



Polyesters

www.albapolyesters.my

High Purity
Recycled PET



OUR STORY



ALBA POLYESTERS was started in 2008 in India and rapidly emerged as 1 of the top 3 producers of recycled PET specialty flakes & granules from both post-industrial as well as post-consumer scraps.

Led by highly experienced team of polymer scientists, we combine home grown expertise & with the best Austrian transformation know-hows.

What sets us apart is our strategic belief that we must deploy our transformation capabilities close to all our customers.

Perusahaan ALBA POLYESTERS dimulakan dalam tahun 2008 di India dan dalam jangka masa singkat sudah muncul sebagai 1 daripada 3 produsen utama recycled PET specialty flakes & granules dari sumber bahan lepasan konsumer & juga bahan lepasan industrial.

Dipimpin oleh usahawan yang paling berpengalaman ilmuwan polimer, kami menggabungkan teknologi tempatan dan ilmu transformasi Austria yang terbaik. Apa yang membuat kami berbeda adalah keyakinan strategis kami bahwa kita harus menyebarkan kemampuan transformasi dekat dengan semua pelanggan kami.



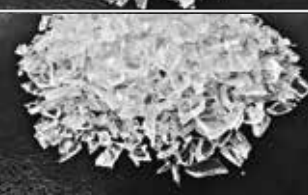
INNOVATIVE APPLICATIONS OF ALBA SPECIALTY MATERIALS

- ▶ PET Bottles, Jars and Containers
- ▶ PET Strapping Band
- ▶ PET Sheets
- ▶ Polyesters Film
- ▶ Glycolised PET





Polyesters

	Grade	Intrinsic Viscosity (IV)	Ash Content	Crystallinity	Article Sizes	Suitable Applications
	Test Method	ASTM D4603-03	ASTM D5630-05	DSC	Internal	
	ALBAPET High Purity Amorphous Granule	> 0.67	<0.04	Min 15	Chips/Gram > 80	
		dl/g	%	%	pcs	
	ALBAPET High Purity Crystalline Granule	> 0.68	<0.04	Min 25	Chips/Gram > 80	
		dl/g	%	%	pcs	
	ALBAPET High Purity Bottle Flake	> 0.73	<0.04	Min 20	Bulk Density < 420 (ASTM D1895)	
		dl/g	%	%		
	ALBAPET High Purity Preform Grind	> 0.78	<0.04	Min 20	Grind Size 10mm to 14mm (Sieve Mesh)	
		dl/g	%	%	mm	



SUB-CONTRACT THE RECYCLING OF YOUR INTERNAL PET SCRAPS



High Purity Recycled PET Granule, Flake and Masterbatch from PET Bottle Factories Scraps



	Application	Grade	Addition Rate	Compliance
	PET Preform / Bottle	Optical Brightener	0.5% to 2.0%	* FDA * ROHS
		IV Enhancer	1.0% to 3.0%	
	PETG Preform / Container	Recycled PETG Compound	10% to 30%	
		Crytallization Inhibitor	0.5% to 1.5%	
	PET Sheet	Slip Anti-Block	2.0% to 2.2%	
		Anti-Static Granular Masterbatch	2.0% to 3.0%	
		Anti-Static Water Based Surface Coating Additive	1.0% to 2.0%	
		IV Enhancer	1.0% to 3.0%	
		Impact Modifier	1.0% to 3.0%	
	PET Strapping Band	Optical Brightener	0.5% to 2.0%	
		Anti-Split & Welding Enhancer	1.0% to 3.0%	
		Welding Enhancer	1.0% to 3.0%	
		IV Enhancer	1.0% to 3.0%	



Applications	Grades
Carrier Type/Option	PET / PP / PE / No Carrier
Recommended Use	Extrusion / Injection
Recommended Dosage	0.2% to 2.0%
Packing	25 KGS (PP Non Woven)
Moisture (%)	< 0.5%
Color Matching Sample	100g of existing masterbatch.
Color Matching Lead-time	within 1 working week.





Plastics Extruder/Injection Machine Cleaning

- ▶ All in one formula. Combining resin, chemical & mechanical cleaning in a single process.
- ▶ Formulated with Recycled HDPE, dirt absorbent, scrubbing agent & surfactant for maximum cleaning effectiveness.
- ▶ Clean & purge PET / PP / PE / LLDPE / LDPE / HDPE screws & barrels.
- ▶ Save up to 60% of resin & cleaning/purging time compared to same resin purge.
- ▶ Suitable for cleaning after colors/formulations change or during routine maintenance.
- ▶ Low abrasion & high absorbent - no impact to screw & barrel surface for normal use.



Cleaning Instructions

- 1 Remove melt screen filters.
- 2 No change to temperature profile if within 160C to 280C.
- 3 Feed econo CLEAN until unwanted colorants / contaminants are completely cleaned.
- 4 Use your own compatible scrap resins to purge out the remaining residues of econoCLEAN. Example: GPPS (Polystyrene) are effective to purge econoCLEAN when running PET after cleaning.
- 5 Return to normal machine operation as GPPS has sufficient miscibility to be pushed out by running resin.

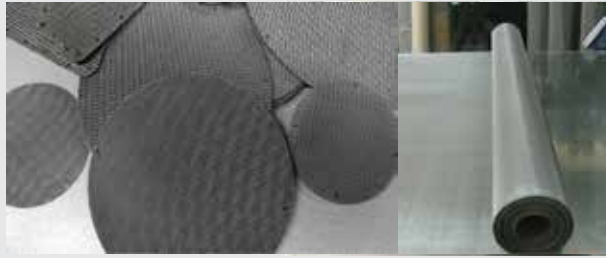
Specification

Granule Size:	Pass 5mm x 5mm Mesh
Purging Temp:	160C to 280C
Purging Speed:	10 RPM to 20 RPM
Melt Screen:	Must be removed.
Carrier:	No color recycled HDPE
Pre-drying:	Not required.
Packing:	25 KGS in PP non-woven bag
Moisture:	< 1%



EXTRUDER Melt Screen Stainless Steel Wire Mesh - Roll or Pre-cut

Ex-Stock for most sizes



- Ex-stock (Roll) / Pre-cut (Punching / Lasercut)
- Stainless Steel / Steel Mesh
- Wide Standard Ranges (20, 40, 60, 80, 100, 200, 325, 400 mesh).

Rotary Magnetic Separator

Separate steels / irons



- Separation Efficiency: =>98%
- Magnetic Rod Number - 6 / 8 / 10
- Capacity 500kg-1,000kg
- Motor Power - 3 Phase 0.25HP / 0.5 HP / 1 HP

Non-Ferrous Eddy Current Separator

Separate non-ferrous. Eg. Aluminium / Copper



- Capacity: = 500-800 KGS/HOUR
- Drum Speed: 50-2800 RPM
- Power: 5.5KW

Circular Vibrating Screen

Sizes separation



- Screen Diameter: 400- 1500mm.
- Capacity > 300 KGS/HOUR
- Decks: 1 to 4
- Material: Stainless Steel
- Mesh: Upto 200 mesh

Linear Vibrating Screen

Sizes separation



- Dimension: 500mmx1200mm & above.
- 300-400 KGS/HOUR
- Decks: 1 to 4
- Material: Stainless Steel
- Mesh: Upto 200 mesh

Plastics Flake Washing Machine (Manual)

Washing with water & cleaning detergents.



- Capacity: 50-60kgs/15 min.
- Hot water resistant upto 90C (special order).
- Power: 7.5kw
- Dimension: 1150*1050*1050 (mm)
- Weight : 350kgs

Plastics Flake Centrifuge Spin Dryer

Fast moisture removal without heat.



- Capacity: >500kgs/ h
- Power : 7.5kw, 380v, 50hz
- Rotary speed: 1250rpm.
- Drying efficiency: 95%
- Dimension: 1200x1200x1150mm
- Weight: 315kgs

High Speed PET Infrared Dryer & Crystallizer



- 50% to 70% reduction of electricity consumption compared to hot air system.
- Drying speed: 20 mins (500 ppm residual moisture).
- Crystallizing speed: 10 mins (30% crystallinity)
- Capacity: 200 / 400 / 600 / 800 KGS/Hour

PET Hot Air Dryer & Crystallizer

Hopper Volume (KGS)	100	300	600	1000	1500
Agitating Motor (KW)	0.25	1.1	1.5	1.5	2.2
Blower (KW)	0.55	2.2	3	5.5	11
Heater (KW)	12	24	48	68	68
Capacity (KG/HR)	50	150	300	500	750
Weight (KGS)	230	500	860	1260	1750



PET Bottle V Blades Crusher

(Gravity feed of high void plastic bottles / thermoforms)



- Capacity: 200-500kgs/hour
- Blade Steel Grade: SKD-11
- Rotary Blade: 6 pcs
- Static Blade: 4 pcs
- Chamber: 500x400mm
- Sieve Size: 10mm to 16mm
- Power: 11kw

models upto 1,000 kgs/hour (30KW) is available.

Claw Blades Plastics Crusher

(Rigid Plastics)



- Capacity: 400-500kgs/hour
- Blade Steel Grade: SKD-11
- Rotary Blade: 21 pcs
- Static Blade: 4 pcs
- Chamber: 600x350mm
- Sieve Size: 6mm to 14mm
- Power: 15kw

models upto 1,000 kgs/hour (30KW) is available.

Dry Mixer / Blender

- Tumbler
- Vertical
- High Shear
- Ribbon



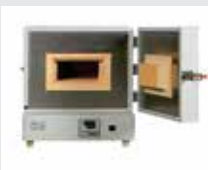
- Capacity - 50 KGS & above
- Can be customized for various bulk density such as powder, flake, grind, ganule.
- Heating option available.

Crusher Blade Sharpening Machine

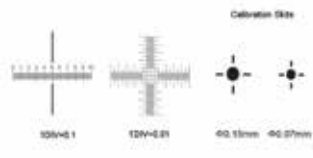


- Fully automatic
- Working Range: 0-1400 mm
- Working Angle: 0-90 degree

QA Tools – Material

Apparatus/Equipment	Purpose	Test Method	Technical Data
Low Cost PET Intrinsic Viscosity Tester (ASTM D4603) (Solvent method)	Determination of intrinsic viscosity for PET using ASTM solvents method. Melt viscosity correlation (fast result) are known to be valid given, test sample are of 100% pure PET. PET IV measurement for contaminated PET, e.g. sample with additives & masterbatches content are known to produce erratic results due to presence of contaminants if measured using melt viscosity correlation. IV might also drop due to melting process. For IV measurement that was comparable in the PET industries, solvent methods remain dominant. Why low cost? Immersion type water bath giving +/- 0.01C accuracy are extremely costly. Example, in conduction heating, immersion heater when powered on will generate heat, however when turn off, some residual heat still remain. This make immersion heating difficult to control at such accuracy. Infrared on the other hand, heats by radiation. On/off heating cycle are almost instantaneous.		System Contents # ASTM calibrated Ubbelohde Viscometer: Type 1B. # ASTM calibrated Liquid in glass thermometer type 118C (measuring range 29C to 31C). # Full accessories to successfully complete this test. # Reagent grade solvents needed: 60% Phenol Crystal / 40% 1,1,2,2 Tetrachloroethane. - Recommended Suppliers: Merck/Sigma Aldrich/ Acros (Fisher Scientific). - Calculation software: FOC - Testing Capacity: 5 samples per day. - Note: You can use your current precision scale of 0.1mg & standard hotplate magnetic stirrer to keep your system cost low. 
PET Melt Viscosity Tester (Melt Flow Index (MFI), Melt Index (MI), Melt Flow Rate (MFR) & Melt Volume Rate (MVR) for general thermoplastics)	Measure melt flow character of PET, PP, PE & other thermoplastics. Suitable for PET melt viscosity correlation to intrinsic viscosity of PET. Recommended for 100% pure PET testing only. Contaminated PET, solvent method is recommended. * Programmable pre-drying mode for PET sample before melting test.	ASTM D1238, ASTM D3364	(1) Standard test load (a total of eight full weight) (2) Temp range: RT—400°C (3) Constant temp accuracy: ±0.5°C (4) Minimum temp displaying: 0.1C (5) Cutting method: manual or automatic cutting (6) Temp recovery time: less than 4 min (7) Printing: A mini printer (8) Supply voltage: AC220V ± 10% 50HZ 
High Temperature Muffle Furnace	Ash Content Test on determination of ash residues such as inorganic additives, masterbatches etc.	ASTM D5630-06 - Standard Test Method On Ash Content in Plastics	# Micro computer controller # Power: 220 to 240V. 50HZ /4KW # Temperature range: 300 ~ 1000°C # Temperature fluctuation: ±3°C # Heating Chamber: 200×300×120mm 
Laboratory Drying Oven (Vacuum Optional)	ASTM D5814-10 - Contamination in Recycled PET Using a Plaque Test. ASTM D5577-94 Separate and Identify Contaminants in Recycled Plastics. ASTM D5991-09 - Separation and Identification of PVC contamination in PET. ASTM D6980-12 -Determination of Moisture in Plastics by Loss in Weight		# Temp range: Ambient - 300C # 20L capacity & above # Max. Vacuum: >30 inHg 
Laboratory Magnetic Hot Plate Stirrer	Sample preparation & mixing. With suitable vessel, can also be used as a substitute as small sample oven / melting analysis. Simulation of PET flakes washing condition.	An essential apparatus used in most plastic test methods	# Temp range: Ambient - 380C # RPM: 50 to 1250r/min # Stirring Volume: 2000ml - Heating plate: 135mm x 135mm 
Laboratory Magnetic Stirrer	Stirring & sample preparation. Simulation of PET flakes washing condition.	An essential apparatus used in most plastic test methods	# No heating. # RPM: 50 to 1250r/min # Stirring Volume: 2000ml # Base plate: 135mm x 135mm 
Laboratory 0.1mg Precision Scale (Calibration Weight Included)	An essential apparatus used for many quantification analysis.		# Max load: 220g # Accuracy: 0.0001g (0.1mg) # Pan Size: 90mm # Precision calibration weight provided. 

Apparatus/Equipment	Purpose	Test Method	Technical Data	
PET Solid Density & Crystallinity Adapter Kit	<i>An essential apparatus used for many quantification analysis.</i>	<i>Use your current precision scale to measure PET density, specific gravity & crystallinity correlation with little additional investment.</i>	<i>All type of solid density measurement heavier than water.</i>	
Laboratory Vacuum Pump for Vacuum Dry Moisture Test	<i>For low PPM moisture testing such as PET dryer or crystallizer. Suitable to be used as an alternative to vacuum oven.</i>	<i>ASTM D6980-12 - Determination of Moisture in Plastics by Loss in Weight</i>	<i># Pumping rate: 20L/min # Max. Vacuum : > 25 in Hg</i>	
Precision Moisture Tester Kit (Vacuum Drying)	<i>For low PPM moisture testing such as PET dryer or crystallizer. Suitable to be used as an alternative to vacuum oven.</i>	<i>ASTM D6980-12 - Determination of Moisture in Plastics by Loss in Weight</i>	<i>Moisture accuracy: < 50ppm Sample weight <20 g Heating time 1 – 60 min Heating temp: 120°C - 180°C Display: solid %, moisture %, g, time, °C L x W x H 285 x 160 x 150 mm</i>	
Fast Moisture Analyzer (Halogen)	<i>For high PPM moisture testing. Suitable to be used as an alternative to vacuum oven.</i>	<i>ASTM D6980-12 - Determination of Moisture in Plastics by Loss in Weight</i>	<i>Moisture accuracy: 0.001g Pan Size: 90mm / Sample weight <50g Heating time 1–99min (stepping is 10s.) Heating temp: 50°C - 180°C (stepping is 1°C) Display: solid %, moisture %, g, time, °C Interface: Rs232C / L x W x H 285 x 160 x 150mm</i>	
PET Blown Bottle Acetaldehyde Detector (Trap & Purge Method)	<i>Quick detector for residual Acetaldehyde inside blown PET bottle. Gas trapped inside PET bottle (after conditioned at 60C) are purged through a single use Colorimetric detector tube to measure PPM level of Acetaldehyde</i>	<i>Detection range: 1PPM to 20 PPM Measurement Temp: RT - 40C (with Compensation)</i>		
Tabletop Compact Laboratory Fume Hood with Exhaust Blower (Full Steel Structure)	<i>Suitable to prevent exposure to solvents or chemicals used in IV testing, FDA CFR21 testing. Also suitable to be used as an safety enclosure whenever high temperature testings are involved.</i>	<i>Dimension: 1000mm x 650mm x 1000mm Working Surface Height: 800mm Exhaust Air Volume: 800m3 an hour Noise: <60dB LED Lamp: 10W x 1 Air Blower: Speed adjustable Splash window: 6mm toughened glass Ducting: 3 meter PP Nett Weight: 62 KGS</i>		
Laboratory Vertical Overhead Stirrer	<i>Stirring & sample preparation. Simulation of PET flakes washing condition.</i>	<i>An essential apparatus used in most plastic test methods</i>	<i>Motor: 40W Speed: 60 - 1500 RPM *Driven by brushless DC motor, *No sparks during operation, *Extent of effective holding collet, *Digital display of rotation speed *Favorable speed adjustment capability *Digital display of rotation speed</i>	

Apparatus/Equipment	Purpose	Test Method	Technical Data	
Industrial Grade 500X USB Microscope	# surface analysis of plastics sheet, film, container, strapping band. # 2D measurement of black speck	Internal	# Alloy steel construction for industrial use # Upto 500X optical magnification. # calibration for measurement	
Precision Microscope Calibration Slide	A Precision Stage Micrometer with 4-scales 1mm Total Length Subdivided into 100 Divisions Each Division is 0.01mm Across Cross-Line Scale (Vertical and Horizontal divisions) 0.01mm Calibration Dots (0.07mm)	 		
Haze Meter	Measurement of optical characteristics of the transparent and translucent plastic films & sheets. Essential for PET films & sheets manufacturers.	ASTM D1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics	Range of Haze: 0-30% Range of Transmittance: 0-100% Repeatability: Haze: 0.2% Transmittance: 0.5% Accuracy: Haze: ±0.5%. Transmittance: ±1.5% Weight (Gross): 8kg Dimensions: 540mm x 345mm x 230mm	
Gloss Meter	Measurement of gloss & surface luster for PET plastic sheet & film.	ASTM D523	Projecting angle: 20° ± 0.5° Measure range: 0~200Gu Measure range: <±0.4Gu / 30min Value error: <±1.2Gu Power: DC1.5V × 1 Environment temperature: 0°C~40°C Relative humidity: <85% Dimension: 145 × 80 × 38mm	
Ultra Violet Light Tester (UVA & UVB Range)	Outdoor / indoor assessment of PET degradation due to UVA / UVB.	Measurable spectrum: UVA & UVB Range: 0~40mW/c UV sensor spectrum: 290~390nm Accuracy: ±(4%FS+2 digit) Sensor structure: The exclusive UV photo diode & UV color correction filter. Sampling Time: 0.5 second Operating Temperature: -10~40°C(14~104°F) Operating Humidity: 0~70%Rh		
Transparent / Translucent PET Film Tester (Simultaneous measure InfraRed, Ultra Violet & Visible Light)	Simultaneously measure and display Ultra Violet rejection value, Infra Red rejection value and visible light transmission value of PET or other plastic transparent / translucent film or sheet.	1. Size: 216mm*134mm*29mm(L*H*W) 2. Testing opening: Wide 47mm * Height 91 mm / Weigh: 590g 3. Resolution: 0.1% 4. Accuracy: +/-2%(Colorless and transparent material) 5. UV peak wavelength: 365nm 6. VL peak wavelength: 550nm 7. IR Peak wavelength: 1400nm 8. Power supply: 5V AC/DC Adapter		
RAL System International Color Chart	* > 200 Gloss Color Samples * Luminous (Neon) Color Samples * Metallic Color Samples * Easy online database to obtain color data / measurement			
Precision Colorimeter	Quickly check color variance between approved sample & production (deltaE) Communicate colors value CIE L*a*b* with suppliers / customers.		# Illuminant : D65 / 10 degree # Measuring Aperture : Ø4mm # Sensor : Silicon photoelectric diode # Color Space : CIE L*a*b* # Color Difference Formula : delta E*ab delta L*a*b* # Lamp Life : 3 years, more than 1.6 million measurements	

Apparatus/Equipment	Purpose	Test Method	Technical Data
Stainless Steel Zone Sampler for Jumbo Bag / Bulk Bag	Retrieve samples from any location inside a jumbo / bulk bag for QA control & analysis	# contamination check # moisture check	# 3 zone # 25mm diameter x 1 meter length 
Cordless Sample Retriever from Dryer / Crystallizer (Micro Screw Conveyor)	# Stainless Steel Construction # Small Screw Conveyor pulling PET sample from Dryer / Crystallizer into sample flask. # Powered by Bosch rechargeable cordless power tool / Lithium ion battery.	 	
Portable Digital pH Meter	# measure the residual pH of washed flakes especially of post-consumer origins.		Display: LCD / Accuracy: 0.01 / Resolution: 0.01 Operating Temp: 0~80°C Measuring Range: 0.00~14.00 Probe Type: Precision glass bulb electrode / Calibration Method: 2 points automatic calibration Power Supply: 2*1.5V LR44 
Water Hardness Tester	# measure the water hardness used in PET flake washing as a major determinant of washing quality.		1. Measurement range: EC:0—9990Ous/cm; TDS:0-9990ppm; Temperature Celsius: 0.1-80.0 Celsius. 2. Size: 154mm*30mm*14mm 3. Color: White 
Ultrasonic Contactless Flow Meter	Ultrasonic contactless flow measurement of water & chemicals in PET flake washing line. Controller + 2 x transducer.	Protection Level : IP30 main unit, IP68 transducer Humidity: ≤85%RH / Temperature: <120C Accuracy: ±1% / Velocity range: 0~±10m/s, Bi-directional measurement Pipe size: DN32~DN6000mm Type of liquid: Water, sea water, sewage, oil, alcohol, etc. Pipe material: Steel, stainless steel, cast iron, copper, PVC, aluminium, glass with or without liner. Signal output: 1 way 4-20mA output / 1 way OCT pulse output / 1 way Relay output / Signal input: 3 way 4-20mA input, achieve to heat measurement by connecting PT100 platinum resistor. Interface RS485, support MODBUS / Power supply DC8~36V or AC10~30V	
Precision Digital Hygrometer & Thermometer for Humidity & Temperature Measurement	Monitoring & measuring humidity inside QA laboratory before, during & after test or trial.	Resolution:0.1°C/0.1%RH; Humidity & temperature measurement Temperature Range: -10 to 50°C, -14° to 122°F (±0.5°C) / Humidity Range: 5%RH to 98%RH(±3%RH) °C/°F selection LCD backlight display / Low battery display Auto power off / Power supply: 9V battery	
Sound / Noise Detector - 30 to 130dB	Measurement of plant, factory & machineries noise.Example, crushers machine for acoustical control purposes..		*Measuring range: 30dBA~130dBA / *Accuracy: ±1.5 dB / *Frequency range: 31.5Hz~8.5KHz *Digital Display: 4digits *Resolution: 0.1dB *Sample rate: 2 times/second *Microphone: 1/2 inch condenser *Power supply: 9V Battery *Operating condition: 0~40 10~80%RH 
Vibration Meter / Vibro Sensor	Vibration measurement of sensitive electrical control box, weighing scale, laboratory imbalanced machineries / equipments.	Vibration pickup Piezoelectric ceramic accelerometer (shear-type) Measurement range of acceleration 0.1~199.9m/s²; peak Measurement range of displacement 0.001~1.999mm p-p Measurement accurate +5% +2digits Single output Power supply 9V Alkaline battery Battery life 20 hours continuous use Operating temperature range 0~40°C	

POLYMER TESTING SERVICES

1. Acetaldehyde (AA)
2. Anti-Static – Surface Resistivity
3. Ash Content
4. Differential Scanning Calorimetry (DSC)
5. Differential Thermal Analysis (DTA)
6. FDA CFR 21.177.1630 (PET)
7. Fourier Transform Infra Red Spectroscopy (FTIR)
8. Intrinsic Viscosity (IV)
9. Mechanical Properties – Tensile, Elongation, Impact Strength, Coefficient of Friction, Blocking Force
10. Microscopy
11. Moisture Content
12. Optical Properties – Haze, Visible Light Transmission, UV Transmission, CIELab Color Measurement
13. Qualitative & Quantitative Analysis of RPET contaminants
14. ROHS Banned Substances Compliance
15. Thermogravimetric Analysis (TGA)



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