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Packaging Films

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■ RUSSIA

A first

DUAL SPIRAL SYSTEMS ■ The Canadian manufacturer supplied, the first and so far only 10-layer, 10-extruder blown film die to an undisclosed customer in Russia. The line was tested in Q4 of 2011. Films being produced on this line are next

generation nano-composite barrier films for food packaging. *Dual Spiral Systems*

(DSS) die technology was an

ideal fit for nano-composite barrier

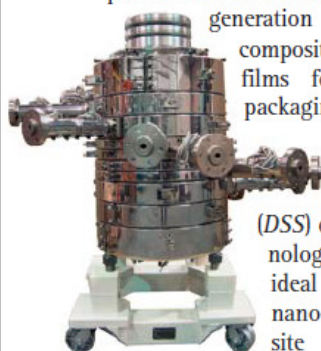
film production. DSS dies employ layer splitting which multiplies the number of layers being produced. One of the effects of DSS layer splitting is an increase in the strength of the film through the »plywood effect« meaning that a 2-ply film will be stronger than a single-

ply film of the same overall thickness. The same premise applies to gas barrier properties. As the number of layers increases the number of interfaces between barrier layers also increases, hence providing a higher overall barrier property of the layer split film.

The barrier property of a split-barrier layer film will always be better compared to coex with a single-barrier layer of the same material and same total thickness of barrier resin. The reason is the energy required for oxygen penetration, into the barrier layer is a different value (higher) compared to the energy required for transition through the barrier layer. Each interface affects the barrier resulting in a lower permeation rate. The permeation rate is further decreased by the use of nano-composite barrier layers within the film structure.

➔ www.dualspiralsystems.com

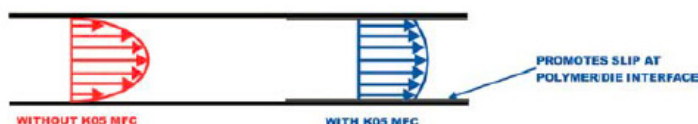
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Composite coating for extrusion dies

DUAL SPIRAL SYSTEMS ■ The supplier has teamed up with a surface engineering and coatings company to supply a newly developed composite coating for extrusion dies named *K05*. The new *K05* coating is intended for use on extrusion components which experience a high degree of abuse or abrasive wear, where chrome plating was previously used.

Nickel plating. Due to its very low COF, *K05* has the ability to reduce the occurrence of melt fracture commonly observed on extrusion lines that do not use polymer processing additives. Because of this, the *K05* coating reduces the need for PPA lubricants. Melt fracture or »sharkskin« causes processors to run blown film lines at slower rates. *K05* reduces the need for expensive



Some of the unique properties of *K05* are that it is extremely hard, resists temperatures in excess of 3000 °C (5432 °F), and has a coefficient of friction (COF) four times lower than regular Chrome or

polymer processing aids and allows processors to run at higher output rates by reducing the occurrence of melt fracture. *K05* coating is less expensive than traditional ceramic coatings used in extrusion dies.

DSS can plate any die lip section with *K05* regardless of who is the manufacturer.

K05 features include:

- Reduced melt fracture and reduced need for polymer processing aide.
- Use of narrower die gap for higher output.
- Eliminating the need for expensive lip heaters.
- Reduced die build-up and scrap.
- Extremely hard and durable: superior protection against wear.
- Better corrosion protection than chrome and no post plating grinding is required.
- Very low COF, excellent lubricity and release characteristics.
- *K05* can be applied to existing dies, and is a very cost-effective alternative.

➔ www.dualspiralsystems.com

and gloss while improving the sustainability of the total packaging system. The new films also provide good ink adhesion and print registration for a wide range of shrink labels for various bottle uses. They are commercially available in various gauges up to 63" (1600 mm) wide.

➔ www.eclipsefilmtech.com

Couplings for demanding tasks

ZERO-MAX ■ According to the manufacturer its Series A1C high-performance CD couplings are designed for demanding servo motor and motion control applications. Zero-Max says its couplings, which feature high torsional stiffness and high dynamic load capacity, ensure reliable machine operation, provide precise positioning under high-speed reversing loads without fatigue for reliable 24/7 operation, and are excellent for reversing loads and provide smooth operation at high speeds.

Compact design means a smaller machine footprint. Designed with improved clamp-style hubs for handling larger shafts and higher torque, shafts have increased clamping strength, eliminating the need for keyways for a cleaner, better balanced design.

➔ www.zero-max.com

Gas flow meter

OXYSENSE ■ The supplier of optical oxygen measurement systems to the packaging industries launched the new *OxyPerm* product that will further enhance the performance of its industry leading optical oxygen permeation system.

Film permeation testing is one of the key activities in most packaging labs. It is a must for flex pack design and development, and a critical quality control check for film producers, converters and packers. But all too often permeation systems, whether they be the legacy steady state or the new *OxyPerm* (dynamic accumulation) methodology, can produce confusing and often inconsistent results.

With the steady state systems, maintenance and calibration issues can be the route cause; but with the *OxyPerm* system, which is virtual maintenance free and does not need calibration, one needs to look elsewhere for an explanation.

According to *OxySense* a prime contributor to this inconsistency for solid-state and dynamic accumulation systems can be traced to excessive flushing gas flow rates that cause inconsistent relative pressure inside the permeation chamber, resulting in a distortion of the test film. This distortion can cause a

change in the chamber volumes, which can lead to inconsistent results.

The *OxyPerm* gas flow meter is a simple, but elegant solution to excessive gas flow rates. Through precisely monitoring and controlling the flushing gas flow rates and

the issues caused by inconsistent chamber pressures are avoided.

➔ www.oxyense.com

Our Editorial and Advertisement Sales Team will be at PLAST 2012, Milan/I, May 8-12.

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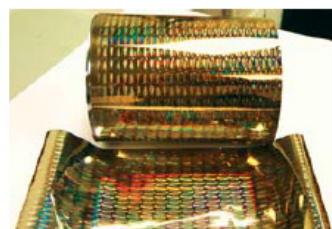
Yellow Gold vacuum metallisation process

IDVAC ■ The vacuum coating solution supplier has developed a vacuum metallisation process to convert standard Silvery coloured metallised films into Yellow Gold colour without using any wet chemical dyes. In this process, standard Aluminium metallised films which are Silvery in colour are converted in a vacuum into Yellow Gold colour with different shades. Golden colour can be applied on topside, backside or both sides of standard Aluminium metallised films or papers.

The present processes to achieve a Golden colour on standard metallised films use wet chemical dyes, which turn into a Golden colour once it is coated with Aluminium, or when Aluminium is lacquered by the chemical dyes. The application of chemical dyes onto films or papers requires the use of wet coating

machines and chemicals. This new process is dry, vacuum-based, environmentally friendly and cuts the cost of using wet chemical dyes. The vacuum colouration of standard metallised substrates is carried out inside a standard vacuum web metalliser at an average line speed of 200-300 m/min (656-984 fpm) depending on the Gold colour shade required. Metallised films such as OPP, BOPP and PET and metallised paper can be Golden coloured in this process.

➔ www.idvac.co.uk



Laminating adhesive

WEILBURGER GRAPHICS ■ The Senobond WB film laminating adhesive FP NDC 29-3536 375222 was especially developed for application in the field of food packaging and for odour-sensitive products. The film laminating adhesive is a water-based two-component adhesive with excellent adhesion values for lamination of all common film types to absorbent substrates.

➔ www.weilburger-graphics.de