新疆天业
XINJIANG TIANYE

产品手册

Product Catalogue

团结 奉献 拼搏 创新
UNITY DEDICATION STRIVING INNOVATION

新疆天业（集团）有限公司
XINJIANG TIANYE (GROUP) CO.,LTD

公司简介
Company profile

新疆天业（集团）有限公司组建于1996年7月，是工农商一体化的大型国有企业。天业集团控股的新疆天业股份有限公司于1997年6月在上海交易所上市、新疆天业节水灌溉股份有限公司于2006年2月在香港成功上市。天业集团所属产业涉及热电、化工、电石、水泥、节水器材、现代农业、塑料制品、矿业及现代商贸、现代物流等多个领域。

天业集团发扬“团结、奉献、拼搏、创新”的企业精神，通过二十多年的发展，形成了140万吨聚氯乙烯树脂、100万吨离子膜烧碱、215万吨电石、400万吨新型干法电石渣制水泥、180万千瓦热电、20万吨1,4-丁二醇、95万吨乙二醇和600万亩节水器材生产能力，拥有国家认定的企业技术中心、国家节水灌溉工程中心、博士后科研工作站和氯碱化工国家地方联合工程研究中心等国家级高水平研发平台。

天业集团产品——农用地膜、节水器材、PVC管材、聚氯乙烯树脂、烧碱获得新疆名牌产品称号；节水微灌标准体系标准项目获中国标准创新贡献奖；天业集团研发的西部干旱地区节水技术及产品开发项目、节水滴灌技术创新工程项目、聚氯乙烯专用树脂系列产品的开发与产业化示范项目、高纯/超高纯化学品精馏关键技术与工业应用荣获国家科技进步二等奖。2014年，集团荣获首届“兵团质量奖”。集团承担的863计划重点项目——膜下滴灌水稻亩产已达836.9公斤。天业灌溉系统在国内外已累计推广近8000多万亩，并成功走向世界17个国家。天业节水灌溉技术国际科技合作基地成为国家级节水灌溉技术国际科技合作基地，膜下滴灌节水灌溉工程项目荣获第三届中国工业大奖表彰奖。

天业集团连续多年进入中国企业500强、中国制造业500强，是全国第一批循环经济试点企业、国家技术创新示范企业、全国科普教育基地、循环经济教育示范基地和资源节约型、环境友好型企业创建试点企业，先后荣获全国国有企业“四好”领导班子先进集体、全国“五一劳动奖状”、全国循环经济工作先进单位、中国工业行业履行社会责任五星级企业、全国工业品牌培育示范企业、国家知识产权战略实施工作先进集体、制造业信息化科技工程应用示范企业、全国两化融合管理体系贯标试点企业、中国学习型组织优秀单位、国家技能人才培育突出贡献企业奖、全国专业技术人才先进集体、全国绿化模范单位、第二届中国质量奖提名奖、全国模范劳动关系和谐企业、全国脱贫攻坚先进集体。2016年12月11日，天业集团荣获第四届中国工业大奖。

Company Profile

Xinjiang Tianye (Group) Co., Ltd. was established in July 1996 as a large state-owned enterprise integrating industry, agriculture and commerce. Xinjiang Tianye Co., Ltd., controlled by Tianye Group, was listed on the Shanghai Stock Exchange in June 1997, and Xinjiang Tianye Water-Saving Irrigation System Co., Ltd. was successfully listed on the Hong Kong Stock Exchange in February 2006. The industries of Tianye Group cover multiple fields such as thermal power, chemical industry, calcium carbide, cement, water-saving equipment, modern agriculture, plastic products, mining, modern commerce, and logistics.

Adhering to the enterprise spirit of "unity, dedication, dedication, and innovation", Tianye Group has developed for more than 20 years and has formed a production capacity of 1.4 million tons of PVC resin, 1 million tons of ion membrane caustic soda, 2.15 million tons of calcium carbide, 4 million tons of new dry method carbide slag for cement production, 1.8 million kilowatts of thermal power, 200,000 tons of 1,4-butanediol, 950,000 tons of ethylene glycol and 400,000 hectare of water-saving equipment. It has national-level high-level R&D platforms such as an enterprise technology center recognized by the state, a national water-saving irrigation engineering center, a post-doctoral research station and a national-local joint engineering research center for Chlor-alkali chemical industry.

Tianye Group's products such as agricultural film, water-saving equipment, PVC pipes, PVC resin, and caustic soda have been awarded the title of Xinjiang Famous Brand Products. Its water-saving micro-irrigation standard system project won the China Standard Innovation Contribution Award. Projects developed and industrialized by Tianye Group such as western drought-prone area water-saving technology and product development, water-saving drip irrigation technology innovation project, development and industrialization demonstration project of PVC special resin series products, and key technology and industrial application of high-purity/ultra-pure chemical products have won the second prize of national scientific and technological progress award. In 2014, the group won the first "Corps Quality Award". The group's 863 Plan key project - the yield per mu of rice under sub-membrane drip irrigation has reached 836.9 kilograms. Tianye irrigation system has been promoted in more than 17 countries worldwide, covering nearly 80 million mu. Tianye Water-Saving Irrigation Technology International Science and Technology Cooperation Base has become a national-level international science and technology cooperation base for water-saving irrigation technology. Its sub-membrane drip irrigation water-saving irrigation engineering project won the third China Industrial Award Commendation Award.

Tianye Group has been listed in the China Top 500 and China's Top 500 Manufacturing Enterprises for many consecutive years. It is one of the first batch of pilot enterprises for circular economy in China, a national-level demonstration enterprise for technological innovation, a national-level science popularization education base, a demonstration base for circular economy education and resource-saving and environment-friendly enterprise creation pilot enterprise. It has won the Advanced Collective of National State-Owned Enterprise "Four Good" Leadership Team, National "May 1st Labor Medal", National Advanced Unit for Circular Economy Work, Five-Star Enterprise for Fulfilling Social Responsibility in China's Industrial Industry, National Industrial Brand Cultivation Demonstration Enterprise, National Advanced Collective for Implementation of National Intellectual Property Strategy, Manufacturing Informationization Science and Technology Engineering Application Demonstration Enterprise, National Pilot Enterprise for Integration of Informatization and Industrialization Management System, Excellent Unit of China Learning Organization, Outstanding Contribution Enterprise Award for National Skilled Talents Cultivation, National Advanced Collective of Professional and Technical Talents, National Greening Model Unit, Nomination Award of the Second China Quality Award, National Model Enterprise for Harmonious Labor Relations, and National Advanced Collective for Poverty Alleviation. On December 11, 2016, Tianye Group won the fourth China Grand Award for Industry.

PVC RESIN- SUSPENSION

CAS NO： 9002-86-2 **Packing:**25kg paper bag

Application:PVC RESIN mainly used for plastic doors and windows, plastic steel doors and windows, plastic pipe fittings, pipes, agricultural film, wire, cable, plastic pellets, footwear processing fields and other fields.

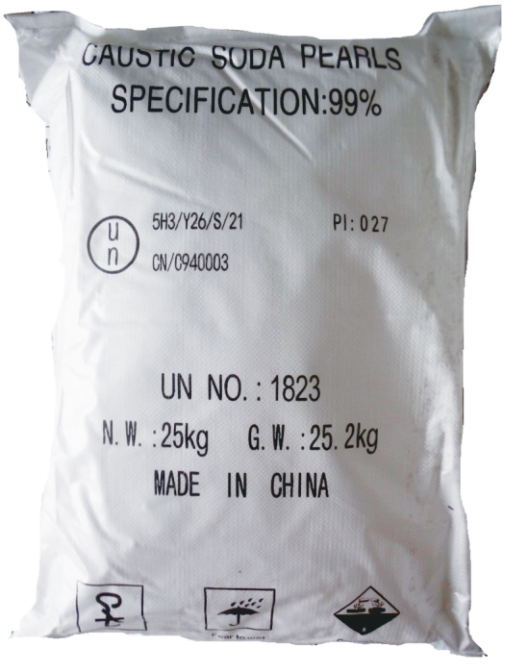
Items		SG3	SG5	TY-800	SG8
Viscosity, ml/g		135-127	118-107	94-86	86-73
K Value		72-71	68-66	62-60	59-55
Average degree of Polymerization		1370-1251	1135-981	850-750	740-650
Impurity particles,pieces ≤		16	16	20	20
Volatile content(including moisture) % ≤		0.3	0.4	0.3	0.4
Apparent density g/ml ≥		0.45	0.48	0.52	0.52
Residue after sieve %	0.25mm,sieve pore	1.6	1.6	1.2	1.6
	0.063mm,sieve pore	97	97	97	97
Number of fish eye per 400cm^2 ≤		20	20	30	30
Plasticizer absorption capacity, value of 100g Resin ≥		26	19	12	12
Whiteness degree(160℃,10min), % ≥		78	78	78	75
Conductivity of aqueous extract,us/(cm.g) ≤		5	-	-	-
VCM residual,μg/g ≤		1	1	1	1

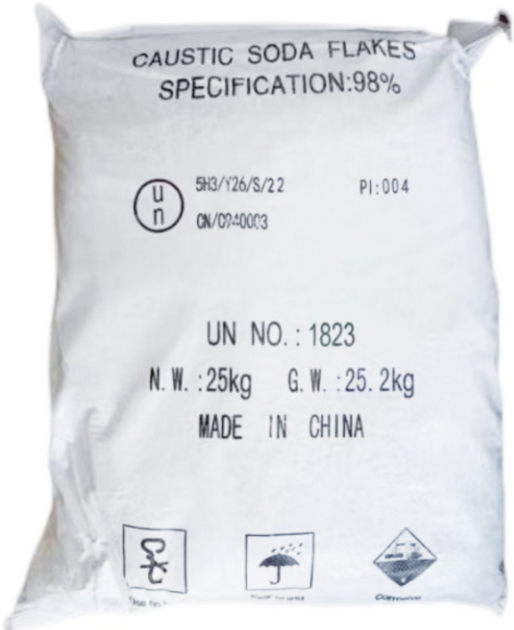
Caustic soda

CAS NO： 1310-73-2 **Packing:**25kg PP bag

Application: Caustic soda is mainly used in chemical, petrochemical, pulp and paper making, medicine, non-ferrous metallurgy, textile, detergent, viscose silk, fabric bleaching, aniline dyes, soap, aluminum and metal sodium, soluble glass, alkaline battery and other industries. In water treatment processes and other areas of the national economy, degreasing and processing equipment is carried out in food industry enterprises (milk factories, oil factories, liqueurs, tobacco enterprises) that do not come into contact with food, as well as in other industries.

Item	Caustic soda pearls	Caustic soda flakes
NaOH ≥ %	99.0	98.0
Na_2CO_3 ≤ %	0.5	0.8
NaCL ≤ %	0.03	0.05
Fe_2O_3 ≤ %	0.005	0.008





Emulsion PVC resin (1)

CAS NO： 9002-86-2 **Packing:** 25 kg bag

Application: The scope of emulsion polyvinyl chloride is quite wide. So, it is used in the production of sealants, wallpaper, sealants, sheets, pipes, films for various purposes, artificial leather, water-dispersion glue, covered awnings, metal-plastic, linoleum, furniture edging. Also, this polymer is used in the manufacture of gramophone records, window and door profiles.

Processing of emulsion PVC into products is carried out by extrusion, pressing, injection molding. When processed into soft products - through the manufacture of pastes.

In transportation and storage: the packaging does not tear, the products will not be contaminated.

Items		Product		
		TPH-31	TPM-31	TPL-31
Average polymerization degree		1550-1750	1230-1430	880-1080
Number of impurity particles	≤	12	12	12
Volatile content	≤	0.4	0.4	0.4
Apparent density ,g/ml	≥	0.25	0.25	0.25
Scraper fitness ,μm		60	60	60
Filtering time ,s/100g	≤	70	70	70
VCM residual,μg/g	≤	5	5	5
Standard viscosity of paste resin (B type) /mpa.s	<	3500	3500	3500
S-type flowability, g/s	≥	300	300	600

Emulsion PVC resin (2)

CAS NO： 9002-86-2 **Packing:** 20kg bag

Application: P-450 is commonly used to produce foam layers, foamed PU leather, and wallpaper for elastic floors.

Name: Emulsion PVC P-450		
Appearance: white powder		
Items	STANDARD	TEST RESULTS
Average Polymerization degree	1000±150	1138
Viscosity 10^{-3} Pa.s≤（50r/min）60 DOP	7000	6050
Volatile Matter(include water)	0.4	0.24
Particle size (0,063мм Sieve hole)	1	0.9
VCM residual,ppm	10	10
Number of impurity particles	20	17
The result of the analysis of ash content %≤	0.25	0.11






Emulsion PVC resin (3)

CAS NO： 9002-86-2 **Packing:** 20kg bag

PB1156 is used to treat the foaming layer of sports floor, pillows, gloves and other products.
PB1152C is used to process anti-slip pads, yoga mats, floor leather, moisturizing materials, decorative materials and other products.
PE1311 (high viscosity, high foam) is used to treat the inner skin of the car, anti-slip gaskets and other products.
PB108-2 is used for the treatment of wallpaper, PU leather, sports floors and other products.
PB1202 is used for the processing of adhesive, coating and other products.

Item	With high foaming properties			With low foaming properties	
	PB1156	PB1152C	PE1311	PB108-2	PB1202
Viscosity ml/g	100~120	100~120	115~135	95~115	100~120
K values	66	68	70	65	67
Average Polymerization degree	900~1150	900~1150	1100~1350	850~1100	900~1150
Volatile Matter ≤	0.40	0.40	0.40	0.40	0.40
Apparent density , g/m3	0.30~0.45	0.30~0.45	0.30~0.45	0.30~0.45	0.30~0.45
Average particle size, μm	15±5	15±5	15±5	15±5	15±5
VCM residual, μg/g ≤	5	5	5	5	5
PVC:DOP	100:100	100:100	100:100	100:60	100:60
Standard paste viscosity Pa.s ≤	3.0~6.0	3.0~10.0	40.0~80.0	3.0~8.0	3.0~7.0

Emulsion PVC resin(4)

CAS NO： 9002-86-2 **Packing:** 20kg bag

PB158 is used to process disposable gloves, sports floors, conveyors and other products.
PB1702 is used to process floor layers, toys and other products.
PB1704 is used to process wear-resistant products such as sports floors.
PB1302 is used for processing toys, artificial leather, conveyors and other products.
PB128 is used for processing toys, artificial leather, conveyors and other products.

Item	With high wear-resistant properties			With transparent properties	
	PB158	PB1702	PB1704	PB1302	PB128
Viscosity ml/g	148~168	155~175	170~190	115~135	118~138
K values	77	79.5	82	70	71
Average Polymerization degree	1500~1800	1760~2130	2050~2420	1100~1350	1150~1400
Volatile Matter ≤	0.40	0.40	0.40	0.40	0.40
Apparent density , g/m3	0.30~0.45	0.30~0.45	0.30~0.45	0.30~0.45	0.30~0.45
Average particle size, μm	10±5	15±5	15±5	15±5	10±5
VCM residual,μg/g ≤	5	5	5	5	5
PVC:DOP	100:60	100:60	100:60	100:60	100:60
Standard paste viscosity Pa.s ≤	2.0~3.5	3.0~5.0	3.0~5.0	3.0~5.0	2.0~3.5

Ethylene Glycol（ MEG ）

CAS NO： 107-21-1 **Packing:** drum 230kg/IBC/Tank

Application: The major end uses of MEG are making polyester,polyester resin,a hygroscopic agent,plasticizer,surface active agent,synthetic fiber,cosmetics and explosives,and used as a dye ink solvent,compound engine antifreeze,gas dehydrating agent,manufacturing resin,which also can be used for glass paper,fiber,leather,adhesive wetting agent.It can be used to produce synthetic resin PET,fiber grade PET polyester fiber,bottle grade PET used in the production of mineral water bottles and also alkyd resin,oxaldehyde,and antifreeze as well.In addition to automotive antifreeze,also used for industrial energy transformation,which is commonly called refrigerating medium.

Items	Index		
	Superior	First	Qualified
Appearance	Colorless And Transparent No Mechanical Impurity	Colorless And Transparent No Mechanical Impurity	Coloress or Slight Yelow No Mechanical Impurity
Ethylene Glycol,w/w,% ≥	99.8	99.0	
Chroma/Hazen Unit(Pt-Co Colour Number)：Before Heating，No. ≤	5	10	40
After Heated With Hydrochloricacid,No. ≤	20	-	-
Density(20℃),g/m^3	1.1128-1.1138	1.1125-1.1140	1.1120-1.1150
Boiling Range(0℃,0.10133MPA) Initial Boiling Point,℃ ≥	196	195	193
Final Boiling Point,℃ ≤	199	200	204
Moisture,w/w,% ≤	0.10	0.20	-
Acidity(On the Basis of Acetic Acid),% ≤	0.001	0.003	0.01
Fe,w/w,% ≤	0.00001	0.0005	-
Ash,w/w,% ≤	0.001	0.002	
Diethylene Glycol,w/w,% ≤	0.10	0.80	
Aldehydes,w/w,(on the Basis of Formaldehyde),% ≤	0.0008	-	
UV Transmittance,%:220nm ≥	75		
UV Transmittance,%:275nm ≥	92	-	
UV Transmittance,%:350nm ≥	99		

1,4-Butanediol（ BDO）

CAS NO： 110-63-4 **Packing:** drum 200kg/Tank

Applications: BDO is an important organic and fine chemical raw material, widely used in textile, chemical and pharmaceutical fields, among which, PTMEG and PBT engineering plastics are the traditional application fields of BDO. The downstream industries involve spandex needed for textile and garment and production of epidemic prevention materials, biodegradable plastic PBAT and PVP, an auxiliary material for lithium batteries in new energy fields, building materials and pharmaceuticals.

Items	Specification	
	Superior	Qualified
1,4-Butanediol, W/% ≥	99.7	99.5
Chroma/Hazen Unit(Pt-Co Colour Number) ≤	10	10
Moisture，W/% ≤	0.03	0.05

PP

CAS NO:9003-07-0 **Packing:**25kg PE bag

TYPE	USAGE
T4401	Hot and cold water piping and fittings.
D(Y)-ZK0640P	For construction pipes, industrial pipes, agriculture, green cold water pipe. Cold water piping for farm use.
S1003(T30S)	Textile single fiber, carpet lining, rope,shared membrane.
S2025	Non-woven fabric, staple fiber, BCF wire (polypropylene texture pneumatic connection wire)
S2040	Non-woven fabric, high-speed forming yarn, long fiber, fine fiber.
K9928H	It is suitable for injection molding products with high melting point index such as automobile modification materials and washing machine inner barrels.

PE

CAS NO:9002-88-4 **PACKING:**25kg PE bags

TYPE	USAGE
DGDX-6095	Packaging film, shopping bags
LL0209AA	Packaging film, agricultural film, film lining
DFDA7042	
2426H	
TUB121N3000	Pipeline PE100, different support pipe, steel skeleton composite pipe, steel reinforced bellows, natural gas pipeline,
TUB121N3000B	
UHXP-4808	
UHXP-4808B	
5000S	Fishing nets, ropes, flat straps, strapping straps

GPPS

CAS NO:9003-53-6 **Packing:** 25kg PE bag/large bag

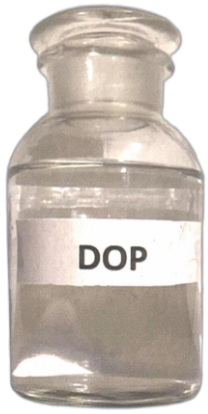
TYPE	USAGE
GPPS-500	Generally used for processing laboratory testing products, cosmetic packaging, insulation and electrical packaging, CD cases, lighting equipment and so on.
GPPS-500N	Generally used for processing laboratory testing products, cosmetic packaging, insulation and electrical packaging, CD cases, lighting equipment etc.
GPPS-500NT	The product is transparent cylindrical or flat particles, the particle size in any direction is 2mm-5mm, with excellent transparency, processing and forming performance and mechanical strength, usually used in the production of LED panels.

Dioctyl Phthalate（DOP）

CAS NO:8031-29-6 **Packing:** IBC/drum 200kg

Application: DOP is actively used as a plasticizer for the production of a variety of structures and materials from PVC. It has a high level of plasticization and cold resistance.
It is used for the manufacture of the following PVC products:Wall and floor coverings,Hoses,PVC based compounds,Artificial leather,Toys,Gloves,Production of super concentrates and paints.

Advantages of using DOP in PVC compositions:
Excellent compatibility with PVC resins,No color, odor or toxicity,High plasticizing efficiency,Low migration rate,Reduced melt viscosity,Reduced adhesion to metal,Increased internal lubricity, Increased tensile strength,Lower processing temperature,Extended operating temperature range,High thermal stability and light resistance.



Dioctyl Terephthalate（DOTP）

CAS NO: 6422-86-2 **Packing:** IBC/drum 200kg

Applications: It can be widely used in artificial leather, polyurethane, PVC cable material, plastic film, plastic sandals, foam sandals, doors, windows and window seals, PVC profiles, soft boards, various soft and hard pipes, decorative materials, foam hard boards and all products using plasticizers, which can reduce the production cost of enterprises by more than 30%.

Using characteristics:

1. It works better with DOP, DBP and ATBC.

The general use ratio is DOP:synthetic plant ester=1:1

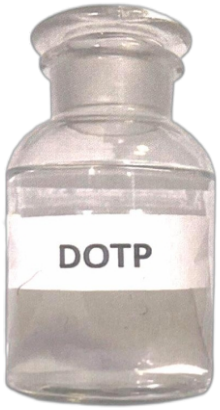
2. Mechanical properties are better than DOP and DBP.

Excellent durability and softness of products

3. It can inhibit the exudation of grease.
4. Good compatibility with PVC.
5. It can shorten the stirring time and improve the processing fluidity.
6. No need to change the processing conditions.

It can be replaced by medium amount in the formula.

7. Guarantee the quality of products and can greatly reduce the production cost.



PET RESIN (PET)

CAS NO: 25038-59-9

Packing: Jumbo bag

HJ-801
Application: Drink bottled water, food oil, condiments, sweets and other packaging bottles, pet sheets.

HJ-802
Application: Bottles for food oil, bottles for spirits, bottles for medicines, pet sheets.

Item		Unit	Index (HJ-801)	Index (HJ-802)
Intrinsic Viscosity		dl/g	0.800±0.015	0.830±0.015
Acetaldehyde		ug/g	≤1.0	≤1.0
Index	b	/	≤1.0	≤1.0
	L	/	≥80.0	≥80.0
DEG Content		%	1.30±0.2	1.30±0.2
Carboxyl		mol/t	≤30	≤30
Melting Point (DSC)		℃	247±2	247±2
Powder		mg/kg	≤100	≤100
Discolor particles		grain/500g	-	-
Moisture		%	≤0.2	≤0.2
Density		g/cm3	1.4±0.01	1.4±0.01
Ash Content		%	≤0.07	≤0.07

Polyester Filament

CAS NO： 25038-59-9

Application: Polyester filament can be used directly for weaving without spinning. Polyester filament is a short fiber, outwardly similar to cotton, which can be made of fabric by spinning or netting.

Specification	1.5D*38MM
Item	Result
Line density dtex	1.4
Tensile strength CN/dtex	6.69
The difference in length %	24.31
Double stem fiber mg/100g	1.42
Vice mg/100g	1.65
Specific resistance, см	10.8
Oil percentage	0.194
Return rate %	0.45

Acrylic Processing Aid (TY - 001)

CAS NO: 7732-18-5 **Packing :**25 kg / bag

Application : The method of acrylic processing acid TY-001 is a versatile treatment tool developed by the research and development center of our company, has outstanding advantages in increasing the efficiency of treatment. Properties of PVC compounds. Production properties of PVC mixture with addition TY- 001 have significantly improved, which does not have a negative impact on impact strength, thermal stability, tensile strength and other properties. In PVC formula the use of TY-001 not only improves some important processing characteristics, such as melt strength, melting, but also promotes melt homogeneity. As a result, the wave decreases, melt and plate rupture decreases, easily soars, glitter of the surface of finished PVC products increases and production lines stop. Productivity has improved significantly.

Melamine

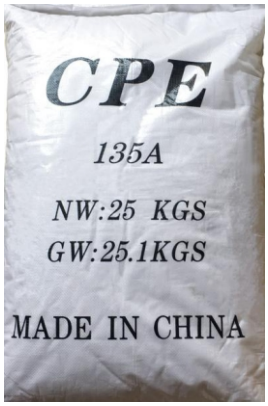
CAS NO: 108-78-1 **Packing:**25 kg/ bag

Application : Melamine is widely used in industrial organic synthesis, including ion exchange resins, tanners, hexachloromelamine used in the manufacture of dyes and herbicides. Most of the melamine produced is used in the production of melamin-formaldehyde resins.
Melamin-formaldehyde resins are used in polymer compositions (adhesives, varnishes), as a binding polymer for press compositions with various fillers (pulp, glass fiber, wood flour) and as concrete plasticizers, as well as as structural material for the production of finished products (dishes, filters and foam (foam melamin).

CPE

CAS NO: 63231-66-3 **Packing :**25 kg / bag

Application : It is a new type of synthetic material, white powder, it has good heat resistance, ozone resistance ,weather resistance and aging resistance, is an excellent resistant modifier in PVC plastic production, widely used in cables, wires, hoses, adhesives, rubber plastics, sealing materials, fire-resistant transport belts, thin films and various profiles, tubes and other products. CPE is also mixed with PP, PE,ABS and others, in order to improve fire resistance, ageing resistance and insulating properties of these plastics.



Titanium Dioxide

CAS NO: 1317-80-2 **Packing :**25 kg / bag

Type: R-996, THR-218, BLR-895, R-666,PGA-110

Application : Titanium dioxide - white powder, is an important raw material in industrial production, is widely used in paints, plastics, paper, printed ink, chemical fiber, rubber, cosmetics, ceramics, enamel, electronics, food , medicine and other industries, one of the strongest pigment in white paint, with excellent concealment and color strength, suitable for the production of opaque white products. Type R is especially suitable for plastic products, which are used on the outside environment, can give the product good light stability. Type A is mainly used in articles for domestic use. It has a high degree of white, large coating, strong colouring and better dispersion.

Biodegradable Resin PBAT

CAS： 55231-08-8

Application: PBAT belongs to biodegradable plastics,which is the characteristic of PBA and PBT. It has good tensile strength and elongation at break, with good heat resistance and outstanding processability. In addition, it also has excellent biodegradability, it is the best biodegradable plastic in terms of processability in current market. PBAT is a kind copolyester product with promising development prospects, which has good film properties, excellent flexibility and biodegradability, good thermal stability and excellent mechanical properties. Can be injection molding, extrusion, blow molding and other processing forms, widely used in sheet, mulching films, packaging, foaming and others.

Tetrahydrofuran (THF)

CAS NO :109-99-9 **Packing:** 180KG DURM

Application:THF is an important raw material for organic synthesis and an excellent solvent, tetrahydrofuran has good solubility for many organic substances, it can dissolve all organic compounds other than polyethylene, polypropylene and fluorine resins, in particular, it is widely used as a reactive solvent for polyvinyl chloride, polyvinylidene chloride and butylaniline, which has a good solubility effect. As a common solvent, tetrahydrofuran has been commonly used in surface coatings, protective coatings, inks, extractants and surface treatment of artificial leather, tetrahydrofuran is an important raw material for the production of polytetramethylene ether glycol (PTMEG), and the main solvent in the pharmaceutical industry. It is used as a solvent for natural and synthetic resins (especially vinyl resins), and is also used in the production of butadiene, adiponitrile, adipic acid, adipic acid, adipic acid, adipic diamine and so on.

Item	Index
THF,wt ≥ %	99.95
H_2O,wt ≤ %	0.02
Chroma/Hazen Unit(Pt-Co Colour Number),wt ≤ %	5