Gregeo

Gregeo

Total Biodegradation Green New Material Green Original Ecology

Gregeo

Company Profile

Jiangsu Ruian Applied Biotechnology Co., Ltd. (also known as Gregeo) is a leading supplier of integrated solutions for new environmental protection materials. We are committed to solving the increasingly severe plastic pollution and reshaping the green ecology for the sustainable development of human beings and nature.

Gregeo insists on technological innovation and has developed a variety of new material products independently, with product lines covering entirely biodegradable materials. Since 2017, Gregeo has comprehensively deployed the new materials industry chain with biodegradable plastics as the core, radiating nationwide and toward the world. Going forward, our company will focus on building new material bases in Shandong and Hebei, which are expected to be completed with a total annual output of 180,000 tons of PBAT, 30,000 tons of PBS, 100,000 tons of modified materials , 55,000 tons BDO, ect.

Looking ahead, we will adhere to the business philosophy of "continuously maximizing green value for our customers, society and ecological environment". We expect to work with you to guard our future!

Development Process

2025

Scale:1000 Mu Production base
Capacity: PBAT 180,000 ton/year
Modified materials: 100,000 ton/year
BDO: 55,000 ton/year
PBS: 30,000 ton/year

2021

Shandong PBAT base was put into production
Launched Hebei base

2020

Modified material base were put into production
Ruian Research Laboratory

2019

Production base in Shandong started construction

2018

Established cooperative projects with Tianjin University Founded Institute of Polymer Materials
Launched biodegradable materials project

2017

Started to cooperate with Chinese academy of science on the technical breakthrough projects

2013

Qian'an Yihuida New Energy Co., Ltd.
Production capacity
LNG: 100,000 tons/year

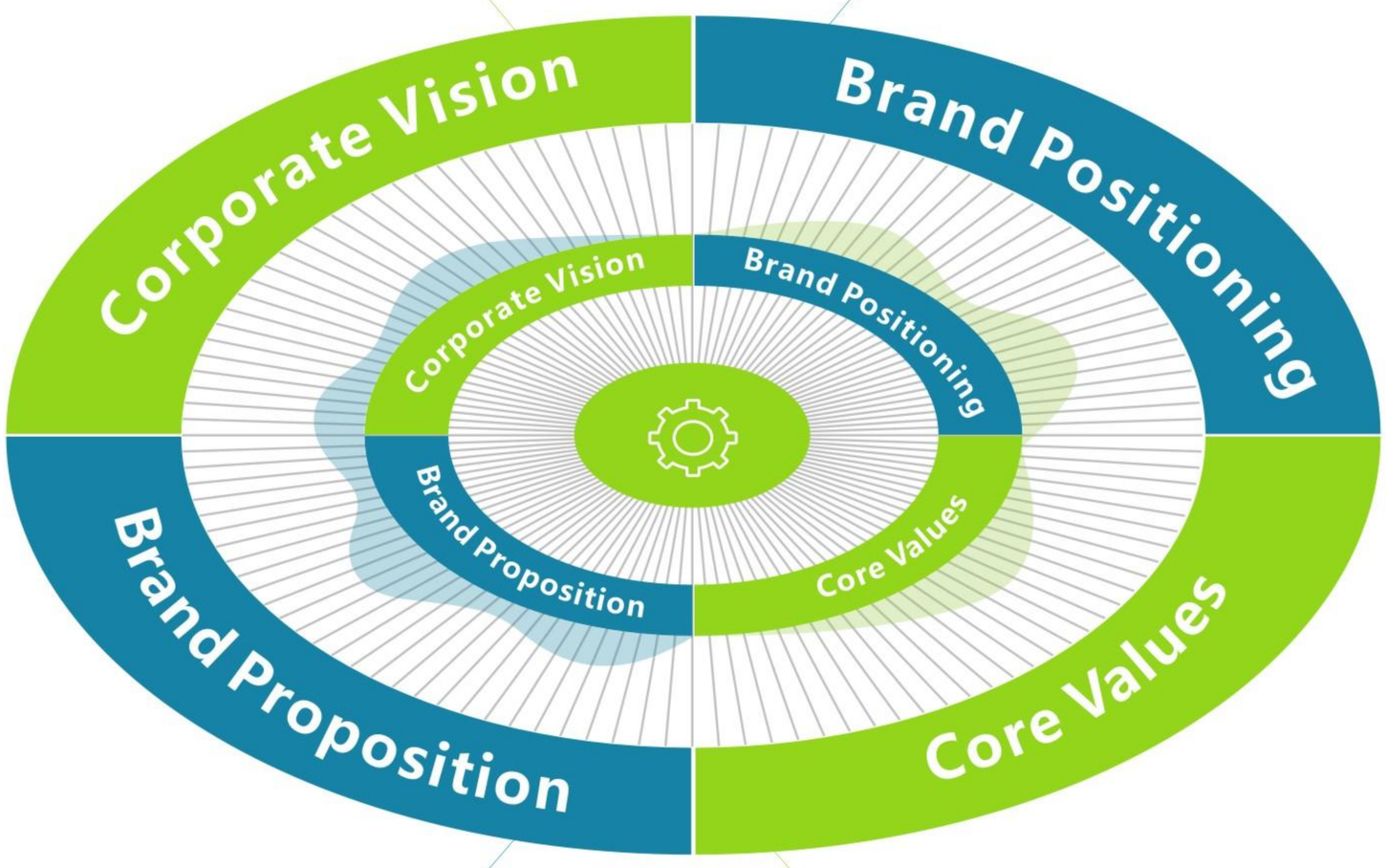
2002

Qian'an Hongao Industry and Trade Co., Ltd.
Production capacity
Coke: 1,700,000 tons/year

Enterprise Culture

Contribute to the sustainable development of the ecological environment of the human community

The green brand to protect the human community with our professional biomaterial technology



For our future

Steady: accumulate and develop steadily
Technology: leading technology research and application
Quality: stable performance, mature application, customer's reputation
Trust: commitment ability, anti-risk ability, technical strength

Technical Innovation

Ruian Technology Research is guided by market demand and driven by technological innovation. Our products have obtained a series of international certifications, aiming to provide customers with superior fully biodegradable products that meet their needs. Our innovation development relies on the national CHAS-certified testing laboratory, Changchun Institute of Applied Chemistry of Chinese Academy of Sciences, postdoctoral research workstation, fully biodegradable new materials technology research center and other research institutes.

Ruian employs a number of domestic authoritative experts as long-term consultants to ensure the gradient development structure of the company and to escort the long-term stable development of the company.

Technical Team

The Institute of Technology has gathered a group of highly elite professionals both at home and abroad, and now has a research team led by postdocs with a master's as the core. At the same time, it has employed many authoritative experts in the industry as long-term consultants, the total number of scientific research personnel is more than 100 in 5 years, and we aim to build a stable, pragmatic and innovative scientific research team.

Innovation Strategy

- Based on the scientific and technological innovation-driven strategy, Ruian has formed a forward-looking and sustainable scientific research innovation system and R&D incentive.

- The company attaches great importance to scientific research and innovation, and will build a research and development team led by the chief scientist, and form in-depth cooperation with top research institutes.

- In the next five years, the company plans to invest more than 1 billion yuan in R&D, accounting for more than 5% annually, forming a strong technical support force.

- In the next five years, it plans to establish enterprise R&D centers in North China, East China, South China and Europe, attracting more than 200 high-end R&D talents.

Detection Equipment

Fourier transform infrared spectrometer

Differential thermogravimetric synchronization analyzer

Differential scanning calorimeter

Falling Dart Impact Tester

Headspace-gas chromatograph

Elmendorf Tearing Tester

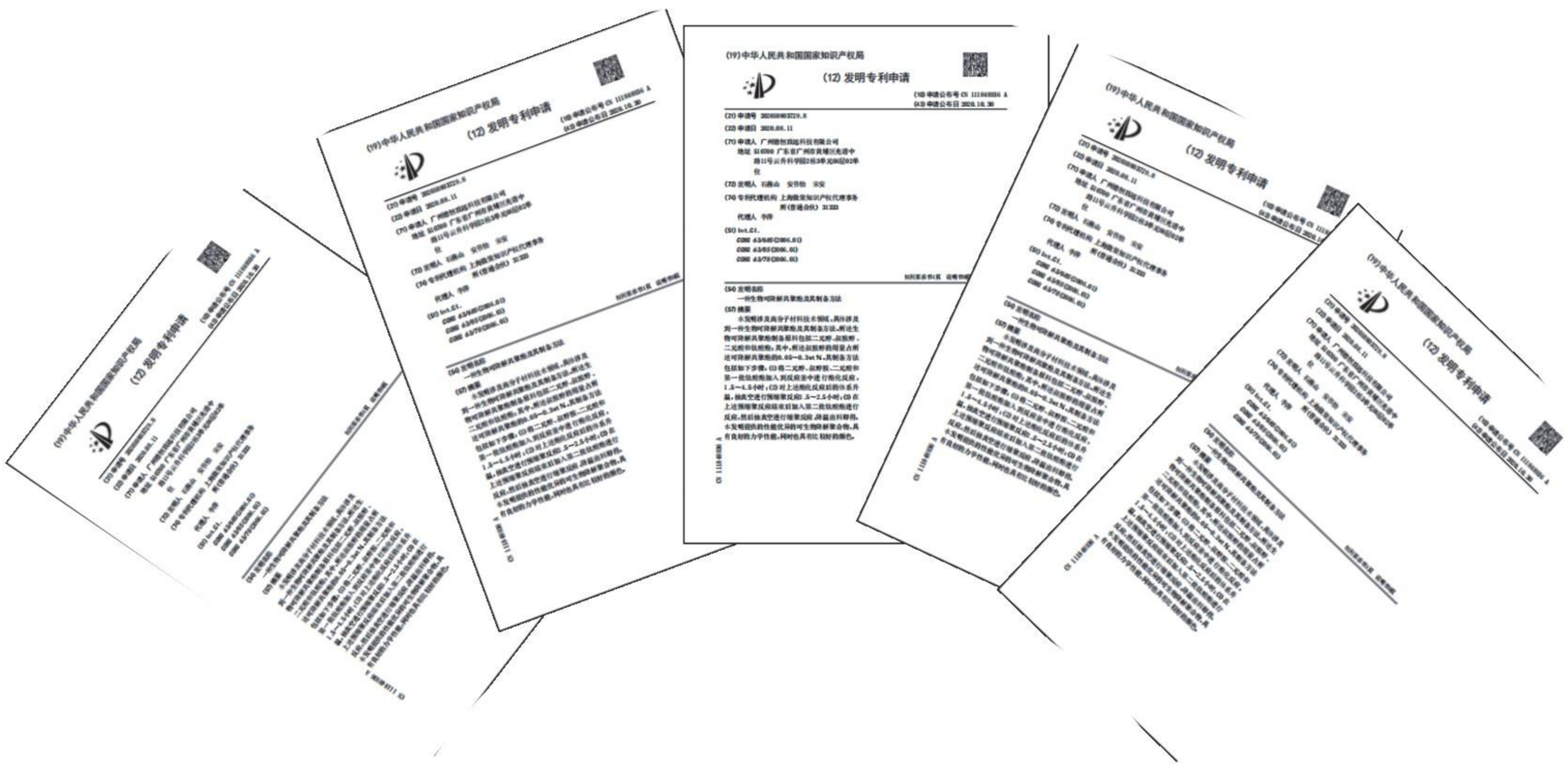
Auto Tensile Tester

Scientific Studies

Invention patents : the R & D team has applied for or obtained 22 patents in recent three years, and plans to apply for and obtain more than 30 core invention patents in the next three years.

Academic papers : The team members have published more than 20 academic papers related to the field of materials in professional core journals.

Talent reserve : the R&D team has trained more than 30 masters and doctors in materials related majors and reserved a large number of technical talents.



We believe that with the continuous development of the company, the technology research institute will create more cutting-edge scientific research achievements and more competitive products, closely link the market demand, promote and lead the development of the industry.

Products and Applications

Full Biodegradable "raw materials" Series

PBAT

Full Name	Polybutylene Adipate Terephthalate
Appearance	White resin particle

Feature:

- Excellent ductility and elongation at break
- Excellent heat resistance and impact properties
- Excellent biodegradation
- Similar to LDPE processing performance, can be blown by LDPE processing equipment

Application:

PBAT is a polymer synthesized from fossil fuels that can be used in packaging materials (garbage bags, food containers and film packaging), sanitary products (diapers, cotton swabs, etc.) and biomedical fields.

Material property

Performance	Unit	Test Standard	Typical Value
Density	g/cm³	ISO 1183	1.21-1.24
MFI (190℃, 2160g)	g/10min	ISO 1133	3.0-5.0
Melting Point	℃	DSC	110-130
Vicat Softening Point A/50	℃	ISO 306	96
Thermal deformation temperature B/T_{ff}0.45	℃	ISO 75	46
Shore Hardness	/	ISO 868	D/15:36
Tensile Strength	Mpa	ISO 527	21
Elongation at Break	%	ISO 527	>600
Carboxylate Concentration	mol/t	GB/T 14190	15

* The above data are typical values and should not be interpreted as technical indicators of quality

The temperature shall not exceed 60 ° C during transportation and storage. The product should be stored in a dry, well-ventilated warehouse, pay attention to moisture-proof, avoid contact with soil, water and so on. The shelf life is 2 years at 23 °C. It is suggested to dry before processing. The typical drying condition is: 80 ° C, 2 hours.

PBS

Full Name	Ploybutylene Succinate
Appearance	White resin particle

Feature:

- Superior mechanical properties
- Excellent formability
- Good heat resistance

Application:

PBS is a semi-crystalline biodegradable polyester made from butanedioic acid and 1,4-butanediol with excellent processability (on extrusion, injection molding, cast, etc.) that can be uused in tableware field and Packaging film field.

Material property

Performance	Unit	Test Standard	Typical Value
Density	g/cm³	ISO 1183	1.26
MFR（190℃,2160g）	g/10min	ISO 1133	3-5 or 8-10 or 20-25
Melting Point	℃	ISO 11357	110-116
Carboxylate Concentration	mol/t	GB/T 14190	≤20
Tensile Strength	Mpa	ISO 527	≥35
Elongation at Break	%	ISO 527	≥150
Flexural Modulus	Mpa	IIS0 178	≥500
Flexural Strength	Mpa	IIS0 178	≥30
Impact Strength	KJ/m2	ISO 179	≥5
Load Heat Deflection Temperature B/Tff0.45	℃	ISO 75	≥90

* The above data are typical values and should not be interpreted as technical indicators of quality

The temperature shall not exceed 70 ° C during transportation and storage. The product should be stored in a dry, well-ventilated warehouse, pay attention to moisture-proof, avoid contact with soil, water and so on. The shelf life is 1 years at 23 °C. It is suggested to dry before processing. The typical drying condition is: 80 ° C, 4-6 hours.

Fully Biodegradable "modified material" Series

GPM8 S801

Bases	PBAT, Starch, PLA
Appearance	Light Yellow Solid Particles

Film Thickness 40 um

Properties[1]	Test Method	Units	Values[2]
Tensile strength MD/TD	ISO 527-3	Mpa	24/26
Elongation at Break MD/TD	ISO 527-3	%	700/660
Tear Strength MD/TD	ASTM D 1922	N/mm	73
Dart Drop	ISO 7765	g	550
Safe Load-Bearing	-	kg	7.5
Film Density	-	g/cm3	1.29

【1】Can not be used as the basis for the determination of material quality.

【2】The data is listed for test specification and reference purposes only.

Blowing film processing parameters

Setting		Start Point	Range
Melting temperature		115℃	100-120℃
Heating zone temperature of blowing film	Posterior segment	140℃	135-145℃
	Middle segment	140℃	135-145℃
	Anterior segment	150℃	145-155℃
Die temperature		160℃	150-165℃
Processing temperature limit		190℃	
Pre-drying conditions		90℃，1hr	

Transport and storage temperatures should not exceed 70°C. The unopened material canbe stored at normal temperature (23℃) for 12 months. The product in complete package canbe used directly. If the package is damaged, it needs to be dried before use, because moistureabove 1000ppm will affect the blown film process, and the effective drying condition is 90°Cfor 1 hour. Dried products need to be protected from moisture.

GPM8 S802

Bases	PBAT, Starch
Appearance	Light Yellow Solid Particles

Film Thickness 40 um

Properties[1]	Test Method	Units	Values[2]
Tensile strength MD/TD	ISO 527-3	Mpa	21/22
Elongation at Break MD/TD	ISO 527-3	%	780/700
Tear Strength MD/TD	ASTM D 1922	N/mm	79
Dart Drop	ISO 7765	g	623
Safe Load-Bearing	-	kg	6.5

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【2】The data is listed for test specification and reference purposes only.

Blowing film processing parameters

Setting		Start Point	Range
Melting temperature		115℃	100-120℃
Heating zone temperature of blowing film	Posterior segment	140℃	135-145℃
	Middle segment	140℃	135-145℃
	Anterior segment	150℃	145-155℃
Die temperature		160℃	150-165℃
Processing temperature limit		190℃	
Pre-drying conditions		90℃，1hr	

Transport and storage temperatures should not exceed 70°C. The unopened material canbe stored at normal temperature (23℃) for 12 months. The product in complete package canbe used directly. If the package is damaged, it needs to be dried before use, because moistureabove 1000ppm will affect the blown film process, and the effective drying condition is 90°Cfor 1 hour. Dried products need to be protected from moisture.

GPM132 Z01

Bases	PLA 、PBAT
Appearance	White Solid Particles

GPM132 Z11

Bases	PLA、PBS
Appearance	White Solid Particles

GPM132 Z11 Mechanical Properties

Properties[1]	Test Method	Units	Values[2]
Tensile Strength	ISO 178	Mpa	35
Elongation at Break	ISO 178	%	8
Bending Strength	ISO 527	Mpa	50
Bending Modulus	ISO 527	Mpa	2700
Izod Notched Impact Strength	ISO 179-1	kJ/m2	5.5
Density	ISO 1183	g/cm3	1.5

【1】Can not be used as the basis for the determination of material quality.

【2】The data is listed for test specification and reference purposes only.

GPM132 Z11 Thermal Performance

Properties[1]	Test Method	Units	Values
MFR (190C,2160g)	ISO 1133	g/10min	10
Heat Deflection Temperature	ISO 75	℃	90

* The above data are typical values and should not be interpreted as technical indicators for judging quality

Transport and storage temperatures should not exceed 70°C. Unopened material can bestored at ambient temperature (23°C) for 12 months. The product can be used directly if thepackage is intact. If the package is damaged, it needs to be dried before use, becausemoisture above 1000ppm will affect the injection molding process, the effective dryingcondition is 90°C for 1 hour. The dried product should be treated with moisture

GPM132 X01

Bases	PLA 、PBAT
Appearance	White Solid Particles

Mechanical Properties

Properties[1]	Test Method	Units	Values[2]
Tensile Strength	ISO 178	Mpa	37
Elongation at Break	ISO 178	%	70
Bending Strength	ISO 527	Mpa	50
Bending Modulus	ISO 527	Mpa	2200
Izod Notched Impact Strength	ISO 179-1	kJ/m2	30
Density	ISO 1183	g/cm3	1.3

【1】Can not be used as the basis for the determination of material quality.

【2】The data is listed for test specification and reference purposes only.

Thermal Performance

Properties[1]	Test Method	Units	Values
MFR (190C,2160g)	ISO 1133	g/10min	1.6
Heat Deflection Temperature	ISO 75	℃	70

* The above data are typical values and should not be interpreted as technical indicators for judging quality

Transport and storage temperatures should not exceed 70°C. Unopened material can be stored at ambient temperature (23°C) for 12 months. The product can be used directly if the package is intact. If the package is damaged, it needs to be dried before use, because moisture above 1000ppm will affect the injection molding process, the effectivedrying condition is 60°C for 2-3 hour. The dried product should be treated with moisture.

GPM132 X11

Bases	PLA、PBS
Appearance	White Solid Particles

Mechanical Properties

Properties[1]	Test Method	Units	Values[2]
Tensile Strength	ISO 178	Mpa	37
Elongation at Break	ISO 178	%	90
Bending Strength	ISO 527	Mpa	50
Bending Modulus	ISO 527	Mpa	1900
Izod Notched Impact Strength	ISO 179-1	kJ/m2	30
Density	ISO 1183	g/cm3	1.3

【1】Can not be used as the basis for the determination of material quality.

【2】The data is listed for test specification and reference purposes only.

Thermal Performance

Properties[1]	Test Method	Units	Values
MFR (190C,2160g)	ISO 1133	g/10min	7
Heat Deflection Temperature	ISO 75	℃	90

* The above data are typical values and should not be interpreted as technical indicators for judging quality.

Transport and storage temperatures should not exceed 70°C. Unopened material can be stored at ambient temperature (23°C) for 12 months. The product can be used directly if the package is intact. If the package is damaged, it needs to be dried before use, because moisture above 1000ppm will affect the injection molding process, the effective drying condition is 80°C for 1-2 hour. The dried product should be treated with moisture.

GPM132 X02

Bases	PLA
Appearance	Semi-translucent Solid Particles

Mechanical Properties

Properties[1]	Test Method	Units	Values[2]
Tensile Strength	ISO 178	Mpa	50
Elongation at Break	ISO 178	%	90
Bending Strength	ISO 527	Mpa	50
Bending Modulus	ISO 527	Mpa	2500
Izod Notched Impact Strength	ISO 179-1	kJ/m2	4-6
Density	ISO 1183	g/cm3	1.24

【1】Can not be used as the basis for the determination of material quality.

【2】The data is listed for test specification and reference purposes only.

Thermal Performance

Properties[1]	Test Method	Units	Values
MFR (190C,2160g)	ISO 1133	g/10min	6-13
Heat Deflection Temperature	ISO 75	℃	60

* The above data are typical values and should not be interpreted as technical indicators for judging quality.

Transport and storage temperatures should not exceed 60°C. Unopened material can be stored at ambient temperature (23°C) for 12 months. The product can be used directly if the package is intact. If the package is damaged, it needs to be dried before use, because moisture above 1000ppm will affect the injection molding process, the effective drying condition is 60°C for 4-5 hour. The dried product should be treated with moisture.

Qualification Certification

Ruian has always put quality first, and has successively obtained a number of international quality management and product system certifications.

Product System Certification

- DIN CERTCO-7W0459
- CERTIFICATE for Resins-BPI
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012105826
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012005125
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012105894
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012105126
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012105895
- CERTIFICATE FOR AWARDING AND USE OF THE 'OK COMPOST INDUSTRIAL' CONFORMITY MARK-TA8012105896

OK compost TÜV AUSTRIA INDUSTRIAL

BPI

compostable 7W0459

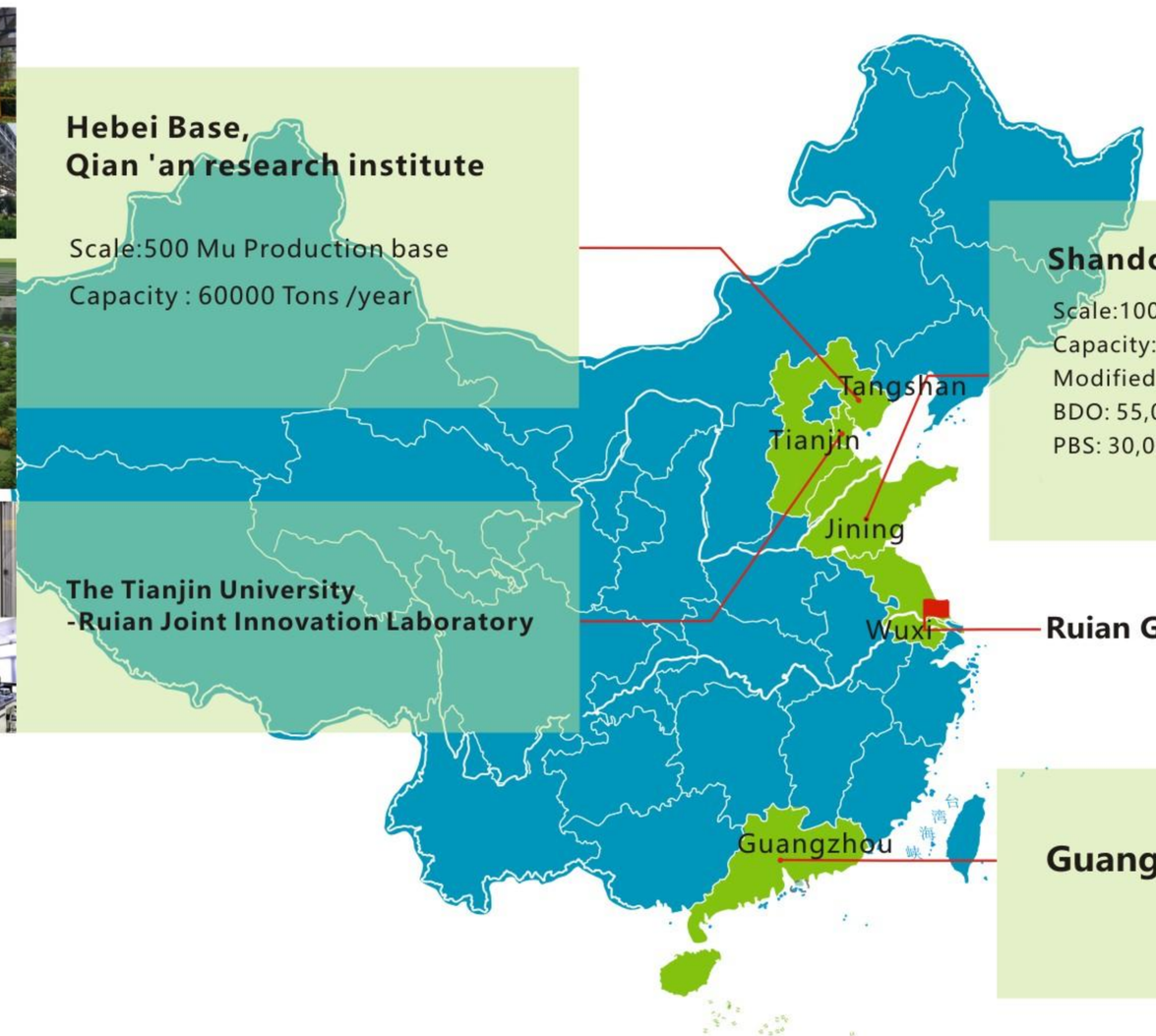
Production Base

Hebei Base,
Qian 'an research institute

Scale:500 Mu Production base

Capacity : 60000 Tons /year

The Tianjin University
-Ruian Joint Innovation Laboratory



Shandong Ruian Base

Scale:1000 Mu Production base
Capacity: PBAT 180,000 ton/year
Modified materials: 100,000 ton/year
BDO: 55,000 ton/year
PBS: 30,000 ton/year

Ruian Group Headquarters

Guangzhou Laboratory

Ruian Group is headquartered in Wuxi, Jiangsu province and up to now the company has built 1,000-mu production base in Shandong province and 500-mu production base in Hebei province. The production base is located in the core industrial economic zone around Bohai Sea, the location radiates northeast China, East China, central China, and the far end radiates South China. We have invested in scientific research and innovation, established Guangzhou Ruian Research Institute and Qian 'an new material science research institute, and established the Joint Innovation Laboratory with Tianjin University.

Capacity status :

Up to now, the company has built Shandong Ruian 1000 mu production base and Hebei Ruian 500 mu production base. The production base is located in the core industrial economic zone around Bohai Sea, and the location radiates to Northeast China, East China and Central China, and the distal radiation to South China. Vigorously invest in scientific research and innovation, establish Guangzhou Ruian Research Institute and Qian'an New Material Science Research Institute, and create joint innovation laboratory with Tianjin University.


Production base

Intelligent manufacturing

(On-line detection, automatic feeding, automatic sub-loading automatic palletizing)

The company relies on first-class scientific research strength, advanced production and experimental equipment, to build automated, intelligent modern factory, the function is set in the intelligent production line of automatic feeding, intelligent control, automatic loading and stacking, on-line detection and so on.


On-line detection

Automatic feeding

Automatic sub-loading

Automatic palletizing

Terminal Application

大潤發 RT-MART

永辉超市 YONGHUI SUPERSTORES

美宜佳 MEIYIJIA

新华都

Carrefour.cn 家乐福

Sam's CLUB 山姆会员商店

Walmart

大参林

天猫 TMALL.COM

钱大妈 QIAN DAMA'S FRESH MARKET 不卖隔夜肉

惠友 HUIYOU-mart

cdf 中免集团 CHINA DUTY FREE

京东

美团外卖 美团外卖 送啥都快

SF EXPRESS 顺丰速运

真功夫

肯德基 有3肯德基 生活好滋味!

吉祥馄饨 —— 壹玖玖玖 始于上海 ——

绝味鸭脖

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