



New connection on: : 30-05-2018 : 18:30:08 - Last disconnection on: : 30-05-2018 : 08:06:37

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 6] roll+ and film and (thermoplast+ or plastic or polymer)

Results in EPODOC 17.998

[SS 7] 6 and emboss+ and micro

Results in EPODOC 11

[SS 8] 7 and pd<20140707

Results in EPODOC 11

[SS 9] ..li



1/11 © EPODOC / EPO

PN - [KR20110137501](#) A 20111223

PR - KR20100057479 20100617

AP - KR20100057479 20100617

DT - I

CNOI - [G03F7/002](#) ; [H01L21/0274](#)

PA - UNIV KONKUK IND COOP CORP [KR]

TI - APPARATUS OF ENGRAVING A PATTERN USING **EMBOSSMENT ROLL** AND THEREFOR

AB - PURPOSE: A **micro**-pattern carving apparatus and method are provided to be used for carving various thin **film** printing materials by executing the patterning of a width direction and a longitudinal direction and the patterning of various shapes.
CONSTITUTION: An **embossment roll**(110) carves an engraving pattern in the surface of a printed circuit board material(120). A platen **roll**(130) is included in a location which is faced to the **embossment roll** and transfers the printed circuit board material. The printed circuit board material carves an engraving **micro**-pattern by pressure which is generated between the **embossment roll** and the platen **roll**. The printed circuit board material is **polymer** or an ITO(Indium Tin Oxide) coated **film**. A platen **roll** presser part (140) sanctions constant pressure which is fixed in advance to the **embossment roll**.

2/11 © EPODOC / EPO

PN - [TW200936094](#) A 20090901

PR - TW20080107181 20080229

AP - TW20080107181 20080229

DT - I

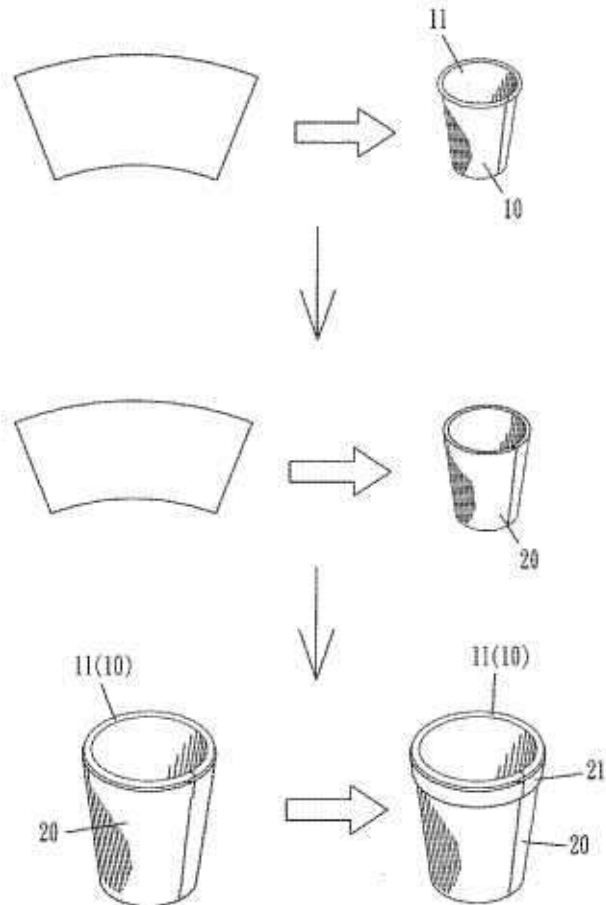
CCI - [B31D1/005](#) ; [B65D65/466](#) ;
[B65D81/3865](#)

CCA - [Y02W90/13](#) ; [B31B50/28](#) ;
[B31B50/72](#) ; [B31B50/81](#) ;
[B31B2105/00](#) ; [B31B2110/10](#) ;
[B31B2120/002](#) ; [B31B2120/501](#) ;
[B31B2105/0022](#)

PA - ZHANG XI-QING [TW]

TI - Environmental protection cup
and its structure

AB - This invention provides a
manufacturing method of an
environmental protection cup
and its structure. After using the
supercritical carbon
dioxide **micro** foam extrusion
technique to make the fully
biodegradable **plastic** materials
become **roll**-shape or plate-
shape, proceed to carry out
second-half processes of
printing, cutting, **embossing**, and
so on to obtain a fan-shape half-
finished product, followed by
one of the following steps:
ultrasound wave thermal
pressing, electric heating, hot
blast, high frequency pressing
adhesion to form a foaming cup
body, then interior of the
foaming cup body is under a
heat treatment method to make
its surface softened so as to
produce stickiness, or coated
with glue made of fully
biodegradable **polymer** material,
a paper glass is sleeved onto the
foaming cup body interior to
carry out compression molding,
simultaneously a convex ring
having a larger diameter is
formed on the cup rim outside
the foaming cup body, also a



circular foaming pad made of the same material is connected to exterior bottom of the foaming cup, the inner circumference surface of the paper plate is coated with a biodegradable thin **film** for being filled with oil, water, alcohol and acid-base drinks without leakage, and certain degree of heat (cold) preservation effect and thermal insulation effect can be also achieved.

3/11 © EPODOC / EPO

PN - [KR20100116554](#) A 20101101

PR - EP20090005613 20090422

AP - KR20100037195 20100422

DT - I

CCI - [B29C47/0021](#) ; [B29C47/0038](#) ;
[B29C43/222](#) ; [B29C47/885](#) ;
[B29C59/04](#)

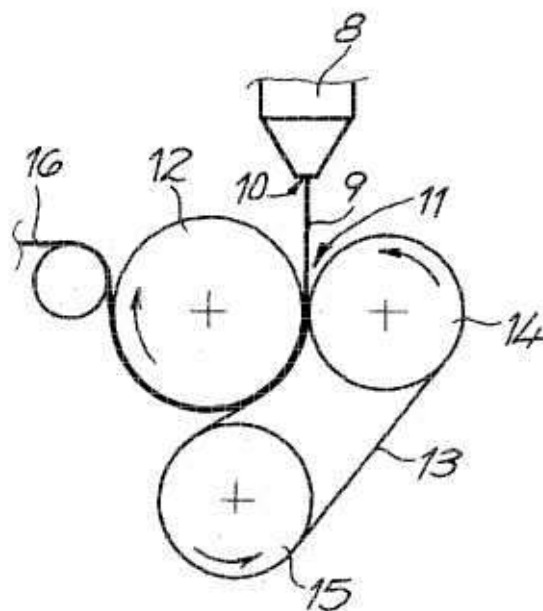
CCA - [B29C47/065](#) ; [B29C47/8845](#) ;
[B29C59/046](#) ; [Y10T428/24479](#)

PA - NORDENIADEUTSCHLAND
GRONAU [DE]

TI - METHOD OF MAKING
A **THERMOPLASTIC FILM** WITH A
THREE-DIMENSIONALLY
STRUCTURED SURFACE

AB - PURPOSE: A manufacturing method of a **thermoplastic film** having a three-dimensional surface is provided to prevent the formation of **micro** crystals by maintaining high cooling speed. CONSTITUTION: A manufacturing method of a **thermoplastic film**(16) having a three-dimensional surface is as follows. A multi-layered melted **plastic film**(9) is coextruded through a slit nozzle (10) by a nib(11) between a cold **roll**(12) and a rotary metal belt(13). The **plastic film** is **embossed** in the nib and

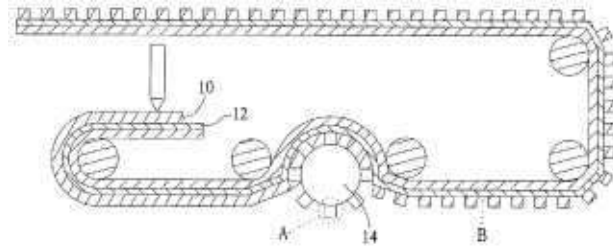
Fig.2



cooled, wherein an outer structural layer is formed of TPU (Thermoplastic Poly Urethane) and added with isocyanate.

4/11 © EPODOC / EPO

- PN - [US2005271803](#) A1 20051208
- PNFP - US7641935 B2 20100105
- PR - TW20040116220 20040604
- AP - US20050143487 20050603
- DT - *; Rep
- CT - || STSE (B2)
[US5705096](#) A 19980106 [] (ALPS ELECTRIC CO LTD [JP], et al)
[US2003152849](#) A1 20030814 [] (CHAN-PARK MARY [US], et al)
[US2004131861](#) A1 20040708 [] (CHAE KYUNG SU [KR], et al)
[US2004150141](#) A1 20040805 [] (CHAO CHIH-YU [TW], et al)
[US2005007651](#) A1 20050113 [] (LIANG RONG-CHANG [US], et al)
[WO03062872](#) A1 20030731 [] (EPIGEM LTD [GB], et al)
- || R141 (A1)
[US5705096](#) A [];
[US2005007651](#) A1 [];
[US2004131861](#) A1 [];
[US2003152849](#) A1 [];
[US2004150141](#) A1 []
- CCI - [G02F1/133305](#) ; [G02F1/13378](#)
- PA - (B2)
IND TECH RES INST [TW]
- TI - (A1 B2)
Method of liquid crystal alignment for a flexible LCD with **micro**-grooves
- AB - (A1 B2)
The present invention is method of liquid crystal alignment for a flexible LCD with **micro**-grooves comprising: coating a **thermoplastic** material onto a conductive **film**; heat **embossing** a plurality of **micro**-grooves formed by a mold, wherein the



surface of said mold forms said plurality of **micro**-grooves; and aligning said plurality of **micro**-grooves with an aligning wall and grooves. The present invention also adds a plurality of liquid alignment technology in **roll**-to-toll **micro** cell LCD processes. The plurality of liquid alignment technology lets the **micro** cells of the LCD from without aligning with an alignment LCD mode (such as TN, VA or horizontal alignment) and achieves a better contrast and display quality.

5/11 © EPODOC / EPO

PN - [TWI283324B](#) B 20070701

PNFP - TW200540533 A 20051216

PR - TW20040116220 20040604

AP - TW20040116220 20040604

DT - I

CCI - [G02F1/133305](#) ; [G02F1/13378](#)

PA - (A B)
IND TECH RES INST [TW]

TI - (A B)
Method of liquid crystal alignment for a flexible liquid crystal display with microstructures

AB - (A B)
The present invention is to provide a method of liquid crystal alignment for a flexible liquid crystal display with microstructures. The method of the invention comprises: coating a **thermoplastic** material onto a conductive **film**; thermal **embossing** a wall structure by a mold, wherein a plurality of **micro**-grooves is formed on the surface of said mold; and forming said plurality of **micro**-grooves with a wall and a plurality of aligning grooves. Meanwhile, the present invention provides a liquid alignment technology in the **roll**-to-toll **micro** cell LCD processes. The liquid alignment technology enables the previous art of **micro** cells of the LCD formed without aligning in LCD mode (such as TN, VA or horizontal alignment) to have a better contrast and display quality.

6/11 © EPODOC / EPO

PN - [JP2006007776](#) A 20060112

PR - CH20040001042 20040622

AP - JP20050182442 20050622

DT - I

CCI - [B29C59/04](#) ; [B31F1/07](#)

CCA - [B29C2059/023](#) ; [B31F2201/073](#) ;
[B31F2201/0733](#) ;
[B31F2201/0738](#) ;
[B31F2201/0743](#) ;
[B31F2201/0758](#)

FI - B29C59/04&C; B65B61/02

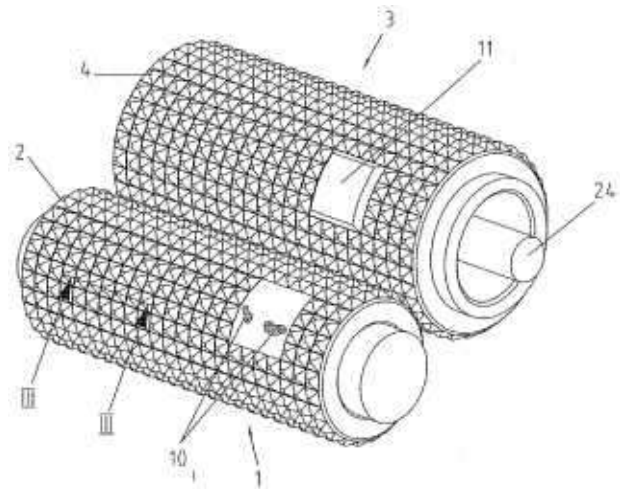
FT - 3E056/AA02; 3E056/DA01;
3E056/EA05; 3E056/FA03;
4F209/AD08; 4F209/AD20;
4F209/AF00; 4F209/AF16;
4F209/AG01; 4F209/AG03;
4F209/AG05; 4F209/AG21;
4F209/AG26; 4F209/AH54;
4F209/PA03; 4F209/PB02;
4F209/PC05; 4F209/PQ03

PA - BOEGLI GRAVURES SA

TI - METHOD AND APPARATUS FOR
APPLYING **EMBOSS** PROCESSING
AND SATIN PROCESSING TO FLAT
MATERIAL

AB - PROBLEM TO BE SOLVED: To
provide an apparatus equipped
with a first **roller** (1) provided
with tooth parts and at least one
second **roller** (3) provided with
tooth parts, characterized in that
the **rollers** are arranged so that
the respective tooth parts (4) of
one **roller** are locked with the
gaps between four tooth parts (2)
of the other **roller** and
constituted so as to
apply **emboss** processing and
satin processing to a flat
material.

- SOLUTION: The first **roller** (1) is
equipped with at least one **micro**-
structure (10) and opposed
pressure surfaces (11) are
provided to the respective
positions of the second **roller** (3).
The **micro**-structure (10) is

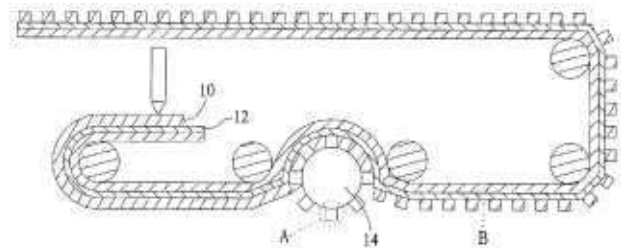


provided to a **roller** surface (5) through an intermediate layer (7). This method is especially advantageous in a case that a **film** (19) having a **thermoplastic** intermediate layer (21) is used. By this apparatus, a logogram of the **micro**-structure can be subjected to **emboss** processing at the desired positions of all of the **rollers**, and the high safety to forgery and various designs are enabled.

- COPYRIGHT: (C)2006,JPO&NCIPI

7/11 © EPODOC / EPO

- PN - [JP2005346029](#) A 20051215
- PR - TW20040116220 20040604
- AP - JP20040336043 20041119
- DT - I
- CCI - [G02F1/133305](#) ; [G02F1/13378](#)
- FI - G02F1/1337&500
- FT - 2H090/HA16; 2H090/HB07Y;
2H090/HC06; 2H090/HC15;
2H090/HD14; 2H090/IB03;
2H090/LA01; 2H090/MB12;
2H090/MB14; 2H290/AA04;
2H290/AA15; 2H290/AA33;
2H290/BF13; 2H290/BF19;
2H290/BF24; 2H290/BF81
- PA - IND TECH RES INST
- TI - METHOD OF LIQUID CRYSTAL
ALIGNMENT FOR FLEXIBLE LIQUID
CRYSTAL WITH MICROSTRUCTURE
- AB - PROBLEM TO BE SOLVED: To
provide a method of liquid
crystal alignment for a flexible
liquid crystal display with
microstructures that
manufacture the
microstructures, by adding
several kinds of liquid crystal
alignment techniques to
manufacturing stages of a **roll**
to **roll**-type **micro**-structure



liquid crystal display.

- SOLUTION: The method of liquid crystal alignment for the flexible liquid crystal display with the **micro**-structures includes the steps of coating a **thermoplastic** material 10 onto a conductive **film** 12; heat-**embossing** a plurality of microstructures formed by a die 14, wherein the surface of the die forms the plurality of microstructures; and aligning the plurality of microgrooves with support wall and groove alignment effect.
- COPYRIGHT: (C)2006,JPO&NCIPI

8/11 © EPODOC / EPO

- PN - [JPS6152361](#) A 19860315
- PNFP - JPH0450384B B2 19920814
- PR - JP19840173174 19840822
- AP - JP19840173174 19840822
- DT - I
- CT - || STSE (A)
[JPS4810175](#) A 00000000 [];
[JPS5482161U](#) U 19790611 []
- CCI - [C23C14/20](#) ; [C23C14/562](#)
- FI - C08J7/00&Z; C08J7/06&Z; C23C14/56; C23C14/56&A
- FT - 4F006/AA35; 4F006/AB73; 4F006/CA02; 4F006/DA01; 4F006/DA05; 4F006/EA02; 4F073/AA04; 4F073/AA06; 4F073/AA10; 4F073/AA28; 4F073/BA24; 4F073/BB01; 4F073/BB11; 4F073/CA49; 4F073/GA01; 4F073/GA05; 4F073/HA10; 4K029/AA11; 4K029/AA25; 4K029/AA29; 4K029/BA24; 4K029/BB04; 4K029/BC06; 4K029/BC09; 4K029/BC10; 4K029/BD09; 4K029/BD11; 4K029/CA01; 4K029/DC32; 4K029/DC34; 4K029/DC39; 4K029/EA03; 4K029/EA08; 4K029/JA02; 4K029/KA03
- PA - (A)
TEIJIN LTD
- TI - (A)
FORMATION OF THIN **FILM**
- AB - (A)
PURPOSE:To transfer smoothly a long-sized high-**polymer film** and to form stably a **film** thereto by providing **micro**-ruggedness to the ends of a substrate consisting of said **film** transferred by a **roll-to-roll** system and bringing the flat part of the substrate into tight contact with a support. CONSTITUTION:The substrate 40 consisting of the long-sized high-**polymer film** is transferred by the **roll-to-roll** system using a let-off **roll** 41a, a supporting **roll** 41b and a take-up **roll** 41c in a vacuum vessel 10. Electric power is

supplied between the anode and the cathode and targets T1, T2 are sputtered to form the **film** on the substrate 40. **Embossed** parts 40a of the **micro**-ruggedness are provided to both ends of the substrate 40 and the flat part 40b thereof is brought into tight contact with the **roll** 41b. The height of the ruggedness is preferably about 5-10% of the **film** thickness and the **film** 40 consists preferably of polyethylene terephthalate, etc.

9/11 © EPODOC / EPO

- PN - [GB1076177](#) A 19670719
- PR - US19630320554 19631031
- AP - GB19640042768 19641020
- DT - **
- CCI - [C08J9/28](#) ; [C09D127/06](#) ; [D06N3/06](#) ; [D06N3/14](#)
- CLC - [C09D127/06](#) , [C08L2666/28](#) , INV
- CCA - [C08J2201/0544](#) ; [Y10S264/13](#)
- PA - GOODRICH CO B F
- TI - Improvement in production of **micro** porous films and coatings
- AB - A microporous **film** is formed by directing on to a smooth non-porous casting surface a spray of a solution of a **polymer** in a solvent and a spray of a non-solvent for the **polymer**, the non-solvent being miscible in all proportions with the solvent, the sprays coinciding at or before striking the casting surface. The solvent and non-solvent are then removed. The **polymer** is coagulated to form a microporous coating on the casting surface and most of the **polymer** solvent is flushed away in the form of a solvent-non-solvent mixture. The remaining **polymer** solvent is dissolved out from the coating by means of a liquid miscible with the **polymer** solvent, but not a solvent for the **polymer**. The coating is then dried and stripped from the casting surface as a microporous **film**. The polymers used are preferably linear polyurethane condensation polymers such as polyesterurethanes and polyalkyleneetherurethanes. Polyvinyl chloride, polyalkyl acrylates, polyacrylonitrile and copolymers thereof and mixtures of vinyl polymers with linear polyurethanes may be used. The **polymer** solvent may be N, N1-dimethyl formamide, dimethyl sulphoxide, tetrahydrofuran or tetramethylurea. The non-solvent is preferably water, but may be ethylene glycol or glycerol. The microporous coating may be deposited in a porous substrate to form a microporous laminate layer which may be passed over smooth or **embossing rolls**, compacted, passed through a water bath to remove residual **polymer** solvent and finally passed through a drying chamber or over drying **rolls**. The laminates may be used as leather substitutes. A continuous reciprocating traverse motion may be imparted to the coincident spray until a layer of **polymer** of the desired thickness is formed on the substrate. In two examples a non-woven fabric of 3-denier polypropylene fibre is coated with polyesterurethane by directing on to the fabric a spray of the **polymer** solution and a spray of water and in another example a non-woven polyterephthalate ester is coated in the same manner. ALSO: A microporous **film** is formed by directing on to a smooth non-porous casting surface a spray of a solution of a **polymer** in a solvent and a spray of a non-solvent being miscible in all proportions with the solvent, the sprays coinciding at or before striking the casting surface. The **polymer** is coagulated to form a microporous coating on the casting surface and most of the **polymer** solvent is flushed away in the form of a solvent-non-solvent mixture. The remaining **polymer** solvent is dissolved out from the coating by means of a liquid miscible with

the **polymer** solvent, but not a solvent for the **polymer**. The coating is then dried and stripped from the casting surface as a microporous **film**. The polymers used are preferably linear polyurethane condensation polymers such as polyesterurethanes and polyalkyleneetherurethanes. Polyvinyl chloride, polyalkyl acrylates, polyacrylonitrile and copolymers thereof and mixtures of vinyl polymers with linear polyurethanes may be used. The **polymer** solvent may be N,N-dimethyl formamide, dimethyl sulphoxide, tetrahydrofuran or tetramethylurea. The non-solvent is preferably water, but may be ethylene glycol or glycerol. The microporous coating may be deposited on a porous substrate to form a microporous laminate layer which may be passed over smooth or **embossing rolls**, compacted, passed through a water bath to remove residual **polymer** solvent and finally passed through a drying chamber or over drying **rolls**. The laminates may be used as leather substitutes.

10/11 © EPODOC / EPO

PN - [GB1325928](#) A 19730808

PR - US19690867762 19691020; US19690843425 19690722

AP - GB19700035445 19700722

DT - **

CCI - [C08J9/365](#) ; [C08J9/28](#) ; [D06N3/0065](#) ; [D06N3/0077](#) ; [D06N3/145](#)

CCA - [C08J2375/04](#)

PA - INMONT CORP

TI - SURFACE TREATMENT OF MICROPOROUS MATERIALS

AB - 1325928 Microporous coating INMONT CORP 22 July 1970 [22 July 1969 20 Oct 1969] 35445/70 Heading B2E A sheet material has at least a surface zone of **micro**-porous polymeric material, the micropores of which when viewed in a cross-section perpendicular to the plane of the surface zone being at least one micron across, the surface zone being provided with an adherent layer of coagulated polymeric material which transmits water vapour and has less than 20% of its volume occupied by pores which when viewed in a cross-section perpendicular to the plane of the adherent layer are above 0.3 microns across, the adherent layer bridging and covering **micro**-pores which pass through the surface of the first zone, the adherent surface layer being up to 30 microns thick. The micropores in the surface zone may be elongated by compression and largely composed of micropores 5-50 microns across. Preferably the sheet material is free of fibrous reinforcement. The surface zone and the adherent layer may comprise an elastomeric polyurethane containing 0-40% by weight of other high **polymer** material, the polyurethane materials of the surface zone and the adherent layer having an intrinsic viscosity of at least 0.7. The sheet material may be produced by providing a sheet material having a water vapour transmission of at least about 100 g/m²/24 hours and having at least one surface zone of **micro**-porous elastomeric polyurethane material with **micro**-pores which are over one micron in diameter passing through the outer surface of the zone, wetting the surface zone with a liquid and applying to the outer surface of the surface zone a solution of elastomeric polyurethane material in a solvent for the elastomeric material of the surface zone, the liquid being a non-solvent for the elastomeric material of the solution and of the surface zone and being a coagulant for the solution. The solution of polyurethane may be pigmented and may be applied by spraying or by rotogravure printing as fine closely spaced spots, or by intaglio printing. The pigmented adherent layer may be oversprayed

in an uneven pattern with a second pigmented solution of a **polymer** in a solvent for the polyurethane of the adherent layer, the second pigmented solution being of a darker colour than the first solution and being deposited in a pattern of discreet small non-uniform areas, the macrodistribution of such areas being also non-uniform. A solvent for the polyurethane of the adherent layer may be applied to form a fused glossy upper surface on the adherent layer. Before or after the gloss producing treatment, the sheet may be subjected to a heat treatment under such conditions that shrinkage occurs. The adherent layer, before or after fusing with solvent, may also be pressed against a heated solid surface at a temperature below the softening temperature of the polyurethane of the adherent layer to impart a grained or a glossy effect, e.g. by applying pressure to a smooth strippable **film** in contact with the adherent layer, preferably using a heated **embossing roll**. Polyurethane materials mentioned for the **micro**-porous sheet are polyurethane per se, blends of polyurethanes and other high polymers such as vinyl chloride-vinyl acetate copolymer, butadieneacrylonitrile copolymer. Examples of other polymers for use in the **micro**-porous layer and in the coagulated layer are given in U.S.A. Specifications 3481766 and 3501326. The products are useful as substitutes for shoe upper leather.

11/11 © EPODOC / EPO

- PN - [GB1435551](#) A 19760512
- PR - JP19730047610 19730501; JP19730047611 19730501; JP19720064905 19720630; JP19720130296 19721228; JP19720130297 19721228
- AP - GB19730031015 19730629
- DT - **
- CCI - [C09J7/10](#)
- CUI - [B32B7/06](#) ; [B32B27/10](#)
- CUA - [B32B2405/00](#)
- PA - NIPPON KAKOH SEISHI KK
- TI - SELF-STICKING MATERIAL
- AB - 1435551 Laminates NIPPON KAKOH SEISHI KK 29 June 1973 [30 June 1972 28 Dec 1972 (2) 1 May 1973 (2)] 31015/73 Heading B5N [Also in Divisions B2 and C3] A self-sticking material comprises a selfsticking **film** prepared from an ethylene-vinyl acetate copolymer/vinyl chloride graft **polymer**, polyvinyl ether/vinyl chloride graft **polymer** or polyacrylic ester/vinyl chloride graft **polymer** or mixture thereof, laminated to a base sheet and/or releasing paper. The self-sticking material may be stuck on a smooth surface, e.g. a polished glass, synthetic **plastic** or steel plate, or a **micro**-roughened surface, e.g. frosted glass or paper, and subsequently peeled off the surface. The proportion by weight of vinyl chloride to ethylene-vinyl acetate copolymer in the ethylene-vinyl acetate/vinyl chloride copolymer may be 20 to 80 : 80 to 20 and the proportion by weight of ethylene to vinyl acetate may be 20 to 60 : 80 to 40. The graft **polymer** may be used in admixture with a plasticizer or with a plasticizer and a tackifier, the plasticizer preferably be present in an amount of 1-100 parts by weight and the tackifier in an amount of 5-200 parts by weight, per 100 parts by weight of the graft **polymer**. Suitable plasticizers are dibutyl, dioctyl and di(2-ethylhexyl)phthalates, di(2-ethylhexyl)adipate, sebacate and azelate, tri(2-ethylhexyl)- phosphate, diphenyl-2-ethyl hexyl phosphate, triphenyl phosplate, polyesters, butyl phthetyl butyl glycolate and methyl acetyl microleate, and suitable tackifiers are rosin modified rosin,

polyterpene resins, aliphatic hydrocarbon resins and phenol resins. The self-sticking films may also contain heat stabilizers, lubricants, U.V. absorbers and pigments. A self-sticking **film** may be laminated on both sides of a base sheet and releasing paper laminated on both sides thereof. Alternatively self-sticking **film** may be laminated on one side of the base sheet and pressure sensitive adhesive on the other side of the base sheet, releasing paper being laminated on the pressure sensitive adhesive. The selfsticking **film**, which may have a thickness of 10-200 Å, may be applied to the base sheet or releasing paper by use of a calender, extruder or coater, e.g. an air-knife, reverse **roll**, or blade coater, preferably in the form of a solution. The material may be printed and/or **embossed**. The base sheet may be paper, regenerated cellulose **film**, woven or non-woven fabric, metal foil or polyvinyl chloride, acrylic, polyimide, polystyrene or polyester resin **film**, adhesion being assisted by surface oxidation or the use of an adhesive, e.g. nitrile rubber, polychloroprene, polyvinyl acetate, epoxy resin, polyurethanes, ethylene/vinyl acetate copolymer and vinyl chloride/vinyl acetate copolymer.