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Plastic Raw Material

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COMPANY PROFILE

Changzhou Powertech is a leading supplier of plastic raw material company in China, we are supplying to international and domestic market, engaging in marketing and distribution of various grades of plastic raw materials. Our main products are polyethylene (PE), polyvinyl chloride (PVC), Polystyrene (PS), polyethylene terephthalate (PET) and Polypropylene (PP). We are aiming at serving our customers with a strong sense of collaboration and establishing partnership with consumers and manufacturers, developing a strong worldwide field presence and offering a broad range of high quality products, by collaborating with leading financial and logistics partners.

There is a fast growing demand for plastic raw materials worldwide. To grasp the opportunity, over the years we have been constantly growing and building a solid reputation in plastic market. We have established a solid and long-term network with manufacturing plants, factories, as well as domestic and foreign distribution agents to ensure the distribution of the best quality products to customers.

We have built a team of creative, innovative and enthusiastic staff members, which are highly experienced in the field of plastic material distribution, and the extensive distribution system helps our products to be delivered to our customers on time.

Always highly valuing reputation we are working steadily to become a reliable and responsible partner with international and domestic customers, affirming the intrinsic value of an experienced and capable company in the plastic raw material market.

ABS RESIN

ABS plastic is composed of acrylonitrile, butadiene and styrene three chemical monomers. Each monomer has different characteristics: acrylonitrile has high strength, thermal stability and chemical stability; Butadiene has the properties of toughness and impact resistance. Styrene has easy processing, high finish and high strength. In terms of morphology, ABS is a non-crystalline material. The polymerization of the three monomers produces a terpolymer with two phases: one a continuous phase of styrene-acrylonitrile and the other a dispersed phase of polybutadiene rubber. The properties of ABS plastic material are mainly determined by the ratio of three monomers and the molecular structure in the two phases.

Applications

- Automobile industry
- Business equipments
- Telecommunications
- Electrical/electronic products
- Household appliances



Vacuum Cleaner



Safety helmet



Power Tools



Household appliances



Robot



Auto industry

Specifications

Grade	MFI (g/10min)	IZOD Impact Strength (KJ/m2)	Tensile Strength (Mpa)	Flexural Strength (Mpa)	Flexural Modulus (Mpa)	Heat Deflection Temperature (°C)	Rockwell Hardness
AG125	25	25	48	78	2400	85	110
AE8000	3.5	35	44	70	2300	104	100
AG571	6.5	43	43	65	2100	95	105
AG191	10	45	39	62	2000	94	100

Packaging





PP (Polypropylene) granules is a nontoxic, odorless, tasteless, creamy, high crystalline polymer with a density of only 0.90 -- 0.91g /cm3, one of the lightest plastics available. It is particularly stable with water, with a water absorption rate of 0.01%. PP has the advantages of excellent comprehensive properties, good chemical stability, good shape processing performance and relatively low cost.PP has the advantages of excellent comprehensive properties, good chemical stability, good shape processing performance and relatively low cost.

It can adapt to a wider range of application requirements through modifying, copolymerization,grafting,blending, reinforced filling, transparency, filling.

PP has a variety of applications. It is suitable for multiple processing methods such as injection molding, extrusion molding and blow molding and is widely used in the textile, packaging,electrical household appliances, automobile and real estate industries. PP plants have various technologies to produce homopolymer,random copolymer and impact copolymer PP with distinct properties. These products include BOPP film, CPP film,fiber, pipe, coating, yarn and injection-molding products.

Injection Grade

- valve
- fittings
- crates
- automotive
- closure
- appliances
- kettles
- food containers
- housewares
- toys
- non-prefilled syringe



PP Raffia



- | | |
|------------|----------------------|
| Woven bags | Colored stripe cloth |
| Tarpaulin | Ropes |
| | Sacks |

Recommended Appliaction

Material Type	POLYMER	Grade	MFR	MODEL	Application
PP	HOMO	raffia grade	3	T30s	woven bags
PP	HOMO	fiber grade	39	HT40S	spunbond fabric
PP	HOMO	fiber grade	40	S2040	spunbond fabric
PP	HOMO	injection grade	12	HP500N	furniture
PP	COPOLYMER	injection grade	29	511MK40T	toy
PP	HOMO	fiber grade	26	Y26	spunbond fabric
PP	COPOLYMER	injection grade	8	SP179	Automotive exterior parts
PP	HOMO	fiber grade	38	HP565S	spunbond fabric
PP	HOMO	fiber grade	28	Z30S	High-speed spinning,man-madefiers
PP	COPOLYMER	injection grade	1.8-3.2	K8003	Thin wall and industrial supplies
PP	COPOLYMER	injection grade	3.2	EP200K	furniture

Specificationction

PP Raffia			
Items	Unit	Property Value	Test Method
Color Granules	Pieces/kg	≤5	SH/T 1541
Black Granules	Pieces/kg	0	SH/T 1541
Big & Small Granules	g/kg	≤20	SH/T 1541
MFR	g/10min	3.5±0.5	GB/T 3682
Isotactic Index	%	≥180	GB/T 2412
Ash Content	mg/kg	≤300	GB/T 9345.1
Tensile Yield Stress	MPa	≥31.0	GB/T 1040.2
Tensile Fracture Stress	MPa	≥16.0	GB/T 1040.2
Tensile Fracture Nominal Strain	%	≥180	GB/T 1040.2
Yellow Index		≤4.0	HG/T 3862

Injection Molding Grade

Item	Property Value	Unit	Test Method
particle	0	Pieces/kg	SH/T 1541-2006
MFR	12.8	g/10 min	GB/T3682-2000
isotactic index	98.5	%	GB/T 2412-2008
Ash content	253	mg/kg	GB/T 9345.1-2008
Mold shrinkage	1.2	%	GB/T 17037.4-2003
Mold shrinkage	1.2	%	GB/T 17037.4-2003
Tensile yield strength	35.8	MPa	GB/T1040.2-2006
Flexural modulus	1280	MPa	GB/T9341-2008
heat deflection temperature under load	79.1	°C	GB/T 1634.2-2004
Optical properties	Property Value	Unit	HG/T 3862-2006
Yellowness Index	-1.6		

Packaging



PE RESIN



High density polyethylene (HDPE) is non-toxic, tasteless, no smell white particles, it is mainly a linear molecular structure and has little branching. It has a high degree of crystallization and high density,melting point is about 130°C, relative density of 0.941 ~ 0.960. It has good heat resistance and cold resistance, chemical stability, but also has high rigidity and toughness, good mechanical strength. Dielectric properties, environmental stress cracking resistance are also good.

Low Density Polyethylene (LDPE), commonly known as high-pressure Polyethylene,it has strong tensile and impact strength and excellent properties to resist puncture and impact at low temperatures,it is mainly used in plastic bags and agricultural film due to its low density and softness.LDPE has high fluidity and good processability. It is suitable for being used in all types of thermoplastic processing processes, such as injection molding, extrusion molding, blow molding, rotomolding, coating, foaming, thermoforming, hot-jet welding and thermal welding.

Linear Low Density Polyethylene (LLDPE) is a copolymer of ethylene and a small amount of advanced olefin in the presence of catalyst.LLDPE is similar to LDPE in appearance, with poor transparency and good surface gloss. LLDPE has the advantages of low temperature toughness, high modulus, bending resistance and stress cracking resistance, and good impact strength at low temperature. LLDPE is mainly used for making film, pipes, injection-molding products, blow-molding containers, rotationally-molding products and wire & cable covering material.

HDPE Application



1.HDPE Film Grade
Shopping bag/packageg Film



2.InjectionMolding Grade
Food Containers/Plastic Trays
Basins/Baskets/Furniture.



3.Extrusion Grade
Pipes/Tubes/Strapping
Tapes/Fibes/Filaments/Cable
Insulation



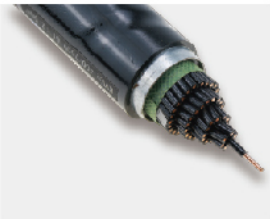
4.Blow Molding Grade
Bottles/Cans/Tanks /Barrels

Specification

Cable Grade HDPE		
Property	Unit	Typical Value
Mass density	g/cm 3	0.941-0.959
Melt flow Rate(190°C /2.16kg)	g/10min	≤1.0
Tensile yield strength	MPa	≥19.0
Flexural modulus	Mpa	≥965
Elongation at break	%	≥400
Impact Embrittlement Temperature	°C	MAX -118
Dielectric Constant	100KHZ	2.32
	1MHZ	2.31
Loss Tangent	100KHZ	MAX 0.0001
	1MHZ	MAX 0.0001
Volume resistivity	OHM-CM	



LDPE Application
AgriculturalFilm/Packaging
Film/FoodBags/Shrinkage
Film/Lining Film/Elastic Film



LDPE Application
Film/Pipes/cable insulation
containers

Film Grade HDPE				
Item	TTest Condition	Test Method	Value	Unit
Density		ISO 1183	0.944-0.955	g/cm3
MFR	190°C/2.16kg	ISO 1133	0.03-0.07	g/10min
Tensile Strength at Yield		ISO 527-2	22	MPa
Elongation at break		ISO 527-2	>350	%
ESCR	F50,50°C,100%	ASTM D-1693A	1000	h
VICAT		ASTM D-1525	126	°C

Blow Molding Grade HDPE				
Item	Test Condition	Test Method	Value	Unit
Density		ISO 1183	0.950~0.955	g/cm
MFR	190°C/2.16kg	ISO 1133	1.7~2.5	g/10min
Tensile strength at Yield		ISO 527-2	24	MPa
Elongation at break		ISO 527-2	>600	%

LDPE Resin			
Physical Properties	Test Method	Nominal Value	Unit
Density	ISO 1183	0.921	g/cm3
Melt Mass-Flow Rate (MFR)	ISO 1133	1.9	g/10min
Hardness			
Shore Hardness (shore D)	ISO 868	45	
Mechanical Properties			
Tensile Modulus	ISO 527-2	175	MPa
Tensile Strength	ISO 527-2	9.0	MPa
Tensile Strain(Break)	ISO 527-2	850	%
Modulus of Elasticity	Internal Method	250	MPa
Thermal			
Vicat Softening Temperature	ISO 306/A50	89.0	°C
Melting Temperature (DSC)	DIN 53765	108	°C
Peak Crystallization Temperature (DSC)	DIN 53765	97.0	°C
Heat of Fusion	DIN 53765	110	J/g

Packaging



PVC Resin



PET RESIN(PET CHIPS)



Polyvinyl chloride(PVC) is the third-most widely manufactured and used plastic raw material, it comes in two basic forms: rigid and flexible. The rigid type PVC is used in making of pipes and profiles applications such as doors and windows. PVC is used in construction because it is more economic than traditional metal materials in pipe and profile applications. It can be made softer and more flexible by the addition of plasticizers, the most widely used being phthalates. In this form, it is also used in clothing and upholstery, electrical cable insulation, plumbing, flooring, wall covering, artificial leather, signage, phonograph records, inflatable products and many applications where rubber is used.

Production of PVC resin generally relies heavily on the use of chlorine and crude oil. There are four manufacturing processes widely used in its production. They are the suspension,the mass,the emulsion/dispersion and the solution method. Pure poly(vinyl chloride) is a white, fine power.

Suspension Grade PVC Resin

Suspension grade PVC Resin is the most common grade used for the production of Pipes, Sheets, Cables, Film, Bottle, etc based on their K Values. Various K Values and applications are as following



- K 55-59 – For Rigid Pipes / Bottles / Pipe fittings, etc
- K 66-68 – For Rigid Pipes / Hard Cables / Sheets Window Profile, etc
- K 71-72 – For Cables / Film, etc

Paste grade PVC Resin is mostly used for the production of artificial leather, wall paper, flooring, clothing and upholstery, phonograph records, inflatable products and many applications where rubber is used.

CPVC(Chlorinated Polyvinyl Chloride) is a popular engineering material due to its relatively low cost, high glass transition temperature, high heat distortion temperature, chemical inertness, and flame and smoke properties. CPVC is used in a variety of industrial applications where a high functional temperature and resistance to corrosive chemicals are desirable. Besides pipe and fittings, it is used in pumps, valves, strainers, filters, sheet for fabrication into storage tanks.

Packaging



Specifications			
Items	SG3	SG5	SG8
K value	72-71	68-66	59-55
Viscosity Number(ml/g)	135-127	118-107	86-73
Average Degree of Polymerization	1370-1251	1135-981	740-650
Number of Impurity Particle	≤16	≤16	≤20
Volatile Sbstance	≤0.3	≤0.4	≤0.4
Volatile Content	≥0.45	≥0.48	≥0.50
Whiteness(160℃,10min)%	≥78	≥75	≥75
Packing	25kgs two layers draft paper bag or 1000kgs PP bag		

Polyethylene Terephthalate(PET) is the most common thermoplastic polymer resin of the Polyester family,it is used in fibers for clothing, containers for liquid and food, thermoforming for manufacturing and in combination with glass fiber for engineering resins.The majority of the world's PET production is for synthetic fibers, followed by bottle production. In the context of textile applications, PET is referred as POLYESTER. Whereas PET is generally used in relation to packaging,PET is also used for making PET Films.

Features

- 1.High melting point, good heat resistance, suitable for use at UL 140C continuously.
- 2.High mechanical strength, especially for stiffness
- 3.Good chemical resistance, excellent anti-corrosion for organic-solvents.
- 4.Excellent electrical properties, be suitable for use as an insulation material
- 5.Light in weight, less noise and anti-corrosion, as compared with metals
- 6.Low water absorption better dimensional stability.
- 7.Good surface gloss, easy painting and coloring

Applications

- ① It is widely used in packaging, electronics, health care, construction, automotive and other fields.
- ② It is used in synthetic fibers, and engineering resins often in combination with glass fiber.
- ③ Beverage, food and other liquid containers.

Bottle Grade PET Resin

Plastic bottles have been the basic necessity for any industry selling liquid products to the consumers. Hence there is a great demand of plastic bottle all over the world. Many types of plastic bottles are made from Bottle Grade PET Resin. So, there is a huge demand of bottle grade pet chips world-wide. End use of Bottle grade chips mainly depends on the intrinsic viscosity (IV).



- PET IV 0.80 +/- 0.02 - For Water Bottle / PET Sheet
- PET IV 0.82 or 0.83 +/- 0.02 - For Edible Oil Bottle
- PET IV 0.84 or 0.85 Or 0.86 +/- 0.02 - For CSD Bottles
- PET IV 0.76 or 0.78 +/- 0.02 - For Hot Fill Bottle / Water Bottle

Packaging



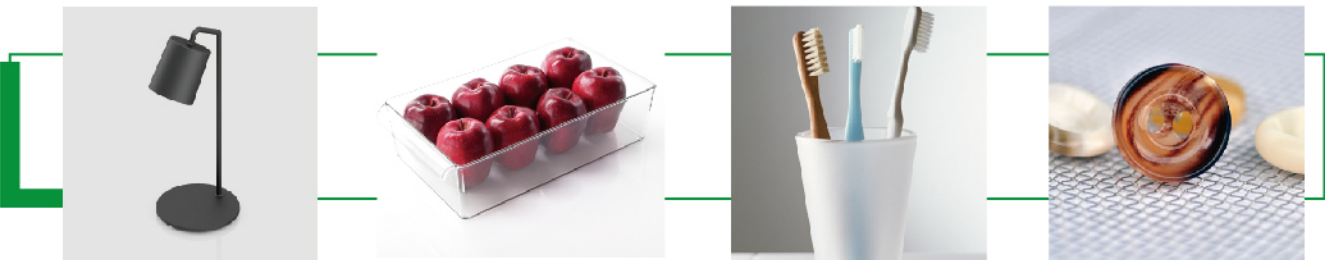
Specifications		
Parameter	Unit	Specification
Intrinsic Viscosity(IV)	dL/g	0.80±0.02
Crystallinity	%	≤60
Content of COOH	Mol/t	≤26
Content of Acetaldehyde	ppm	≤1.0
Color Value		
L-Value	--	≥83
B-Value	--	≤1.0
Dust Content	ppm	≤100
Melting point	°C	244±2
Weight. of 100 chips	g	1.55±0.10

PS Resin



Polystyrene (PS). PS is a thermoplastic non-crystalline resin, colorless, odorless, tasteless and shiny, transparent bead or granular solid. It is hard and brittle, colorless and transparent, can be mixed with various dyes to produce different colors, and has good rigidity, gloss and chemical resistance. Light weight, low price, low water absorption, dimensional stability, good coloring, good electrical properties, transparent products, superior performance, PS is mainly divided into general-purpose polystyrene (GPPS), impact-resistant polystyrene (HIPS) and expanded polystyrene (EPS).

GPPS has broad application prospects in food packaging. In the electromechanical industry, instrumentation, communication equipment industry, etc., it has been widely used in various instrument shells, lampshades, optical parts, instrument parts, transparent windows, transparent models, chemical acid storage tanks, acid delivery tanks, telecommunications parts, high frequency Capacitors, high-frequency insulation gaskets, brackets, inserts and refrigeration insulation materials, etc. It is also widely used in various daily necessities like bottle caps, buttons, containers, decorations, combs, toothbrushes, soap boxes, cigarette boxes and toys.



HIPS high impact polystyrene. A versatile brittle plastic, one of the cheapest engineering plastics. Impact-resistant PS has the advantages of easy processing, good performance and low price, so it is used to manufacture products and industrial products for many purposes. HIPS is a modified material of PS, which contains 5-15% rubber component in the molecule. Its toughness is about four times higher than PS, and its impact strength is greatly improved (high impact polystyrene). There are flame retardant grade, stress cracking resistance grade, high gloss grade, extremely high impact strength grade, glass fiber reinforcement grade and low residual volatilization grade.

The largest specific use of HIPS is as packaging and disposable materials, especially food packaging materials and dietary tableware. Such as: daily packaging containers, vending machine and dispensing cups, various covers, plates, bowls and so on. Disposable items such as dishes, bottle caps, safety razors, pen holders, etc.



Packaging



Recommended Appliaction

GPPS 525

Food container, stationery, toys, hangers, lighting, CD case, tape case, cosmetic container

Pysical Property	Standard	Value	Unit
Melt Flow rate	ISO 1133	3.5	g/cm3
Mechanical Behavior	Standard	Standard	Unit
Tensile Modulus	ISO 527	1400	Mpa
Tensile Strength Yield	ISO 527	48	Mpa
Elongation Break	ISO 527	--	%
Flexural Modulus	ISO 178	3100	Mpa
Charpy Impact Strength		1.6	KJ/m2

GPPS 251

Advertising board, foamed tray, cosmetic packaging, beading, shower door, etc.

Pysical Property	Standard	Value	Unit
Melt Flow rate	ISO 1133	2.4	g/cm3
Mechanical Behavior	Standard	Standard	Unit
Tensile Modulus	ISO 527	1400	Mpa
Tensile Strength Yield	ISO 527	48	Mpa
Elongation Break	ISO 527	--	%
Flexural Modulus	ISO 178	3100	Mpa
Charpy Impact Strength		10	KJ/m2

HIPS 622

Refrigerator liners, fatty food packagings, etc.

Pysical Property	Standard	Value	Unit
Melt Flow rate	ISO 1133	4,8	g/cm3
Mechanical Behavior	Standard	Standard	Unit
Tensile Modulus	ISO 527	1700	Mpa
Tensile Strength Yield	ISO 527	48	Mpa
Elongation Break	ISO 527	50	%
Flexural Modulus	ISO 178	3100	Mpa
Charpy Impact Strength		125	J/m