



建设全球柠檬酸领军品牌
Building the Global Leading Brand of Citric Acid

SHANDONG ENSIGN INDUSTRY CO.,LTD.

山东英轩实业股份有限公司
SHANDONG ENSIGN INDUSTRY CO.,LTD.

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Company Profile

2

Product and Market

3

Environmental Protection

Company Profile — Organization Structure



Building the Global Leading Brand of Citric Acid

A large enterprise which specializes in the production of Citric Acid series products and Alcohol series products



Focus Makes Future

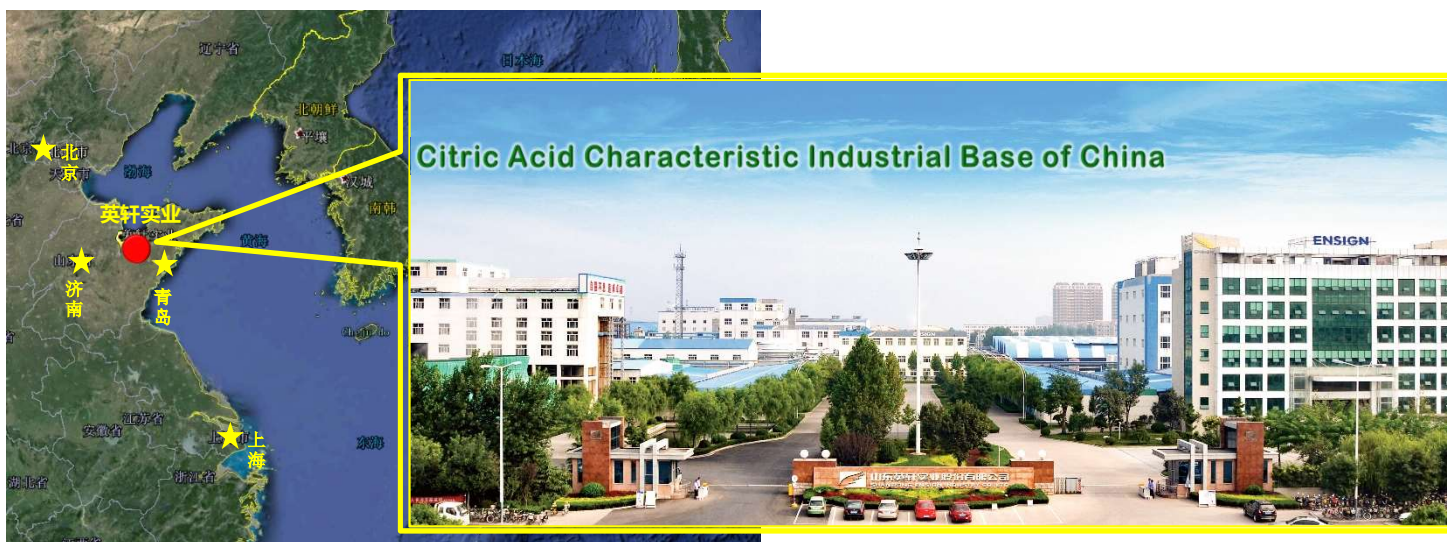
A large manufacturer of construction machinery, agricultural equipment and industrial vehicle



Focus on the Industrial Chain and Build an Intelligent City Together
Domestic first-class production and research city of modern and intelligent manufacturing



Company Profile — Geographical Location



SHANDONG ENSIGN INDUSTRY CO.,LTD. is located in the internationally famous sapphire city — Changle, China where there is convenient traffic, abundant resources, advantageous geographical location and obvious location advantage, and the waterway, airway, railway and highway are very convenient.

SHANDONG ENSIGN INDUSTRY CO.,LTD.

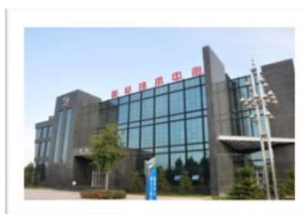
Company Strength

Intelligent Factory

- Information-based
- Intelligentized
- Automated



R & D



Production



Warehouse



Logistics



Company Strength — R & D

- ◆ Testing Center has **accredited to ISO/IEC17025:2017**
- ◆ Equipped with more than **100** sets of advanced testing equipment
- ◆ Quality Assurance team & Quality Control team. QA: 12, QC: 68

Raw & auxiliary materials and products can be tested by Testing Center. It provides a strong guarantee for product quality control, technology development, new products and new process experiments.



SHANDONG ENSIGN INDUSTRY CO.,LTD.



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Certificate of Analysis

Report NO.: YXTCR-20231104046-01

Product Name: Acid Anhydrous
Molecular Formula: C₆H₈O₇
Batch No.: SAUCS11001
Quantity: 200MT

Report Date: 2023-11-04

CAS No.: 77-92-9
Production Date: 2023-11-02

Analysis Date: 2023-11-03
Shelf Life: 36months

Item	Unit	Quality Standards	Analysis Results
Characters	-	White or almost white, crystalline powder, colorless crystals or granules. Colorless, has a strongly acid taste. Very soluble in water, freely soluble in ethanol, very slightly soluble in diethyl ether.	Pass
Identification	-	Pass Test	Pass
Appearance of solution	-	Pass Test	Pass
Acidity	%	99.5-100.5	99.9
Water	%	≤0.5	0.10
Reducible Carbonizable Substances	-	Pass Test	Pass
Sulfurated Ash (Residue on Ignition)	%	≤0.05	0.02
Sulfate	mg/kg	≤50	<50
Oxalate	mg/kg	≤50	<50
Chloride	mg/kg	≤5	<5
Lead	mg/kg	≤0.1	<0.1
Arsonic	mg/kg	≤0.1	<0.1
Mercury	mg/kg	≤0.1	<0.1
Aluminum	mg/kg	≤0.2	<0.2
Heavy Metals	mg/kg	≤5	<5
Bacterial endotoxins	BU/mg	<0.5	<0.5

Conclusion: The product is in conformity with BPU5PFC0330/ENSIGN.

Approved by: 陈士刚

Reviewed by:

Prepared by: 陈士刚

Authorized signatory



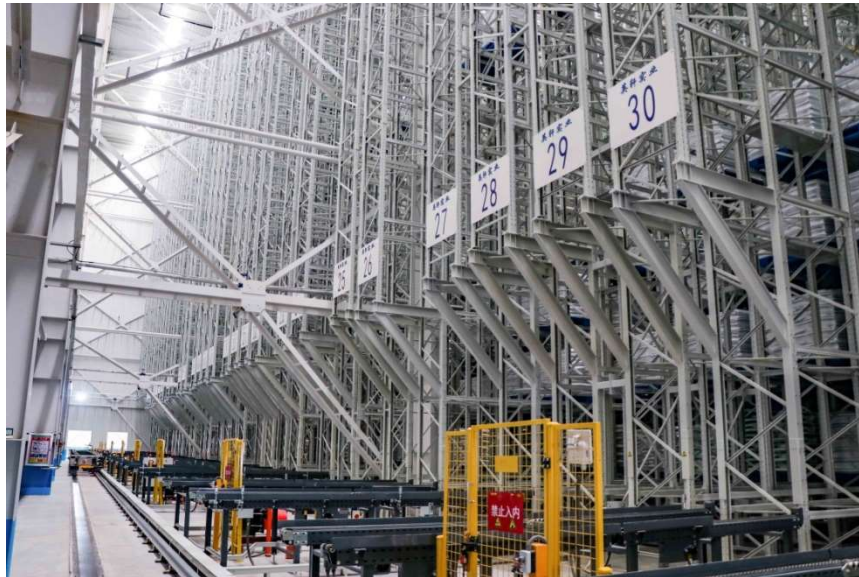
Company Strength — Manufacturing

We adhere to the sustainable development concept of green production and intelligent manufacturing, and creatively apply the most advanced technology and equipment to citric acid industry. By implementation of intensive and information-based transformation, continuous upgrading of energy saving and three wastes treatment, our company always takes the lead in the global citric acid industry in terms of intelligent, automation and green environmental protection.



SHANDONG ENSIGN INDUSTRY CO.,LTD.

Company Strength — Warehouse



- ◆ We have the largest matching facility and the most advanced intelligent warehouse in global citric acid industry. Storage capacity is five times larger than before for the same floor area.
- ◆ Operating mode is stereoscopic warehouse plus intelligent warehouse management system. Operators sitting in the control room can control product warehousing, deployment, out of warehouse, loading and unloading automatically and precisely. Logistics efficiency has increased by more than 80%.

Company Strength — Logistics

- ◆ Put container on the floor, reduce potential safety hazard to a minimum and reduce energy consumption.
- ◆ Loading up goods by this way reduces manual labor and greatly improves efficiency. It takes about 20 minutes to complete a container load.
- ◆ Airbags are used around the container to avoid the invasion of insect pests. Loading quality is guaranteed.
- ◆ Regular bidding to inland logistics transportation and freight forwarding of sea transportation. We have more competitive cost, better service and more stable supply.



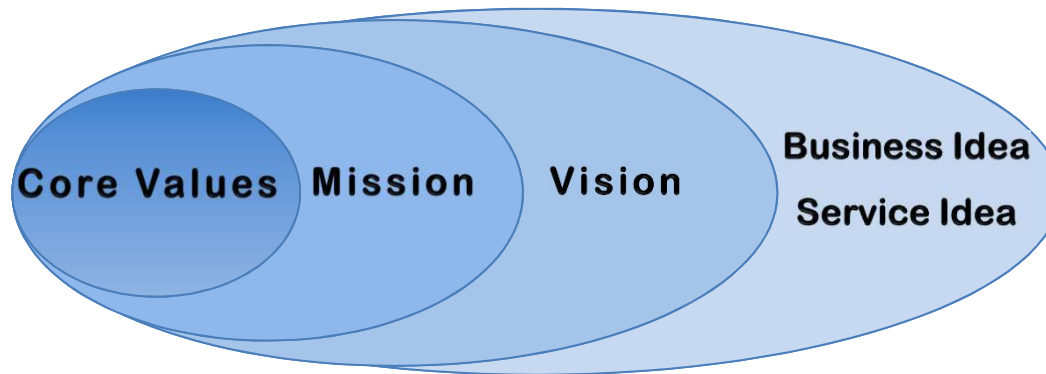
Company Profile — Certificates

Ensign Industry is accredited to **ISO9001**、**ISO14001**、**ISO45001**、**ISO22000**、**FSSC22000**、**BRCGS**、**FAMI-QS**、**HACCP**、**GMP**、**Non-GMO IP**、**NGP**、**HALAL**、**KOSHER**、**AEO**, etc.



SHANDONG ENSIGN INDUSTRY CO.,LTD.

Company Profile — Enterprise Culture



Our Commitment

Criteria	What to do	Target	How to do business and service
Core Values	Integrity, Openness, Innovation and Win-Win		
Mission	Taking the Lead in Customer Demands, Staff Dreams and Social Responsibility		
Vision	Aiming at the Most Reliable Brand in the Industry		
Business Idea	To Win by Quality and Speed		Service Idea To Surpass Expectation by Considerate Service

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Product and Market — Products

	Citric Acid Series Products	Alcohol Series Products	Circular Economy Products
Products	<ul style="list-style-type: none"> Citric Acid Monohydrate Citric Acid Anhydrous Sodium Citrate Potassium Citrate Calcium Citrate 	<ul style="list-style-type: none"> Special Grade Edible Alcohol Superior Grade Edible Alcohol 	<ul style="list-style-type: none"> DDGS Feed / Citric Acid Mycelium / Corn Gluten Liquid Carbon Dioxide Anaerobic Granular Sludge Gypsum Powder
Appearance			

Products——Highlights Introduction for Citric Acid and Citrates

IV、Diversity

Specification



8-16 mesh



8-40 mesh



12-40 mesh



10-100 mesh



30-100 mesh

No.	Product	Common mesh	Custom-made mesh
1	Citric Acid Monohydrate	8-40	8-16、 30-100
2	Citric Acid Anhydrous	12-40、 30-100	25-45、 40-120、 50-100
3	Sodium Citrate	12-40、 20-100	30-100、 45-100
4	Potassium Citrate	10-100	10-40、 20-100
5	Calcium Citrate	80-120	/

Products——Highlights Introduction for Citric Acid and Citrates

IV、Diversity

Packaging

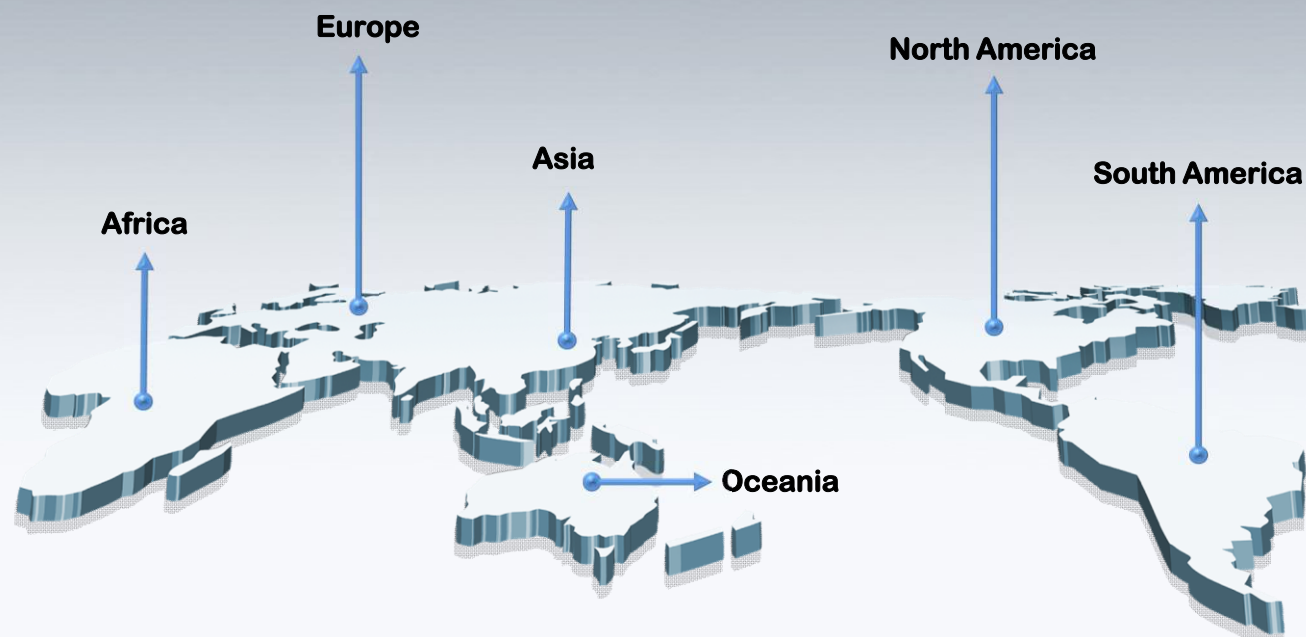


In citric acid industry, we are the first manufacturer who use FFS packaging PE bag in large-scale. FFS packaging PE bag is convenient and easy to transport as well as storage, mildewproof and waterproof, environmental friendly.

SHANDONG ENSIGN INDUSTRY CO.,LTD.

Product and Market — Citric Acid Export Markets

Ensign products are exported to more than 130 countries and regions.



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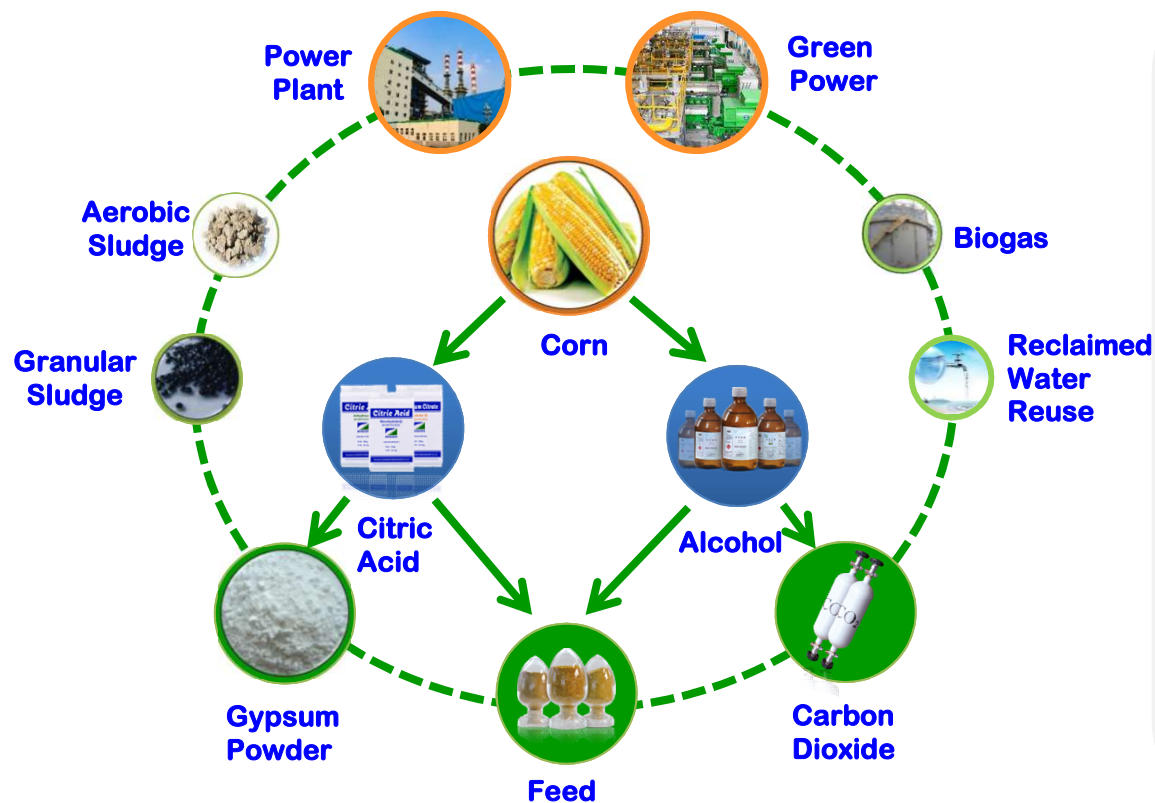
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Circular Economy



- ◆ **Energy:** Power Plant, Green Power
- ◆ **Raw Material:** Corn
- ◆ **Main Products:** Citric Acid and Alcohol
- ◆ **Feed** produced from corn gluten and mycelium (by-products of citric acid production)
- ◆ **Gypsum Powder** produced from calcium sulphate (by-product of citric acid production)
- ◆ **Food Grade Liquid Carbon Dioxide** produced from carbon dioxide (by-product of alcohol production)
- ◆ Granular Sludge and Biogas are produced during anaerobic treatment of waste water, **Granular Sludge** is sold as anaerobic strain and **Biogas** is used to produce Green Power. **Aerobic Sludge** is sold as organic fertilizer.

Environmental Protection — National Green Factory

As a national green factory, Ensign Industry has unswervingly implemented the strategy of green and sustainable development.

Intensive Land Use

Scientific design and reasonable planning of the factory area to improve the degree of land use intensification.



Clean Production

Advanced production technology to reduce the generation of pollutants by systematic optimization & process control.



Waste Resource Utilization

Wastewater and waste in the production process are treated and turned into treasure and recycled.



Low-carbon Energy

Energy-saving & environmental friendly power generation methods from biogas power generation workshop to realize low-carbon of overall energy.



ENSIGN

Target



www.ensignworld.com

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Website

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Thank you!

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