

Search history

Search 1: recycling and separating aluminum and (plastic or polymer) (Results 52)
Search 2: 1 and (wast* or resid* or reus*) (Results 47)
Search 3: 2 and (treat* or filt* or solvent) and tac=(aluminum or metal) (Results 32)
Search 4: (3) AND IPC=(B29 OR B09 OR B01 OR B07 OR B02) (Results 26)
Search 5: (3) AND IPC=(B29 OR B09 OR C08 OR B07 OR B02) (Results 26)

Title: PROCESS FOR **RECYCLING** BY SEPARATING THE CONSTITUENTS OF ALUMINIZED AND PLASTIFIED PACKAGING, CARTONED OR NOT, AND CORRESPONDING EQUIPMENT

Abstract: The present patent refers to a process for the **recycling** and recovery of **waste**, particularly that of plastified and aluminized packaging, cartoned or not, by means of a method and equipment for extracting and separating the main components present in them for the recovery of **waste**, avoiding environmental pollution, **recycling** of **waste** constituents, and recovery of constituents: **Plastic**, **aluminum** and paper in their original form, with the steps A, B, C, D, E, F, G, H, I, J, L, M, O, P, Q e R, bringing advantages of obtaining **reusable** grade **polymer**; obtaining isolated **aluminum**; to make use of a low cost and low energy consuming **solvent**; to allow the pulp cellulose to be **recycled** in the production of paperboard for boxes, to be incorporated as part of a mechanical pulp load or even to be incorporated to the bleaching process; to have lower processing and investment costs and to have a lower cost/benefit ratio.

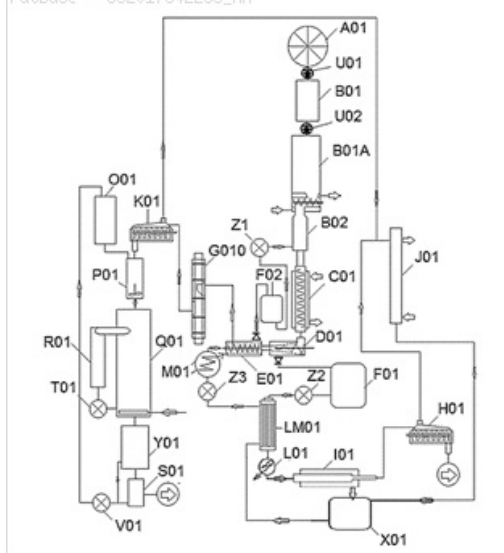
Classifications:

International (IPC 8-9): B03B1/00 B03B9/00 B09B3/00 B09B5/00 B29B17/02 C08J11/06 C08J11/08 C08J11/18 C08J11/22 C22B1/00 C22B21/00 F27D11/06 (Advanced/Invention); B29K705/02 C08L23/06 C08L23/10 C22C21/00 F27D11/06 (Advanced/Non-Invention)

International (IPC 1-7): B29B17/02 C08J11/18 C08J11/22 C22B21/00

CPC: Y02W30/701 B03B9/00 B03B1/00 B29B17/02 C22B21/0069 B09B3/0016 B29B2017/0286 C22C21/00 F27D11/06 B29K2705/02 C08J11/08 C08J11/06 B29B2017/0251 B29B2017/0268 B29B2017/0293 C08J2323/06 C08J2323/10 Y02P10/253

PatBase - US2017342233_AA



Family:

Publication number	Publication date	Application number	Application date
AU2015349557 AA	20160526	AU20150349557	20151118
BR102014028989 A2	20171107	BR20141028989	20141120
BR102016016510 A2	20161227	BR20161016510	20160715
BR112016016510 A2	20180605	BR20161116510	20151118
CA2968244 AA	20170518	CA20152968244	20151118
CL2017001299 A1	20171211	CL20170001299	20170519
CN107001683 A	20170801	CN201580063268	20151118
CO20170005965 A2	20170831	CO20170005965	20170616
EA201700269 A1	20180531	EA20170000269	20151118
EP3222657 A1	20170927	EP20150861537	20151118
EP3222657 A4	20180822	EP20150861537	20151118
ID201803460 A	20180406	ID2017P0003836	20151118
IN201717021206 A	20171201	IN201717021206	20170616
JP2018503733 T2	20180208	JP20170545989T	20151118
KR20170097046 A	20170825	KR20177016902	20151118
MX2017006613 A1	20180126	MX20170006613	20151118
PE08892017 A1	20170707	PE20170000886	20151118
SG10201806145P A1	20180830	SG20181006145	20151118
SG11201704074R A1	20170629	SG20171104074	20151118
US2017342233 AA	20171130	US20150528120	20151118
WO16077904 A1	20160526	WO2015BR50222	20151118

Priority:

BR20141028989 20141120 BR20151028864 20151117 WO2015BR50222 20151118
BR20161016510 20160715

Probable Assignee: JUAREZ SOUZA DE OLIVEIRA

Assignee(s): (std): DE OLIVEIRA JUAREZ SOUZA ; JUAREZ SOUZA DE OLIVEIRA ; OLIVEIRA JUAREZ SOUZA DE

Inventor(s): (std): DE OLIVEIRA JUAREZ SOUZA ; JUAREZ SOUZA DE OLIVEIRA ; OLIVEIRA JUAREZ SOUZA DE

Agent(s): DAVIES COLLISON CAVE PTY LTD; HOPGOODGANIM; INTEGRAL IP; JOHANSSON AND LANGLOIS; MARGARITA CASTELLANOS ABONDANO; HERZOG FIESSER AND PARTNER PATENTANWALTE PARTG MBB; LANNY SETIAWAN MBA MGMT MA LPC MA LMFT; HARAKENZO WORLD PATENT AND TRADEMARK; W P LAI AND CO C O Y F CHONG; DA SILVA EDUARDO PEREIRA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: DISTILLATION REACTOR MODULE

Abstract: The distillation reactor consists of a reactor apparatus with corresponding method of upstream distilling and purification of carbon based liquid or liquidized streams for use as fuels, lubricating oils and or gaseous energy and electricity production. The distillation reactor consolidates the atmospheric and vacuum distillation processes along with desalting, defueling, deasphalting, fractionation, thin/wiped film evaporation and vacuum finishing into an advanced high velocity, high volume single reactor system. Carbon based feed streams include either a single stream or preferably, a combined stream of liquefied coal slurries, crude oils, spent oils, Pyrolytic oils and or peat or other plant carbon derived liquids, vapors, mists or gases. The method further consists of controlling the mix ratio, flow velocity, sequential fractionation and **filtration** technology and processing atmospheres of the carbon feeds with the reactor apparatus. The combined apparatus and method allows for a refinery to consistently produce a finished barrel of oil well below traditional costs and at a higher efficiency than current art and prior art.

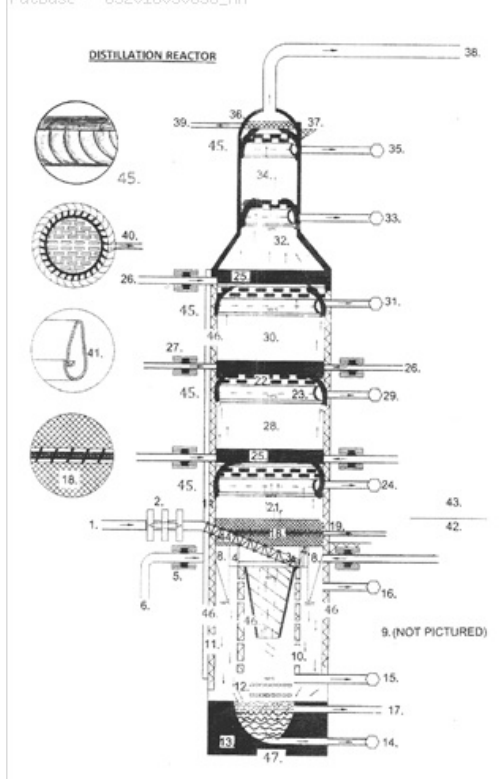
Classifications:

International (IPC 8-9): B01D3/00 B01D3/06 B01D3/10 B01D3/26 B01D3/32 B01D39/20 B01D53/48 B01D53/62 B01D59/04 B01J B01J19/24 B01J19/26 B01J2/00 B01J6/00 B01J8/24 B02C23/00 B03C1/00 B22F3/10 B22F9/00 B29B17/00 C01B17/027 C01B17/74 C02F1/00 C10B49/12 C10G1/00 C10G11/18 C10G33/00 C10G45/00 C10G57/00 C10G7/00 C10G7/06 C10G9/04 C10J3/72 C10L9/10 C22B13/00 C22B15/00 C22B21/00 C22B7/00 C22B9/00 F03G7/00 F27B17/00 G21C1/02 G21D5/00 H01M10/54 H01M8/00 H02K55/02 H02K7/09 (Advanced/Invention)

CPC: Y02E30/40 G21D1/00 B01J19/0093 B01J2219/00864 B01J2219/00867 B01J2219/00871 C01G21/02 C01B3/32 C01B13/02 C01B17/02 C01B2203/0205 C01B2203/0283 C01B2203/043 C01B2203/0445 C01B2203/0475 C10G1/02 C10G1/10 C10G31/08 C10G75/04 Y02P20/129 B09B5/00 Y02P30/446 Y02E30/30 B01D3/10 B01D3/006 B01D3/06 B01D39/2027 F03G7/00 B01D3/009 C10G7/06 G21C1/00 G21D5/00 C10G7/00 C10G57/00 C10G7/003 C10L9/10 C10J3/72 C10G1/00 C01B17/027 C01B17/74 B01J6/008 B01J2/00 B01J19/24 B01D53/48 B01D53/62 C22B9/00 F27B17/00 C02F1/00 C22B7/00 B29B17/00 B22F3/10 B22F9/00 C22B21/00 C22B15/00 C22B13/00 H01M8/00 H01M10/54 H02K55/02 H02K7/09 B02C23/00 B03C1/00 C10L2290/544 C10J2300/093 C10J2300/0946 B22F2009/001 C01B17/48 C10G11/18 C10G33/00 C10G45/00 Y02E20/16 Y02E20/18 Y02W10/33 Y02W10/37 Y02W30/84 C01B32/05 C01B32/20 C01B32/50 Y02P10/143

US: 196/46 202/232 209/213 210/251 241/301 241/65 266/160 310/90.5 422/129 422/170 422/187 422/198 422/255 423/522 423/567.1 429/49 505/163 505/166 60/698

PatBase - US2016030856_AA

**Family:**

Publication number	Publication date	Application number	Application date
CA2907677 AA	20150921	CA20142907677	20140318
EP2969180 A2	20160120	EP20140762668	20140318
EP2969180 A4	20161005	EP20140762668	20140318
IL242590 A0	20160131	IL20140242590	20140318
JP2016512165 T2	20160425	JP20160502609T	20140318
US2016030856 AA	20160204	US20140776734	20140318
US2016032904 AA	20160204	US20140776736	20140318
US2016045841 AA	20160218	US20140776732	20140515
WO14146129 A2	20140918	WO2014US31118	20140318
WO14146129 A3	20150129	WO2014US31118	20140318
WO14153570 A2	20140925	WO2014US38290	20140515
WO14153570 A3	20150219	WO2014US38290	20140515
WO14153570 A9	20150806	WO2014US38290	20140515
WO14200605 A2	20141218	WO2014US31116	20140318
WO14200605 A3	20150326	WO2014US31116	20140318
WO14200605 A4	20150430	WO2014US31116	20140318
WO14200605 A9	20150205	WO2014US31116	20140318

Priority:

US20130800209P 20130315	US20130801170P 20130315	US20130801491P 20130315
US20140776734 20140318	US20140776736 20140318	WO2014US31118 20140318
WO2014US31116 20140318	US20140776732 20140515	WO2014US38290 20140515

Probable Assignee: TRANSTAR GROUP LLC**Assignee(s):** (std): BRADLEY RANDALL ; KALPAN ALLEN ; KAPLAN ALLEN ; TRANSTAR GROUP LTD**Assignee(s):** TRANSTAR GROUP LLC**Inventor(s):** (std): KAPLAN ALLEN ; KALPAN ALLEN ; BRADLEY RANDALL**Agent(s):** ADE AND CO INC; NELLIGAN OBRIEN PAYNE LLP; PERRONACE ANDREA; HERSHKOVITZ ABRAHAM ET AL; HERSHKOTIZ ABRAHAM ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: INTEGRATED METHOD AND SYSTEM FOR **RECYCLING WASTE** MATERIAL

Abstract: Integrated methods and systems for **recycling waste** material including **waste** paper are provided, the methods including **treating** the **waste** material in the pressure vessel at an elevated processing temperature and an elevated processing pressure to form a **treated waste** material including a substantially re-pulped **waste** paper; discharging the **treated waste** material from the pressure vessel; and thereafter separating and diluting the **treated waste** material to dilute a portion including the substantially re-pulped **waste** paper to from about 1 percent to about 20 percent by weight solids. The recovered paper pulp fraction and substantially fiber-free recoverable/**recyclable plastics** and **metals** may be further separated and used as feedstock in a variety of subsequent processes.

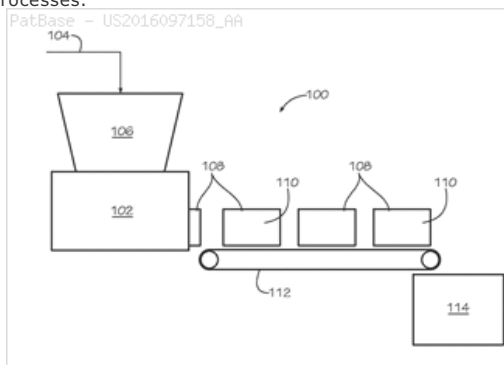
Classifications:

International (IPC 8-9): B03B5/00 B03B7/00 B03C1/00 B03C1/24 B07B1/00 B07B1/22 B07B1/28 B07C5/342 B09B3/00 B09B5/00 B29B17/02 B29B17/04 C02F11/08 C02F3/28 C08J11/06 C08J11/10 D21B1/02 D21B1/32 D21C11/00 D21C5/02 D21C7/00 D21C9/18 D21D1/40 D21D5/02 D21F1/00 (Advanced/Invention); D21C5/02 (Core/Invention)

International (IPC 1-7): B09B3/00 D21C5/02

CPC: D21C7/00 D21B1/02 D21C5/02 Y02W30/648 D21B1/32 Y02E50/343

US: 162/190 162/233 162/264



Family:

Publication number	Publication date	Application number	Application date
AU2015328576 AA	20160414	AU20150328576	20150922
BR112017007129 A2	20171219	BR20171107129	20150922
CA2960310 AA	20170303	CA20152960310	20150922
CN107075798 A	20170818	CN201580053324	20150922
EP3204550 A1	20170816	EP20150848962	20150922
EP3204550 A4	20180516	EP20150848962	20150922
EP3366834 A1	20180829	EP20180167901	20150922
ID201802657 A	20180316	ID2017P0002177	20150922
IN201737007128 A	20170519	IN201737007128	20170228
JP2017531742 T2	20171026	JP20170518326T	20150922
KR20170066396 A	20170614	KR20177009204	20150922
MX2017004554 A1	20171214	MX20170004554	20150922
TH175887 A	20180517	TH20171001913	20150922
US2016097158 AA	20160407	US20150861551	20150922
US2017335513 AA	20171123	US20170665649	20170801
US9752279 BB	20170905	US20150861551	20150922
WO16057213 A1	20160414	WO2015US51464	20150922

Priority:

US20140060150P 20141006 EP20150848962 20150922 US20150861551 20150922
WO2015US51464 20150922 US20170665649 20170801

Probable Assignee: GEORGIA PACIFIC CONTAINERBOARD LLC

Assignee(s): (std): GEORGIA PACIFIC CONTAINERBOAR LLC ; GEORGIA PACIFIC CONTAINERBOARD LLC ; GEORGIA PACIFIC CONSUMER PROD

Assignee(s): GEORGIA PACIFIC CONSUMER PRODUCTS LP ; GEORGIA PACIFIC LLC ; HENRIKSSON DAVID CHRISTER ; TOPPING PAUL ; LUCAS BRADLEY E ; WINKLER WAYNE FREDERICK

Inventor(s): (std): BRADLEY E LUCAS ; DAVID CHRISTER HENRIKSSON ; HENRIKSSON DAVID CHRISTER ; LUCAS BRADLEY ; LUCAS BRADLEY E ; PAUL TOPPING ; TOPPING PAUL ; WAYNE FREDERICK WINKLER ; WINKLER WAYNE F ; WINKLER WAYNE FREDERICK

Agent(s): PHILLIPS ORMONDE FITZPATRICK; BLAKE CASSELS AND GRAYDON LLP; GRUENECKER PATENT U RECHTSANWAELTE PARTG MBB; DR INDA CITRANINDA NOERHAD1 MA; YKI PATENT ATTORNEYS; YKI INTELLECTUAL PROPERTY ATTORNEYS; PAPPAS PETER G ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD FOR RECOVERING **METAL** COPPER FROM COATED COPPER WIRES

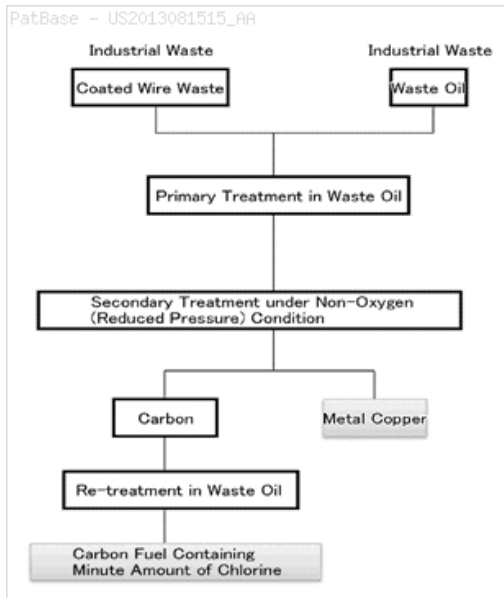
Abstract: [Object] A technique is provided which selectively recovers a useful substance from **waste** including a chlorine-containing synthetic resin and **metal** copper in a mixed state. [Solving Means] In a method for recovering **metal** copper from coated copper-wire **waste**, the method includes the steps of heat-**treating** the **waste** in form of coated copper wires, each having a coating material made of a chlorine-containing synthetic resin, in oil or under a non-oxygen condition, thereby carbonizing the coating material and reducing a chlorine content of the coating material, and separating the coating material and the copper wire from each other, thereby recovering the copper wire. [Advantageous Effect] Because of enabling the chlorine-containing synthetic resin to be **treated** without generating dioxin, the present invention is useful in recovering the **metal** copper from the coated-wire **waste**.

Classifications:

International (IPC 8-9): B09B3/00 C22B1/00 C22B15/00 C22B7/00 C23G1/00 H01L21/02 (Advanced/Invention)

CPC: C22B15/00 C23G1/00 H01L21/02079 C22B15/0056 Y02P10/22

US: 134/2 148/210 148/223 75/403 75/638 75/715



Family:

Publication number	Publication date	Application number	Application date
JP2013076121 A2	20130425	JP20110215914	20110930
JP5134719 B1	20130130	JP20110215914	20110930
US2013081515 AA	20130404	US20120682916	20121121
US8747519 BB	20140610	US20120682916	20121121

Priority:

JP20110215914 20110930

Probable Assignee: POLYTECH KAGAWA CO LTD

Assignee(s): (std): INST NAT COLLEGES TECH JAPAN ; INST OF NAT COLLEGES OF TECHNO ; POLYTECH KAGAWA CO LTD

Assignee(s): OF NATIONAL COLLEGES OF TECHNOLOGY JAPAN INST ; POLYTECH KAGAWA CO ; INSTITUTE OF NATIONAL COLLEGES OF TECHNOLOGY JAPAN ; INSTITUTE OF NATIONAL COLLEGES OF TECHNOLOGY JP ; OF NATIONAL COLLEGES OF TECHNOLOGY JP INST

Inventor(s): (std): DEGUCHI MITSUNORI ; OKANO HIROSHI ; SAJIKI GO ; SAJIKI GOU ; TANIMOTO SADA0

Agent(s): WESTERMAN HATTORI DANIELS AND ADRIAN LLP

Title: METHOD AND APPARATUS FOR **RECYCLING** PACKAGING MATERIAL

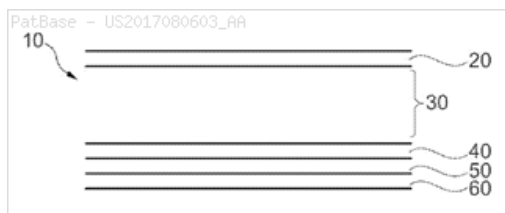
Abstract: A method for **recycling** of packaging material (300) is disclosed. The packaging material (300) comprises a multiple layer material (10) comprising a **metal** layer (50), at least one **polymer** layer (20, 40, 60) and, optionally, a paperboard layer (30). The method comprises placing the **residual waste** in a vat (360) comprising a separation fluid (375) to produce a mixture of **metal** shreds from the **metal** layer (50), **plastic** shreds from the **polymer** layer (20, 40, 60) and **residual** components. The separation fluid comprises a mixture comprising at least one swelling agent and at least one carboxylic acid.

Classifications:

International (IPC 8-9): B22F3/02 B29B17/02 B32B43/00 C08J11/06 C08J11/08 C08J7/02 (Advanced/Invention)

CPC: C08J11/06 B32B43/006 B29L2007/008 B29L2009/003 Y02W30/622 Y02W30/701 C08J7/02 B22F3/02 C08J2323/00 B29B17/02 B29B2017/0293 C08J11/08

US: 521/47



Family:

Publication number	Publication date	Application number	Application date
EP3140342 A1	20170315	EP20150722689	20150505
GB201407891 A0	20140618	GB20140007891	20140505
GB2525858 A1	20151111	GB20140007891	20140505
US2017080603 AA	20170323	US20150309199	20150505
WO15169801 A1	20151112	WO2015EP59856	20150505

Priority:

GB20140007891 20140505 WO2015EP59856 20150505

Probable Assignee: SAPERATEC GMBH

Assignee(s): (std): SAPERATEC GMBH

Inventor(s): (std): KERNBAUM SEBASTIAN ; KERNBAURN SEBASTIAN ; LOVIS FLORIAN ; SEIBT HORST

Inventor(s): FLORIAN LOVIS ; HORST SEIBT ; SEBASTIAN KERNBAURN

Agent(s): HARRISON ROBERT JOHN; HARRISON JOHN FORD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

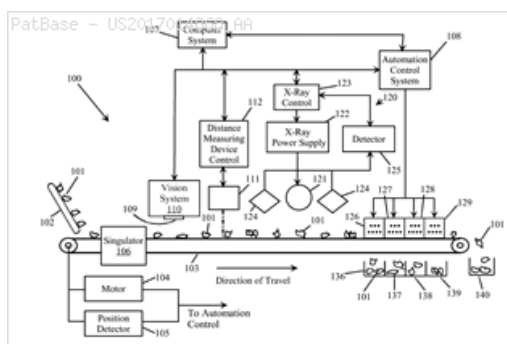
Abstract: A material sorting system sorts materials, such as scrap pieces composed of unknown **metal** alloys, as a function of their detected x-ray fluorescence. The x-ray fluorescence may be converted into an elemental composition signature that is then compared to an elemental composition signature of a reference material in order to identify and/or classify each of the materials, which are then sorted into separate groups based on such an identification/classification. The material sorting system may include an in-line x-ray tube having a plurality of separate x-ray sources, each of which can irradiate a separate stream of materials to be sorted.

International (IPC 8-9): B07C5/02 B07C5/10 B07C5/34 B07C5/342
B07C5/36 B07C5/38 G01B11/04 G01N23/223
G06N3/08 (Advanced/Invention)

CPC: B07C5/3416 B07C5/10 G01B11/043 G01N23/223

G01N2223/076 G01N2223/615 B07C5/34 B07C5/346 G01N2223/643
B07C5/3422 B07C5/368 G06N3/08

US: 209/586



Publication number	Publication date	Application number	Application date
CN108136445 A	20180608	CN201680053690	20160718
EP3322544 A1	20180523	EP20160825313	20160718
IN201817002365 A	20180427	IN201817002365	20180119
US2017014868 AA	20170119	US20160213129	20160718
US2018243800 AA	20180830	US20180963755	20180426
WO17011835 A1	20170119	WO2016US42850	20160718

US20150193332P 20150716	US20160213129 20160718	WO2016US42850 20160718
US20170490219P 20170426	US20180963755 20180426	

Assignee(s): (std): UHV TECH INC

Assignee(s): UHV TECHNOLOGIES INC

Inventor(s): (std): DAS SUBODH ; GARCIA JR MANUEL GERARDO ; GARCIA MANUEL GERARDO ; KUMAR NALIN ; TYAGI KANISHKA

Agent(s): HGF LTD: KORDZIK KELLY K

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TH TJ TM TN TR TT TZ UA UB US UZ VC VN ZA ZM ZW

Title: METHOD OF RECLAIMING MULTILAYERED FILM **WASTE**

Abstract: Disclosed is a method of reclaiming a multilayered film which comprises a **plastic** layer including polyester (PET), polypropylene (PP), and polyethylene (PE) as main components, and an **aluminum** layer. The method comprises selective dissolution of **aluminum**, separation using a difference in specific gravity, selective extrusion using a difference in melting point, and selective dissolution using an organic **solvent**.

Classifications:

International (IPC 8-9): B01D59/22 B03B5/30 B09B3/00 B09B5/00 B29B17/00 B29B17/02 B29B17/04 C08J11/04 C08J11/06 C08J11/08 C08J11/20 C08J11/26 (Advanced/Invention); B01D59/22 B03B5/30 B09B3/00 (Advanced/Non-invention); B01D59/00 B03B5/28 B09B3/00 B09B5/00 B29B17/00 B29B17/02 B29B17/04 C08J11/00 (Core/Invention)

International (IPC 1-7): B01D59/22 B03B5/30 B09B3/00

CPC: Y02W30/524 Y02W30/622 Y02W30/625 Y02W30/701 Y02W30/801 B29B2017/0203 B29B2017/0244 B29B2017/0255 B29B2017/0293 B29B2017/0296 B29K2023/12 B29K2067/00 B29K2705/00 B29K2705/02 B29L2007/008 B29L2009/003 B29B17/02 B29B17/0404 B29B17/0412 B29K2023/06 B29K2023/083 B29K2705/08 B29L2007/00 C08J11/06 C08J11/08 B09B3/0016

European: B29B17/02 C08J11/06 C08J11/08 L29B17/02B L29B17/02Z1F2 L29B17/02Z2 L29B17/02Z9 L29B17/02Z9A L29B17/04C L29B17/04D L29K23/06 L29K23/08B L29K23/12 L29K67/00 L29K705/00 L29K705/02 L29K705/08 L29L7/00 L29L7/00G L29L9/00C

US: 521/40 521/40.5 521/40P 521/47 521/48 521/48.5

Family:

Publication number	Publication date	Application number	Application date
AT440896 E	20090915	AT20050028722T	20051230
DE602005016208 D1	20091008	DE200560016208T	20051230
EP1683829 A1	20060726	EP20050028722	20051230
EP1683829 B1	20090826	EP20050028722	20051230
JP2006205160 A2	20060810	JP20050378958	20051228
JP4574543 B2	20101104	JP20050378958	20051228
KR100528646 B1	20051115	KR20050006157	20050124
US2006178442 AA	20060810	US20050323103	20051230
US7598297 BB	20091006	US20050323103	20051230
WO06078097 A1	20060727	WO2005KR04674	20051230

Priority:

KR20050006157 20050124

Probable Assignee: GREEN PLATECH CO LTD

Assignee(s): (std): KIM MYEONG JUN ; KOREA IND TECH INST ; KOREAN INST OF IND TECHNOLOGY ; LEE YOUNG CHUL ; LEE HYUNG CHAN ; BODITECHMED INC ; KOREA INST OF INDUSTRIAL TECHNOLOGY KITECH

Assignee(s): GREEN PLATECH CO LTD ; KOREAN INSTITUTE OF INDUSTRIAL TECHNOLOGY ; KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY ; KOREAN INSTITUTE OF INDUSTRIAL TECHNOLOGY CHEONAN SI ; KOREAN INST ; KOREA INST OF INDUSTRIAL TECHNOLOGY ; KOREAN INST INDUSTRIAL TECHNOLOGY ; KOREAN INST OF INDUSTRIAL TECHNOLOGY

Inventor(s): (std): LEE YOUNG CHUL ; LEE YOUNG CHUI ; LEE HYUNG CHAN ; KIM MYEONG JUN

Inventor(s): LEE ; KIM ; KIM MYEONG JUN 301 1108 JUGONG 11 DANIJ ; LEE HYUNG CHAN 112 408 HANSEONG IMDAE APT

Agent(s): LUDERSCHMIDT SCHUELER AND PARTNER; MEDLEN AND CARROLL LLP; CASIMIR JONES SC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: METHOD OF PROCESSING MUNICIPAL **WASTE**

Abstract: A method for processing municipal **waste** substantially reduces the volume of material to be disposed into a landfill by increasing the volume of materials of value collected from the municipal **waste** and by composting the remaining materials to create a salable product. The process includes the removal of materials of value by magnetic devices to extract ferrous materials, by an air classifier to extract light **plastic** materials, by an eddy current mechanism to extract **aluminum** materials, and by a **plastic** sort mechanism to extract large **plastic** materials. Composting can be accomplished with a composting vessel that is located in the process either before the materials of value are removed or afterward. A grinding of the materials before a final screening allows the commercial grade compost to be separated from the materials that are to be sent to the landfill for final disposal. An alternative embodiment of the process heats the **waste** material before processing by utilizing a steam pressure vessel or an autoclave to disintegrate the **waste** material and to destroy any pathogens before materials of value are removed. Large materials can be gasified to create heat energy for use in the heating process. Static pile disintegration of the initially shredded **waste** material will alternatively reduce the volume of the material to be processed.

Classifications:

International (IPC 8-9): B03B9/06 B07B9/00 C05F17/00 C05F17/02 C05F9/02 (Advanced/Invention);

B03B9/00 B07B9/00 C05F17/00 C05F17/02 C05F9/02 (Core/Invention)

International (IPC 1-7): B02C19/12

CPC: Y02W30/43 Y02W30/521 Y02W30/526 Y02W30/528

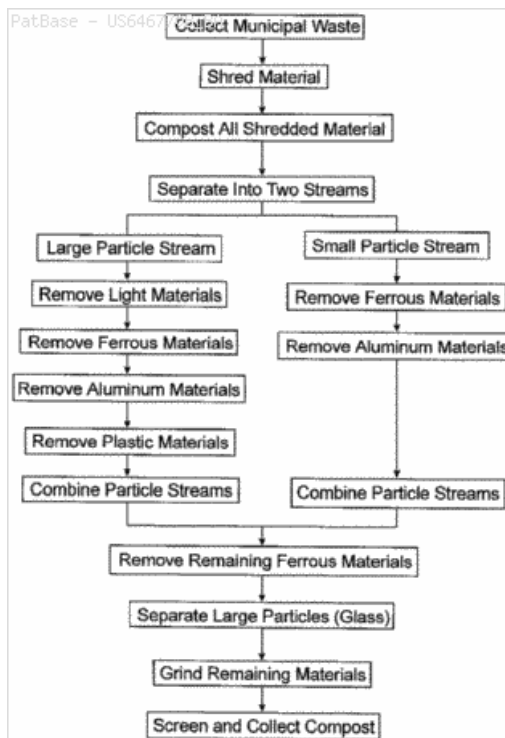
C05F17/0288 B03B9/06 C05F9/02 B07B9/00 C05F17/00

C05F17/0045 Y02P20/145 Y02A40/215

European: B03B9/06 B07B9/00 C05F17/00 C05F17/00K

C05F17/02M C05F9/02

US: 241/23 241/24.14 241/24.15 241/24.18 241/24.19 241/29

**Family:**

Publication number	Publication date	Application number	Application date
US6467708 BA	20021022	US20010775110	20010201
US6945484 BA	20050920	US20010767644	20010123

Priority:

US20000179818P 20000202 US20010767644 20010123 US20010775110 20010201

Probable Assignee:

CAMPBELL WILLIS R

Assignee(s): (std):

CAMPBELL WILLIS R ; TERZINI ROBERT

Inventor(s): (std):

CAMPBELL WILLIS R ; TERZINI ROBERT

Agent(s):

MILLER LAW GROUP PLLC

Title: PROCESS FOR SEPARATING POLYESTER FROM OTHER MATERIALS

Abstract: The present invention is directed to a process for separating polyester, and particularly polyethylene terephthalate, from various contaminants and impurities. In general, the process includes the steps of mixing materials containing polyester with an alkaline composition in a mixer. The mixer imparts sufficient energy to the slurry to provide substantially complete, even coating of the polyester containing materials with the alkaline composition and cause saponification of the outer surface of the polyester with the alkaline composition. After reaction in the mixer, the mixture is heated causing some of the impurities to be chemically modified into a more separable form. After heating, the mixture can be washed with water and the polyester can be easily separated from the remaining impurities. Through the process of the present invention, polyester can be separated and recovered from **waste** materials such as those containing polyvinyl chloride and **aluminum**. The process is also effective at removing coatings adhered to the polyester and at removing entrained organic and inorganic compounds contained within the polyester.

Classifications:

International (IPC 8-9): C08F12/02 C08J11/04 C08J11/06 C08J11/16 C08L27/12 D06M11/00 (Advanced/Invention); C08J11/00 (Core/Invention)

International (IPC 1-7): B03D1/00 C08J11/04 C08J11/06 C08J11/16

CPC: Y02W30/70 Y02W30/705 Y02W30/701 C08J11/16 C08J11/04 C08J2367/02 Y02P20/143

European: C08J11/04 C08J11/06 C08J11/16 M08J367/02

US: 209/172 209/172.5 209/172.500P 521/48 525/199 526/67 528/489 8/115.51 8/130 81/155.1 81/30

Family:

Publication number	Publication date	Application number	Application date
AR034525 AA	20040225	AR2002P102305	20020619
AT497517 E	20110215	AT20020737531T	20020619
CL2002001347 A1	20030905	CL20020001347	20020619
CL46978 B	20101109	CL20020001347	20020619
CR7213 A	20040406	CR20030007213	20031219
DE60239100 D1	20110317	DE20026039100	20020619
EA007591 B1	20061229	EA20040000048	20020619
EA200400048 A1	20040624	EA20040000048	20020619
EP1409575 A1	20040421	EP20020737531	20020619
EP1409575 A4	20041117	EP20020737531	20020619
EP1409575 B1	20110202	EP20020737531	20020619
HR20031060 A2	20040831	HR20030001060	20031218
HR20031060 B1	20120331	HR20030001060	20031218
IL159457 A0	20040601	IL20020159457	20020619
IL159457 A1	20090803	IL20020159457	20020619
IN02015DE2003 A	20060106	IN2003DE02015	20031217
IN228990 B	20090320	IN2003CN02015	20031217
IS7086 A	20031218	IS20030007086	20031218
NO20035601 A0	20031216	NO20030005601	20031216
PL203890 B1	20091130	PL20020367437	20020619
PL367437 A1	20050221	PL20020367437	20020619
RS3604 A	20070410	YU20040000036	20020619
US2003010680 AA	20030116	US20020174760	20020619
US7070624 BB	20060704	US20020174760	20020619
WO02102884 A1	20021227	WO2002US19309	20020619

Priority:

US20010290273P 20010619

US20010299273P 20010619

US20020174760 20020619

WO2002US19309 20020619

Probable Assignee: UNITED RESOURCE RECOVERY CORP

Assignee(s): (std): UNITED RESOURCE RECOVERY CORP ; UNITED RRESOURCE RECOVERY CORP

Assignee(s): UNITED RESOURCE RECOVERY 5396 NORTH BLACKST ROAD CORP ; UNITED RESOURCE RECOVERY 5396 NORTH BLACKSTROAD CORP

Inventor(s): (std): HOLMES III JOHN MITCHELL ; HOLMES JOHN ; HOLMES JOHN M ; HOLMES JOHN M III ; HOLMES JOHN MITCHELL ; III JOHN M HOLMES ; ZINK RICHARD ; ZINK RICHARD P ; ZINK RICHARD PHILIP ; RICHARD P ZINK ; JOHN MIII HOLMES ; HOLMES III JOHN M ; JOHN M III HOLMES

Inventor(s): ZINK RICHAR P ; HOLMES ; III JOHN MITCHELL ; JOHN M HOLMES III ; HOLMES JOHN MIII

Agent(s): SARGENT; BERGMEIER WERNER; REINHOLD COHN AND PARTNERS; DORITY AND MANNING PA

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW

Title: ELECTROCHEMICAL PROCESS TO **RECYCLE** AQUEOUS ALKALI CHEMICALS USING CERAMIC ION CONDUCTING SOLID MEMBRANES

Abstract: A method is provided to **recycle** and synthesize aqueous alkali chemicals from industrial and radioactively contaminated alkali salt based **waste** streams using a two-compartment electrolytic cell having an alkali cation-conductive ceramic membrane. The processes and apparatus provide the capability of **recycling** and synthesizing value added chemicals, including but not limited to, alkali hydroxides.

Classifications:

International (IPC 8-9): B01D11/02 B01D39/20 B09B3/00 C01F7/04 C02F1/46 C02F1/461 C25B1/00 C25B1/16 C25B13/04 C25B9/00 C25B9/08 G21C19/46 G21F9/06 (Advanced/Invention);

B01D39/20 C25B1/00 C25B9/00 (Core/Invention)

CPC: B09B3/00 C25B1/00 C25B15/08 C25B1/10 C25B9/206

C01B25/37 C25B1/16 C02F1/46104 C02F1/46109 C02F2001/46128 C02F2101/006 C02F2201/46115 C02F2201/4618 C04B35/16

C04B35/447 C04B35/462 C04B35/481 C04B2235/3201

C04B2235/3224 C04B2235/3225 C04B2235/3232 C04B2235/3244

C04B2235/3287 C04B2235/3291 C04B2235/3293 C04B2235/447

C25B13/04 G21C19/46 G21F9/06 Y02E60/366 C25B9/08 C25B13/02

C01F7/02 C01P2002/72 C01P2004/03 C01P2004/20 C01P2004/61

Y02W30/883 Y02P20/132

European: C02F1/461B C02F1/461B2 C04B35/16 C04B35/447

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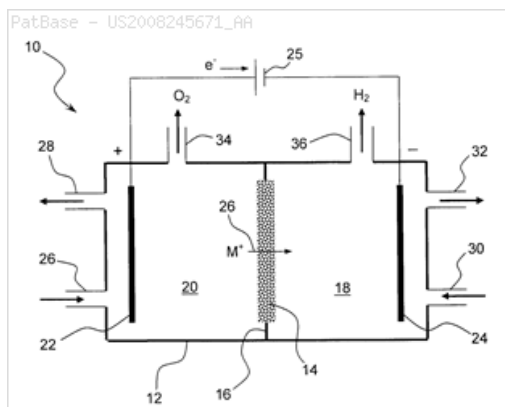
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M04B235/32T M04B235/44P

US: 204/252 204/252S 204/263 205/482 205/498 205/508 205/510



Family:

Publication number	Publication date	Application number	Application date
AU2008236722 AA	20081016	AU20080236722	20080403
AU2012290233 AA	20130207	AU20120290233	20120731
EP2142277 A1	20100113	EP20080727276	20080403
EP2142277 A4	20120104	EP20080727276	20080403
EP2739568 A2	20140611	EP20120819850	20120731
JP2010523821 T2	20100715	JP20100502135T	20080403
US2008245671 AA	20081009	US20080062458	20080403
US2012292200 AA	20121122	US20120562424	20120731
US2013048509 AA	20130228	US20110223045	20110831
WO08124047 A1	20081016	WO2008US04376	20080403
WO13019768 A2	20130207	WO2012US48926	20120731
WO13019768 A3	20130425	WO2012US48926	20120731

Priority:

US20070909735P 20070403	US20080062458 20080403	WO2008US04376 20080403
US20110513825P 20110801	US20110223045 20110831	US20120562424 20120731
WO2012US48926 20120731		

Probable Assignee: CERAMATEC INC

Assignee(s): (std): BALAGOPAL SHEKAR ; CERAMATEC INC ; DUFFEY KEAN ; FLINDERS MARC ; PENDELTON JUSTIN

Inventor(s): (std): BALAGOPAL SHEKAR ; DUFFEY KEAN ; FLINDERS MARC ; PENDELTON JUSTIN

Inventor(s): SHEKAR BALAGOPAL ; JUSTIN PENDELTON ; MARC FLINDERS

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; HARRISON GODDARD FOOTE; HGF LTD; OKADA KAZUHIKO; CERAMATEC INC; FONDA DAVID

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: MECHANICAL GRANULATION PROCESS

Abstract: The present invention relates to a mechanical process for granulating and cold manufacturing of spherical particles of **aluminum** and transformation of turnings, chips "UBC" utility beverage cans and **aluminum** cans into finished products intended for the use into aluminothermy, remelt or foundry. The new process of granulation requires a first equipment for pressing, followed by an equipment for shredding, followed by a granulating equipment for the realization of transformation of raw product into granular spherical finished product. Use of presses, choppers, granulators, separators, cyclones integrated in the process, allows to sort and decontaminate by-products, with possible **recycling** for later use, among which the recasting, aluminothermy and the recovery of many substances entering in the manufacture of a multitude of products used in industry.

Classifications:**International (IPC 8-9):** B02C19/00 B02C23/08 B02C23/14

B22F8/00 B22F9/04 (Advanced/Invention);

B02C19/00 B02C23/00 B22F8/00 B22F9/02 (Core/Invention)

CPC: Y02W30/541 B22F8/00 B22F2009/046 B22F2998/10 C22B1/005

C22B1/24 C22B7/005 C22B21/0007 C22B21/0069 Y02P10/214

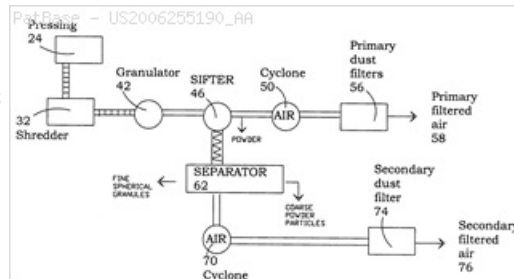
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European: B22F8/00 C22B1/00D C22B1/24 C22B21/00B

C22B21/00F6 C22B7/00C L22F9/04P2 L22F998/10

US: 241/101.4 241/19 241/24.14 241/24.15 241/29 241/29P

241/29S 241/3 241/3P 241/57 241/79.1 241/79.100S

**Family:**

Publication number	Publication date	Application number	Application date
CA2506718 AA	20060123	CA20052506718	20050512
US2006255190 AA	20061116	US20060416413	20060503
US2007114309 AA	20070524	US20070625766	20070122
US7441716 BB	20081028	US20070625766	20070122
US7478770 BB	20090120	US20060416413	20060503

Priority:

CA20052506718 20050512 US20060416413 20060503 US20070625766 20070122

Probable Assignee: ALUGREEN TECHNOLOGY INC**Assignee(s):** (std): ARSENEAULT EMILE ; SIMARD ANDRE

Assignee(s): D'AIDE AU DEVELOPPEMENT DES COLLECTIVITES DU FJORD ; D'AIDE AU DEVELOPPEMENT DES COLLECTIVITES DU FJORD I SOC ; ALUGREEN TECHNOLOGY INC ; ALUMITHERM INT INC ; D AIDE AU DEVELOPPEMENT DES COLLECTIVITES DU FJORD ; D AIDE AU DEVELOPPEMENT DES COLLECTIVITES DU FJORD I SOC ; D'AIDE AU DEVELOPPEMENT DES COLLECTIVITES DU

Inventor(s): (std): ARSENEAULT EMILE ; SIMARD ANDRE**Agent(s):** NA; PAUL BIRON; BUCHANAN INGERSOLL AND ROONEY PC

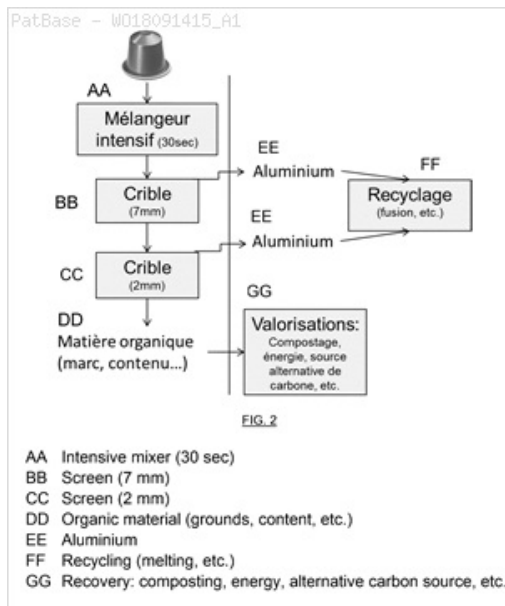
Title: PREPROCESSING OF HOT-DRINK CAPSULES AND COSMETIC-PRODUCT PACKAGING BEFORE **RECYCLING** AND RECOVERY

Abstract: The present invention relates to a method for preprocessing, conditioning, **recycling** and recovering capsules used in the production, under pressure, of hot drinks and packagings of pharmaceutical or cosmetic products, comprising a container and organic **residues**, including the following steps: the capsules or packagings are collected; an intensive rotary mixer is supplied with the capsules or packagings; the capsules or packagings are torn or ripped apart by centrifugation and attrition in the intensive mixer, giving rise to a mixture of container **residues** of various sizes and of organic **residues** liberated from the capsules or packagings; and said mixture is screened in order to separate the container **residues** and the organic **residues**.

Classifications:

International (IPC 8-9): A47J31/44 B03B9/06 B09B3/00 B09B5/00 B29B17/00 B65B69/00 (Advanced/Invention)

CPC: B09B3/00 B03B9/061 B09B3/0075 B09B5/00 B29B2017/001 B65B69/0033 B65B69/0058 C22B1/005 C22B21/0007



Family:

Publication number	Publication date	Application number	Application date
BE1024288 AB	20180112	BE20160005866	20161121
BE1024288 BB	20180115	BE20160005866	20161121
WO18091415 A1	20180524	WO2017EP79068	20171113

Priority:

BE20160005866 20161121

Probable Assignee: CENTRE DE RECHERCHES METALLURGIQUES ASBL CENTRUM VOOR RES IN DE METALLURGIE VZW

Assignee(s): (std): CENTRE DE RECHERCHES METALLURGIQUES ASBL CENTRUM VOOR RES IN DE METALLURGIE VZW

Assignee(s): CENTRE DE RECHERCHES METALLURGIQUES ASBL CENTRUM VOOR RESEARCH IN DE METALLURGIE VZW

Inventor(s): (std): DORMANN MARCEL ; MARIQUE CHRISTIAN ; NELIS ADRIEN ; STEYLS DIDIER

Agent(s): DE MANDATAIRES PRONOVEM GRP

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: SEPARATION DEVICE AND SEPARATION METHOD

Abstract: Provided are a separation device and a separation method with which **plastic** and **aluminum** can be separated. A separation device includes a separation unit. The separation unit includes a container and a scoop-up member. A processing target containing **aluminum** and one or more types of **plastic** is heated to a first temperature in the separation unit. The first temperature is a temperature that is less than the melting point of **aluminum** and is greater than or equal to the melting point of at least one type of **plastic**. The container accommodates the processing target heated to the first temperature. The scoop-up member has a hole portion allowing melted **plastic** to pass through, and **separates aluminum** and the melted **plastic** by scooping up the processing target accommodated in the container.

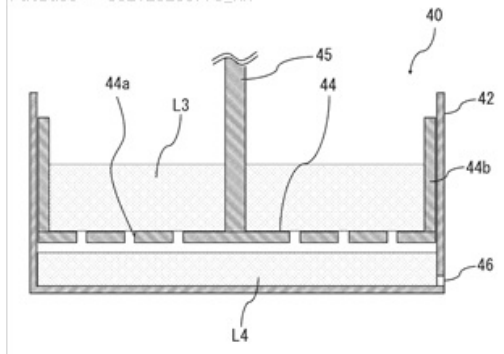
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International (IPC 8-9): B09B3/00 B09B5/00 B29B17/00 B29B17/02 C08J11/06 (Advanced/Invention)

CPC: B29K2305/02 B29L2009/008 Y02W30/622 C08J11/06 B29K2023/12 B29B17/02 B29B2017/0217 B29B2017/0255 B29K2023/06 B29K2067/003 C08J2323/06 C08J2323/12 C08J2367/02

US: 521/47

PatBase - US2016263778_AA

**Family:**

Publication number	Publication date	Application number	Application date
JP2015087402 A1	20170316	JP20150552232T	20131210
US2016263778 AA	20160915	US20160164401	20160525
WO15087402 A1	20150618	WO2013JP83141	20131210

Priority:

WO2013JP83141 20131210 US20160164401 20160525

Probable Assignee: DAIKI KK

Assignee(s): (std): DAIKI KK

Assignee(s): DAIKI CO ; DAIKI CO LTD

Inventor(s): (std): ITO HIROSHI ; YOSHINAGA JUNJI ; YOSHINAGA JYUNJI

Agent(s): MATSUDA JUNICHI ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: SEPARATION METHOD AND SEPARATION DEVICE USED THEREIN

Abstract: Provided are a separation method and a separation device used therein with which **plastic** and **aluminum** can be separated. The separation method includes a first heating step, and a first heat insulation step. In the first heating step, a processing target, which is accommodated in a container and contains **aluminum** and one or more types of **plastic**, is heated to a first temperature. The first temperature is a temperature that is less than the melting point of the **aluminum** and is greater than or equal to the melting point of at least one type of the **plastic**. Thus, the at least one type of **plastic** is melted. In the subsequent first heat insulation step, the processing target is kept at the first temperature. The heat insulation is continued until the **aluminum** is precipitated in the container and separated from the melted **plastic**.

Classifications:

International (IPC 8-9): B09B3/00 B09B5/00 B29B17/02

C08J11/06 (Advanced/Invention)

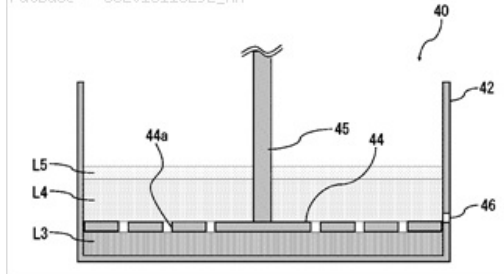
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B09B3/0083 B29B17/02 B29B2017/0255

US: 209/11 521/47

PatBase - US2016115292_AA



Family:

Publication number	Publication date	Application number	Application date
JP2015029120 A1	20170302	JP20150533807T	20130826
US2016115292 AA	20160428	US20160989509	20160106
WO15029120 A1	20150305	WO2013JP72767	20130826

Priority:

WO2013JP72767 20130826 US20160989509 20160106

Probable Assignee: DAIKI CO LTD

Assignee(s): (std) DAIKI KK

Assignee(s): DAIKI CO ; DAIKI CO LTD

Inventor(s): (std) ITO HIROSHI ; YOSHINAGA JUNJI ; YOSHINAGA JYUNJI

Agent(s): MATSUDA JUNICHI ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: PROCESS AND APPTS. FOR RECOVERY OF PLASTICS AND/OR METAL

Abstract: Method for the recovery of metal and/or plastic from an opt. fragmented mixed material comprises heating to melt the plastic, then subjecting the melt to centrifugal force to enrich the metal and plastic content, and then treating the opt. solidified enriched melt to recover the metal and/or plastic. The appts. for carrying out the method is also claimed.

Classifications:

International (IPC 8-9): B29B17/02 (Advanced/Invention);

B29B17/02 (Core/Invention)

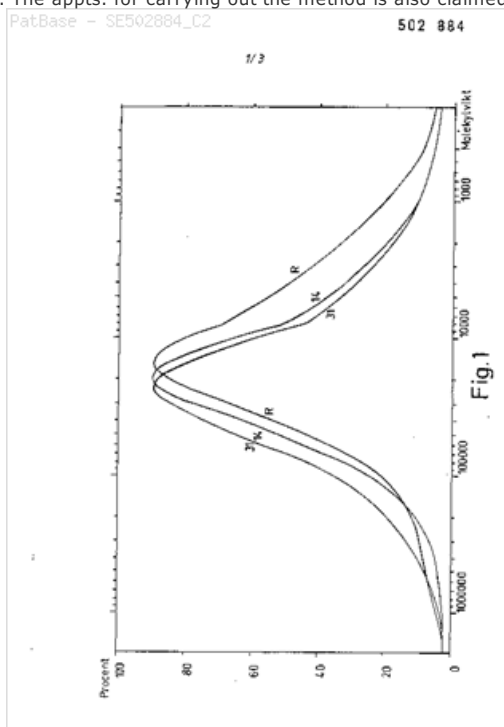
International (IPC 1-7): B29B17/02

CPC: Y02W30/622 B29B17/02 B29B2017/0231 B29B2017/0255

B29K2023/06 B29K2705/00 B29K2705/02 B29L2009/003

European: B29B17/02 L29B17/02Z1D L29B17/02Z2 L29K23/06

L29K705/00 L29K705/02 L29L9/00C



Family:

Publication number	Publication date	Application number	Application date
SE502884 C2	19960212	SE19940001286	19940415
SE9401286 A	19951016	SE19940001286D	19940415
SE9401286 A0	19940415	SE19940001286	19940415
SE9401286 L	19951016	SE19940001286	19940415

Priority:

SE19940001286 19940415

Probable Assignee:

GRAENGES AB

Assignee(s): (std):

GRAENGES AB

Inventor(s): (std):

KNUTSSON LAGE

Inventor(s):

LAGE KNUTSSON

Title: PROCESS FOR SEPARATING POLYESTER FROM OTHER MATERIALS

Abstract: The present invention is directed to a process for separating polyester, and particularly polyethylene terephthalate, from various contaminants and impurities. In general, the process includes the steps of contacting materials containing polyester with an alkaline composition to form a mixture. The mixture is heated causing some of the impurities to be chemically modified into a more separable form. During heating, a portion of the polyester may also be saponified. After heating, the mixture can be washed with water and the polyester can be easily separated from the remaining impurities. Through the process of the present invention, polyester can be separated and recovered from **waste** materials containing polyvinyl chloride and **aluminum**. The process is also effective at removing coatings adhered to the polyester and at removing entrained organic and inorganic compounds contained within the polyester.

Classifications:

International (IPC 8-9): C08J11/06 C08J11/16 (Advanced/Invention);
C08J11/00 (Core/Invention)

International (IPC 1-7): C08J11/04

CPC: Y02W30/70 Y02W30/705 C08J11/16 C08J11/04 C08J2367/02 Y02P20/143

European: C08J11/04 C08J11/06 C08J11/16 M08J367/02

US: 521/40 521/405 521/48 528/489

Family:

Publication number	Publication date	Application number	Application date
US5958987 A	19990928	US19960631710	19960410
US6197838 BA	20010306	US19990327663	19990608

Priority:

US19960631710 19960410 US19990327663 19990608

Probable Assignee: UNITED RESOURCE RECOVERY CORP

Assignee(s): (std): COCA COLA CO

Assignee(s): THE COCA COLA COMPANY ; UNITED RESOURCE RECOVERY CORP ; BRANCH BANKING AND TRUST CO ; BRANCH BANKING AND TRUST CO OF SOUTH CAROLINA

Inventor(s): (std): KING RICHARD PERRETT ; SCHWARTZ JR JOHN A

Title: METHOD FOR RESOURCE **TREATMENT** OF PAPER-**ALUMINUM-PLASTIC** OR **ALUMINUM-PLASTIC** COMPOSITE PACKAGING **WASTE** ON BASIS OF PYROLYSIS TECHNIQUE

Abstract: The invention discloses a method for the resource **treatment** of paper-**aluminum-plastic** or **aluminum-plastic** composite packaging **waste**. The method comprises the following steps: crushing composite packaging **waste** until the granule diameter thereof is smaller than 3cm; and carrying out pyrolysis **treatment** on the crushed composite packaging **waste** at 450 to 500 degrees centigrade in the absence of oxygen for 30min to 45min to generate high-purity aluminium foil and high-heat-value combustible gas produced through the pyrolysis conversion of **plastics**, wherein about 40 percent to 60 percent of the combustible gas is used for the heat supply to the pyrolysis of the composite packaging **waste**, and the rest of the combustible gas is collected for later use. The method of the invention is capable of effectively **separating aluminum** from **plastics** in the **aluminum-plastic** composite packaging **waste**, so as to achieve the **recycling** of high-value **aluminum** and the recovery of energy; and compared with other techniques for **treating aluminum-plastic** packaging **waste**, the technique of the invention has the advantages of good **aluminum-plastic** separation effect, high **aluminum** resource recovery rate, high energy recovery rate and low secondary pollution. Therefore, the technique constitutes a popularization-worthy technique for the resource **treatment** of **aluminum-plastic** composite packaging **waste**.

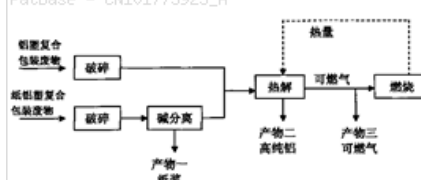
Classifications:

International (IPC 8-9): B09B3/00 B29B17/00 (Advanced/Invention);

B09B3/00 B29B17/00 (Core/Invention)

CPC: Y02W30/20 Y02W30/62 Y02P70/26

PatBase - CN101773923_H



Family:

Publication number	Publication date	Application number	Application date
CN101773923 A	20100714	CN200910244337	20091229

Priority:

CN200910244337 20091229

Probable Assignee: UNIV TSINGHUA

Assignee(s): (std): TSINGHUA UNIV ; UNIV TSINGHUA

Assignee(s): TSINGHUA UNIVERSITY

Inventor(s): (std): DONGBEI YUE ; FUQIANG LIU ; WEI SONG ; YONGFENG NIE

Inventor(s): YUE DONGBEI ; LIU FUQIANG ; NIE YONGFENG ; SONG WEI

Title: PROCESS FOR DETACHING ALUMINIUM LAYERS AND ALL MATERIAL LAYERS POSSIBLY LYING THEREOVER FROM **PLASTICS** LYING THEREUNDER WHICH ARE NOT FILMS

Abstract: Published without abstract.

Classifications:

International (IPC 8-9): B29B17/02 C08J11/06 (Advanced/Invention);
B29B17/02 C08J11/00 (Core/Invention)

International (IPC 1-7): B29B17/02 B32B15/08 B32B35/00 C08J11/04

CPC: Y02W30/524 Y02W30/622 Y02W30/625 Y02W30/701 C08J11/06 B29B17/02 B29B17/0412 B29B2017/0217
B29B2017/0244 B29B2017/0289 B29B2017/0293 B29B2017/0296 B29K2705/00 B29K2705/02 B29L2009/005 B29L2017/005
B29L2031/3055

European: B29B17/02 C08J11/06 L29B17/02Z1 L29B17/02Z1F2 L29B17/02Z8A L29B17/02Z9 L29B17/02Z9A L29B17/04D
L29K705/00 L29K705/02 L29L17/00B2B L29L31/30G L29L9/00D

Family:

Publication number	Publication date	Application number	Application date
DE4306348 A1	19940825	DE19934306348	19930223

Priority:

DE19934306348 19930223

Probable Assignee: SPITTEL MICHAEL

Assignee(s): (std): SPITTEL MICHAEL

Assignee(s): SPITTEL MICHAEL 99885 OHRDRUF DE

Title: VERFAHREN ZUM TRENNEN VON ALUMINIUM-BUTYL-VERBUNDEN METHOD FOR **SEPARATING ALUMINUM** BUTYL-CONNECTED (Machine translation)

Abstract: Source: DE102013006749A1 [DE] Verfahren zur Trennung von Aluminium-Butyl-Verbunden, dadurch gekennzeichnet, dass durch einen vorgelagerten bei erhoehter Temperatur ausgefuehrten Pressschritt eine Grobtrennung des Verbundmaterials in einen aluminiumreichen Presskuchen und ein nur noch gering mit Aluminium verunreinigtes butylreiches **Filtrat** erfolgt. Das so abgetrennte Butyl kann anschliessend in einem Extruder mit Siebeinsatz oder Trennkopf feingereinigt werden. **Machine translation:** Method for the separation of **aluminum**-butyl-Connected, characterized in that by an upstream EXPORTED at an elevated temperature compression step, a coarse separation of the composite material in an **aluminum**-rich press cake and an only slightly contaminated with **aluminum** butylreiches **filtrate**. The thus separated butyl can then in an extruder with strainer or cutting head are finely cleaned.

Classifications:

International (IPC 8-9): B03B9/06 B29B17/02 (Advanced/Invention)

CPC: B29K2023/22 B29K2305/02 B29L2009/003 B29B17/02 Y02W30/622

Family:

Publication number	Publication date	Application number	Application date
DE102013006749 A1	20141016	DE201310006749	20130410

Priority:

DE201310006749 20130410

Probable Assignee: KUNSTSTOFFRECYCLING CKT GMBH AND CO KG

Assignee(s): (std): KUNSTSTOFFRECYCLING CKT GMBH AND CO KG

Inventor(s): (std): SCHWARZE JOERG

Title: METHOD FOR FAST STRIPPING PLASTIC ALUMINUM COMPOSITE MATERIAL BY FORCE CHEMISTRY

Abstract: The invention discloses a method for quick peeling off aluminum plastic composite materials by a mechanochemical method. The method comprises: crushing the aluminum plastic composite material into pieces and placing the pieces in a separating agent; completely separating aluminum from plastic through quick heating, heat preservation and quick cooling; then, respectively obtaining aluminum and plastic through filtration, floatation separation and drying; and the separating agent comprises the following components in percentage by weight: 10 to 99.9 percent of organic carboxylic acid, 0.1 to 1 percent of surfactant and the balance being water. The method does not need special equipment and has simple operation and low cost; therefore, the method is propitious to industrial production and can realize respective reclaiming of aluminum and plastic, thereby not only improving the recycling value of the aluminum plastic composite material, but also reducing environmental pollution caused by wastes.

Classifications:

International (IPC 8-9): B29B17/02 C08J11/04 (Advanced/Invention);

C08J11/00 (Core/Invention)

CPC: Y02W30/70 Y02P20/143

Family:

Publication number	Publication date	Application number	Application date
CN101475702 A	20090708	CN200910095707	20090116
CN101475702 B	20110413	CN200910095707	20090116

Priority:

CN200910095707 20090116

Probable Assignee: UNIV ZHEJIANG

Assignee(s): (std): PUJIANG HENGJIE GARMENT CO LTD ; UNIV ZHEJIANG ; ZHEJIANG UNIV

Assignee(s): ZHEJIANG UNIVERSITY ; PUJIANG HENGJIE GARMENT CO

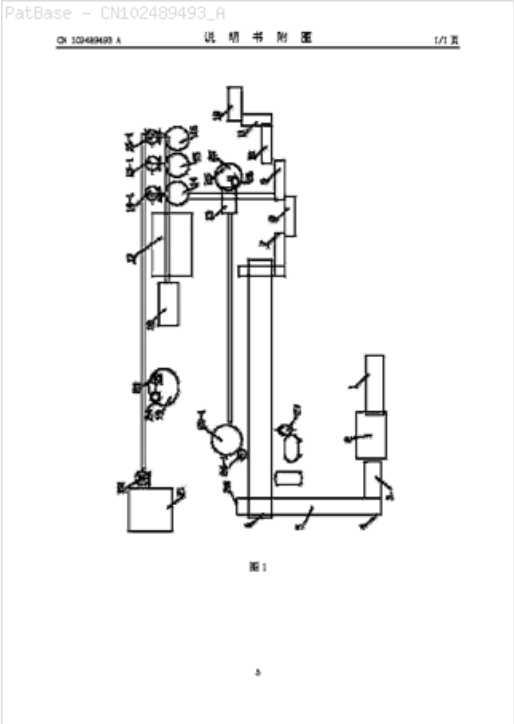
Inventor(s): (std): ZHENHUA LI ; YANG LU ; SHENGHANG DONG ; JIANDANG CHEN ; HUA LEI

Inventor(s): DONG SHENGHANG ; CHEN JIANDANG ; LU YANG ; LI ZHENHUA ; LEI HUA

Title: METHOD FOR SEPARATING ALUMINUM POWDER FROM WASTE PAPER PLASTIC ALUMINUM COMPOSITE PACKAGING MATERIAL

Abstract: The invention relates to a method for separating aluminum powder from a waste paper plastic aluminum composite packaging material. The main technical characteristic is that: the method comprises the following steps: cleaning an aluminum plastic film generated in the separation process of aluminum paper and aluminum plastic; conveying the cleaned aluminum plastic film into a reactor; adding 20 percent oxalic acid aqueous solution in a liquid medicine preparation tank into the reactor by using a metering pump; sealing the reactor; heating the reactor to +/- 70 degrees centigrade through steam; reacting at the temperature; after the reaction is finished, extracting the oxalic acid aqueous solution by using the pump and recycling; and allowing other components to pass through a dry centrifugal machine and a wet centrifugal machine which are connected with each other, wherein an aluminum powder outlet of the wet centrifugal machine is connected with a centrifugal filter, the centrifugal filter is connected with a purification pond 1, a purification pond 2 and a purification pond 3, the centrifugal machines are connected with an acid return pond, and the purification ponds are connected with a water return pond. Compared with the prior art, the method has the advantages of separating the aluminum plastic composite film wastes continuously and effectively, recycling reagents and sewage in the whole system and realizing recycling.

Classifications:
International (IPC 8-9): B09B3/00 B09B5/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN102489493 A	20120613	CN201110428602	20111220

Priority:
CN201110428602 20111220

Probable Assignee: HANGZHOU FULUN ECOLOGICAL TECHNOLOGY CO LTD
Assignee(s): (std): HANGZHOU FULUN ECOLOGICAL TECHNOLOGY CO LTD
Assignee(s): HANGZHOU FULUN ECOLOGICAL TECHNOLOGY CO
Inventor(s): (std): YANG JUN

Title: USE OF **RECYCLED** CD MATERIAL AS AN ADDITIVE FOR GLITTER DYES

Abstract: The invention relates to molding materials, containing at least one thermoplastic or duro-**plastic polymer** as constituent A, fine-particle **recycled** material containing fine particle aluminium, enamel, polycarbonate and optionally printing ink as constituent B and conventional additives as constituent C. The molding materials can be used to produce large, outer automobile surface parts.

Classifications:

International (IPC 8-9): B09B3/00 B29B17/00 B29B17/02 C08J11/06 C08K3/08 C08L101/00 C08L67/02 C08L69/00 C08L77/00 C09C1/64 (Advanced/Invention);
B09B3/00 B29B17/00 B29B17/02 C08J11/00 C08K3/00 C08L101/00 C08L67/00 C08L69/00 C08L77/00
C09C1/62 (Core/Invention)

International (IPC 1-7): B09B3/00 B29B17/00 B29B17/02 B62D29/04 C08J11/06 C08J3/20 C08J5/00 C08K3/08 C08L101/00 C08L23/06 C08L23/12 C08L23/16 C08L25/00 C08L51/04 C08L55/02 C08L67/00 C08L67/02 C08L67/03 C08L77/00 C09C1/64
CPC: Y02W30/622 Y02W30/701 C08J11/06 B29B17/02 B29K2033/18 B29K2067/00 B29K2067/006 B29K2069/00
B29K2077/00 B29K2081/06 B29K2705/00 B29L2009/005 B29L2017/005 C08J2333/06 C08J2369/00 C08L67/02 C08L69/00
C08L77/00

European: B29B17/02 C08J11/06 C08L67/02 C08L69/00 C08L77/00 L29K33/18 L29K67/00 L29K67/00C L29K69/00
L29K705/00 L29K77/00 L29K81/06 L29L17/00B2B L29L9/00D M08J333/06 M08J369/00

Family:

Publication number	Publication date	Application number	Application date
DE19717878 A1	19981029	DE19971017878	19970428
DE59802734 D1	20020221	DE19985002734	19980422
EP0977814 A1	20000209	EP19980924172	19980422
EP0977814 B1	20011121	EP19980924172	19980422
ES2171026 T3	20020816	ES19980924172T	19980422
WO9849238 A1	19981105	WO1998EP02380	19980422

Priority:

DE19971017878 19970428 DE19985002734 19980422 WO1998EP02380 19980422

Probable Assignee: GEN ELECTRIC

Assignee(s): (std): BERGMANN LEANDER ; FRITSCH THOMAS ; GEN ELECTRIC ; ZELTNER DORIS ; BASF AG

Assignee(s): BASF AG 67063 LUDWIGSHAFEN DE ; BASF AKTIENGESSELLSCHAFT ; BASF 67063 LUDWIGSHAFEN DE AG ; GENERAL ELECTRIC COMPANY ; GENERAL ELECTRIC CO SCHENECTADY ; GENERAL ELECTRIC CO SCHENECTADY N Y US ; GENERAL ELECTRIC CO

Inventor(s): (std): BERGMANN LEANDER ; FRITSCH THOMAS ; FRITZSCHE THOMAS ; ZELTNER DORIS ; ZELTNER DORIS DR

Inventor(s): FRITZSCHE THOMAS 67069 LUDWIGSHAFEN DE ; BERGMANN LEANDER 63755 ALZENAU DE

Designated states: AT BE BR CH CN CY DE DK ES FI FR GB GR IE IT JP KR LU MC NL PT SE US

Title: SORTING OF SCRAP **METAL**

Abstract: (Claim 1) 1. In a process for enhancing the grade of Eght **metal** scrap recovered from compos light **metal** scrap involvingsubjecting said scrap to gravity separation in a water suspension of finely divided ferrous solids to recover a light **metal** portion from said scrap and melting the thus 26 recovered portion, the improvement comprising drying and then agitating said recovered portion prior to melting same thereby removing therefrom finely divided ferrous solids adherin.-thereto.

Classifications:

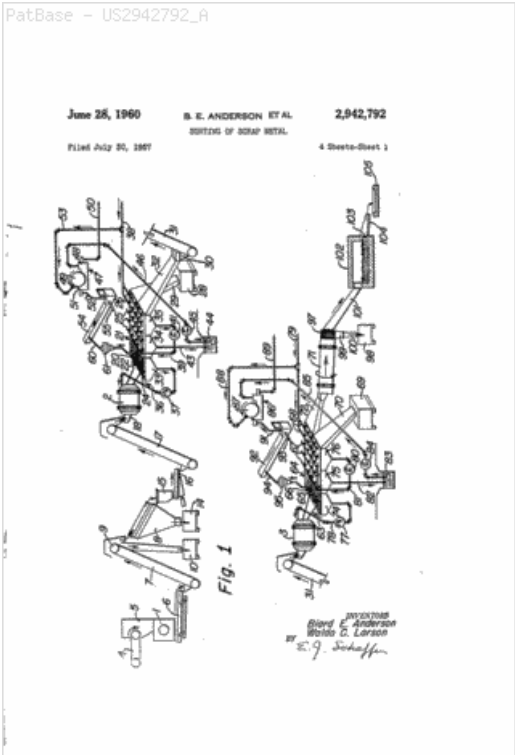
International (IPC 8-9): B03B9/06 (Advanced/Invention); B03B9/00 (Core/Invention)

International (IPC 1-7): B03B9/06 B07B13/04

CPC: Y10S241/38 B03B9/061

European: B03B9/06D

US: 209/11 209/17 209/172.5 209/2 209/38 209/39 241/14 241/17 241/20 241/24.13 241/26 241/DIG.38 75/687



Family:

Publication number	Publication date	Application number	Application date
US2942792 A	19600628	US19570675200	19570730

Priority:

US19570675200 19570730

Probable Assignee: AMERICAN SMELTING REFINING

Assignee(s): (std): AMERICAN SMELTING REFINING

Assignee(s): FEDERATED METALS A CORP OF N J CORP ; FEDERATED METALS CORP ; AMERICAN SMELTING AND REFINING CO ; AMERICAN SMELTING AND REFINING COMPANY

Inventor(s): (std): ANDERSON BIARD E ; LARSON WALDO C

Title: PROCESS FOR **RECYCLING WASTE** TOOTHPASTE **ALUMINUM-PLASTIC** COMPOSITE PACKAGING MATERIAL

Abstract: The invention discloses a process for **recycling waste** toothpaste **aluminum-plastic** composite packaging material. The process is characterized by comprising the following steps: (1) **treating** crushed materials; (2) **separating** **aluminum** and **plastics**; (3) granulating **plastics** and producing a finished product; and (4) producing **aluminum**-silver powder. In the process, the toothpaste **aluminum-plastic** composite packaging material is used as a raw material, and reagents are all non-toxic, therefore the high-quality polyethylene **plastic** product and **aluminum** powder can be produced; and the whole process for **recycling** the **waste** toothpaste **aluminum-plastic** composite packaging material does not generate any industrial pollution. The process is simple to operate and environmentally friendly and has the characteristics of low cost, high benefit, no toxicity, low process condition requirement and the like.

Classifications:

International (IPC 8-9): B09B3/00 B09B5/00 (Advanced/Invention)

PatBase - CN102151686_A

CN 102151686 A 说明书附图 1/3 页



图 1

6

Family:

Publication number	Publication date	Application number	Application date
CN102151686 A	20110817	CN201010603804	20101224
CN102151686 B	20130605	CN201010603804	20101224

Priority:

CN201010603804 20101224

Probable Assignee: MILUO TONGYI RENEWABLE RESOURCES TREAT CO LTD

Assignee(s): (std): MILUO TONGYI RENEWABLE RESOURCES TREAT CO LTD

Assignee(s): MILUO TONGYI RENEWABLE RESOURCES TREATMENT CO

Inventor(s): (std): FEN ZHENG ; KEJIN XIA ; WANG YI ; XIA KEJIN ; YI WANG ; ZHENG FEN

Title: SEPARATION OF **ALUMINUM** ALLOYS

Abstract: A method and an apparatus for separating shredded particles, for instance particles of used beverage cans, into respective fractions that contain greater amounts of one of a plurality of alloys from which the cans have been made. The method includes screening the shredded material to provide particles having a desired particle size, and gravimetrically separating the screened particles into a plurality of groups based upon the mass of the particles. The heaviest bulk density group of particles is selected for further processing and is first preferably passed through a flattening device to flatten the particles, which are then conveyed through a varying magnetic field provided by a linear induction motor so that the particles containing higher concentrations of higher conductivity alloys can be further separated from particles of alloys having lower electrical conductivities. The highest conductivity fraction that results includes a high concentration of can body alloy, which can then be **recycled** as scrap material for further processing into can body alloy material. The other fraction of material, depleted of the can body alloy, can be more readily used in the manufacture of new can end material.

Classifications:

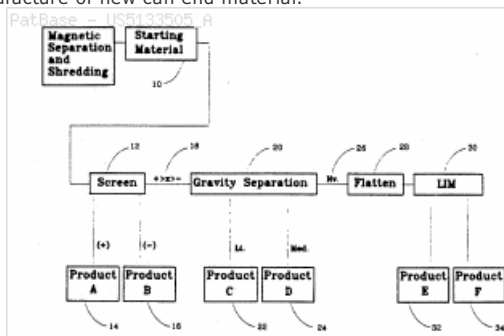
International (IPC 8-9): B03B9/06 B03C1/253 (Advanced/Invention); B03B9/00 B03C1/02 (Core/Invention)

International (IPC 1-7): B02C23/00

CPC: Y02W30/521 Y02W30/524 Y02W30/526 B03C1/253 B03B9/061

European: B03B9/06D B03C1/253

US: 209/12 209/212 209/3 209/38 209/40 241/19 241/20 241/24 241/24.14 241/79.1 241/791 241/99



Family:

Publication number	Publication date	Application number	Application date
US5133505 A	19920728	US19900606634	19901031

Priority:

US19900606634 19901031

Probable Assignee: TOMRA OF NORTH AMERICA INC

Assignee(s): (std): REYNOLDS METALS CO

Assignee(s): REYNOLDS METALS CO A CORP OF DE ; REYNOLDS METALS COMPANY ; TEACHER S RETIREMENT SYSTEMS OF ALABAMA ; TOMRA OF NORTH AMERICA INC ; TEACHER'S RETIREMENT SYSTEMS OF ALABAMA ; WISE ALLOYS LLC ; WISE RECYCLING LLC ; EMPLOYEES RETIREMENT SYSTEM OF ALABAMA ; LISTERHILL TOTAL MAINTENANCE CENTER LLC

Inventor(s): (std): BOURCIER GILBERT F ; LOWDON JACK