foams and suede are all potential skins.

Why use it

The potential for applying materials on to plastic mouldings is almost limitless. Existing products include mobile phones, PDA's and laptops. Denims, leathers, thin metals, foams and suede are all potential skins.

wwwhere else

www.dow.com/inclosia

www.tulip.nl



The Tulip E-Go laptop
Image courtesy of Tulip

INCLOSIA

SURFACE _ as secondary skin _ Axolotl's metal finishes

Uses

Axolotl's goal is to create buildings and objects that generate the response, "that can't be metal because you can't do that with metal!". The possibilities are limitless from building facades to furniture for both interior and exterior applications.

Why use it

This is more than just a metal coating but a material in its own right. It can do more than metal as it provides a hybrid between different materials. Complex organic shapes at virtually any scale and textures can be produced with various materials and finisher in metal.

wwwhere else

www.axolotimetal.co.uk

www.axolotl.com.au



SURFACE _ as function _ Thick film metalising

Uses

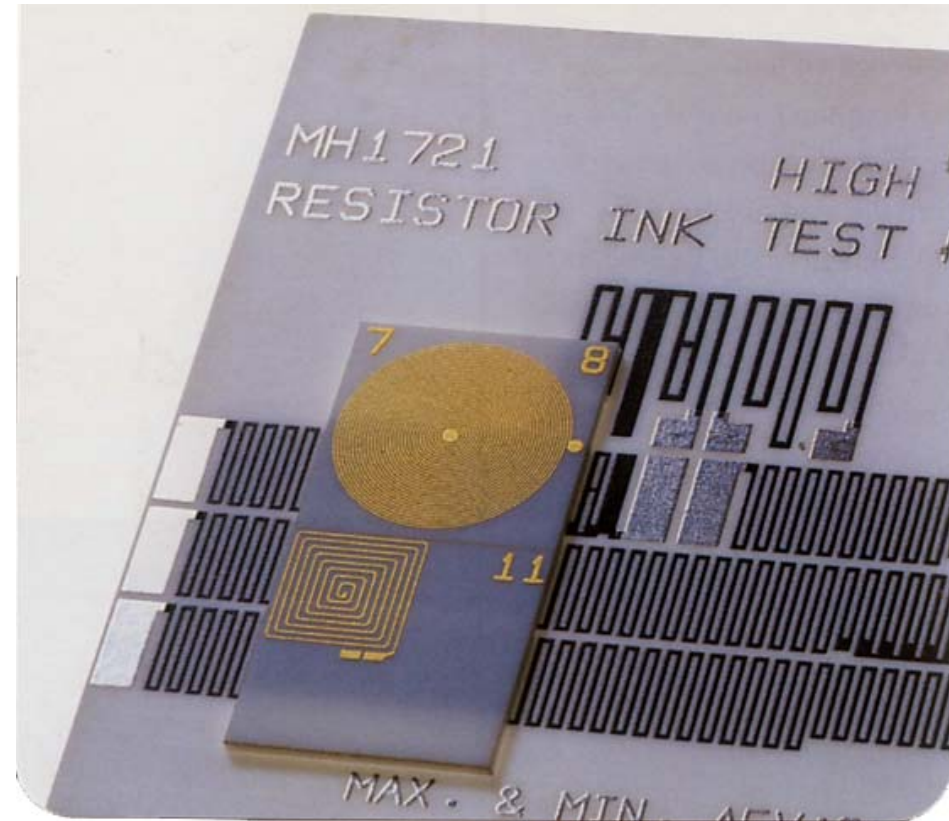
So far this technology has been used in industrial and military rather than consumer application ranging from custom designed thick-film hybrids and surface-mount assemblies to standard products such as high voltage/ high value resistor

Why use it

The process of thick film metalising allows for higher operating temperature than conventional PCB's. it's also has a high adhesion strength and parts can be plated-through holes, unusual shapes, different thickness' and either single or double sided

wwwhere else

www.copernicaltd.co.uk



SURFACE _ structural surface_ German hexagons

Uses

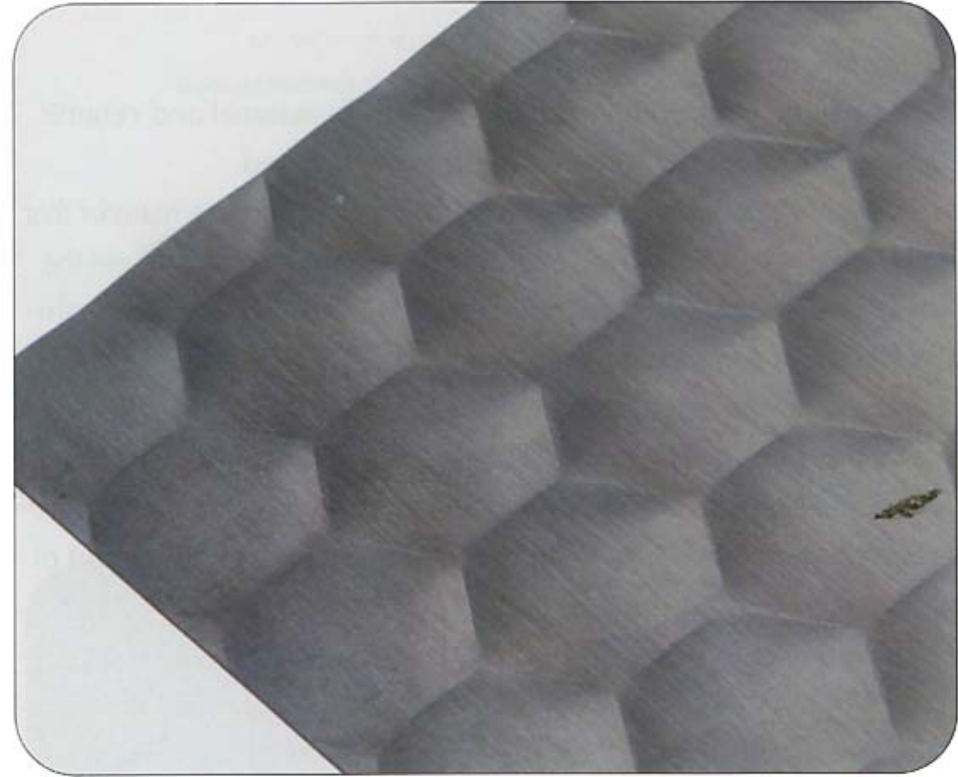
The material is still relatively new but possible applications include tubing with vaulted panels, low weight ceilings, food and industrial packaging and construction ducting with a decorative element.

Why use it

The most important result of this “natural” transforming process is very high rigidity with smaller material consumption. But apart from this, it is also a principle that can be applied to virtually any flat material and because no mechanical moulds are used during production it does not damage the existing surface. There is also a degree of impact absorption and the fact that it also creates a rather impressive decorative yet intelligent surface pattern.

wwwhere else

www.mirtschusa.com



COLOUR _ Master batch special effect pigment

Uses

As we continue with the last breaths of minimalism this particular decoration is possibly not the first type of decoration that might spring to mind when looking for an effect, but they do provide a really unique quality for a plastic moulded product, which on the level of fashion accessories it can be seen as competitor to the marbled, cloudy effect of cellulose acetate.

Why use it

The main advantage of using a masterbatch is that whether it is a visual effect, colour or another form of enhancement the quality is captured in the entire thickness of the component, which eliminates the possibility of colours being worn or scratched off.

wwwhere else

www.clariant.masterbatches.com



COLOUR _ Active and intelligent packaging

Uses

This has any number of uses within the packaging industry for food, cosmetic and medicine that degrade under UV light, allowing for an increase in the shelf life of these products.

Why use it

In contrast to the other uses of colour this technology applies colour for a purely functional use, which provides an excellent potential to extend the life of product.

wwwhere else

www.ivy.fraunhofer.de



COLOUR _ Surface effect in injection

Uses

In a way this form of decoration contradicts produce identical shiny plastic objects, but with this use of colour, products are formed that don't conform to this standardised identity. Instead they take on the quality of natural materials.

Why use it

The main feature here is the distinctive visual quality of the colour within the injection moulding process to form this churned pattern. Due to the fact that it can be used on any existing tooling and machines products can be given a new character by the use of this effect, without the need to re-tool.

wwwhere else

www.addmix.com



COLOUR _ Sublimation coating

Uses

This technology can be used to decorate and personalise standard products without the need to re-tool. In particular this can be useful for seasonal and fashion led products like exceptional resistance to wear can be applied to existing tooled designs.

Why use it

Because of the depth of the layer and the way it is absorbed by the product, sublimation printing has an excellent scratch and wear resistance. Images can be printed with a high-resolution and can be applied to range of different materials even on a very large scale including, in one case, an 18 foot aluminium fishing boat

wwwhere else

www.kolorfusion.com

www.functionalaesthetics.platics

Dupont.com



Memory foam

Uses

Originally it was used in medical applications for orthopaedic bed mattresses and cushions to prevent bedsores. It is also used for shoes, sound absorption and dampening as well as for impact absorption. The foam has additionally been utilised for flooring.

Why use it

Apart from its memory feature, the foam comes in various grades of hardness. However, all the varieties demonstrate good impact absorption and distribute pressure evenly. The open-cell, porous structure also allows the material to 'breathe'

wwwhere else

www.foampartner.com



The End

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