Boai NKY remains committed to its core values of
“Quality First, Innovation Driven”
providing stable, safe, and efficient material solutions for global pharmaceutical companies.

Head Office
BOAI NKY PHARMACEUTICALS LTD.
No. 1888 Wenhua Road (East), Boai, Jiaozuo, Henan, China
Postal code: 454450
Tel: +86-391-8696320
Fax: +86-391-8692950
www.boai-nky.com
E-mail: guonei@boai-nky.com

International Business
Tianjin Boai NKY International Ltd.
2610, Wantong Center, No.12 Xuzhou Road, Heping District, Tianjin, China
Postal code: 300200
Tel: +86-22-58316066
Fax: +86-22-58316068
E-mail: sales@boai-nky.com

NKY Global R&D Center
Address: No. 88, Chongyi Road, Songjiang District, Shanghai, China
Postcode: 201616
Tel: +86-21-64133021
Fax: +86-21-54131953
Email: guonei@boai-nky.com

US Branch Office
NKY International LLC
Address: 2170 Breaker Ct, Discovery Bay, CA 94505, United States
Postal code: 94505
Tel: +1 (302) 298-1150
E-mail: nkyus@boai-nky.com

Germany Branch Office
Boai NKY Chemicals GmbH
Schmachtendorfer Straße 5,
46147 Oberhausen Germany
Tel.:+49-208-41193212
E-mail: info@boai-chemicals.de

Japan Representative Office
Address: 5F,KATAYAMABLDG.,NO.23-10,5-CHOME, SHINBASHI,MINATO-KO,TOKYO,JAPAN 105-0004
Tel：+81 3 3433-6731
Fax：+81 3 3433-6735
E-Mail：sun@boainky-japan.com

新开源制药
NKY PHARMA

Pharmaceutical Products

博爱新开源制药有限公司
BOAI NKY PHARMACEUTICALS LTD.

Focused on pharmaceutical innovation · Leading global standards

Boai NKY Medical Holdings Ltd., founded in 2003, is a national high-tech enterprise dedicated to the R&D, manufacture and sale of pharmaceutical excipients and intermediates. As the first company in Asia to commercialize the production of polyvinylpyrrolidone (PVP) products, Boai NKY has become one of the world's technology leader and largest-capacity supplier of PVP. The company is headquartered in Shanghai, China, with manufacturning bases in Henan Province, and a global network of subsidiaries and service centers.

Boai NKY operates multiple modern production lines that comply with GMP, ISO, FDA and other international standards. Its products are widely used in pharmaceuticals, food, cosmetics and industrial applications, and are exported to Europe, the Americas, Asia-Pacific, Africa and beyond. Committed to technological innovation, the company maintains several R&D centers and holds its own intellectual-property portfolio, continually advancing product quality and manufacturing processes.

Asia's First
Company to commercialize PVP production

China's First
Pharmaceutical excipient manufacturer to obtain EXCiPACT GMP certification

World's Largest
NVP monomer production capacity, ensuring a stable supply chain

Asia's First
PVP producer produce from BDO raw materials, ensuring stability across the entire production chain

Specialty Chemistry · Precision Medicine

Dual-Engine Growth Strategy

Boai NKY Group operates two core business Divisions.

Specialty Chemicals Division

PVP-based pharmaceutical excipients, povidone-iodine, and specialty polymers

Precision Medicine Division

Gene sequencing, cancer screening, and related services

Global presence · Localized service

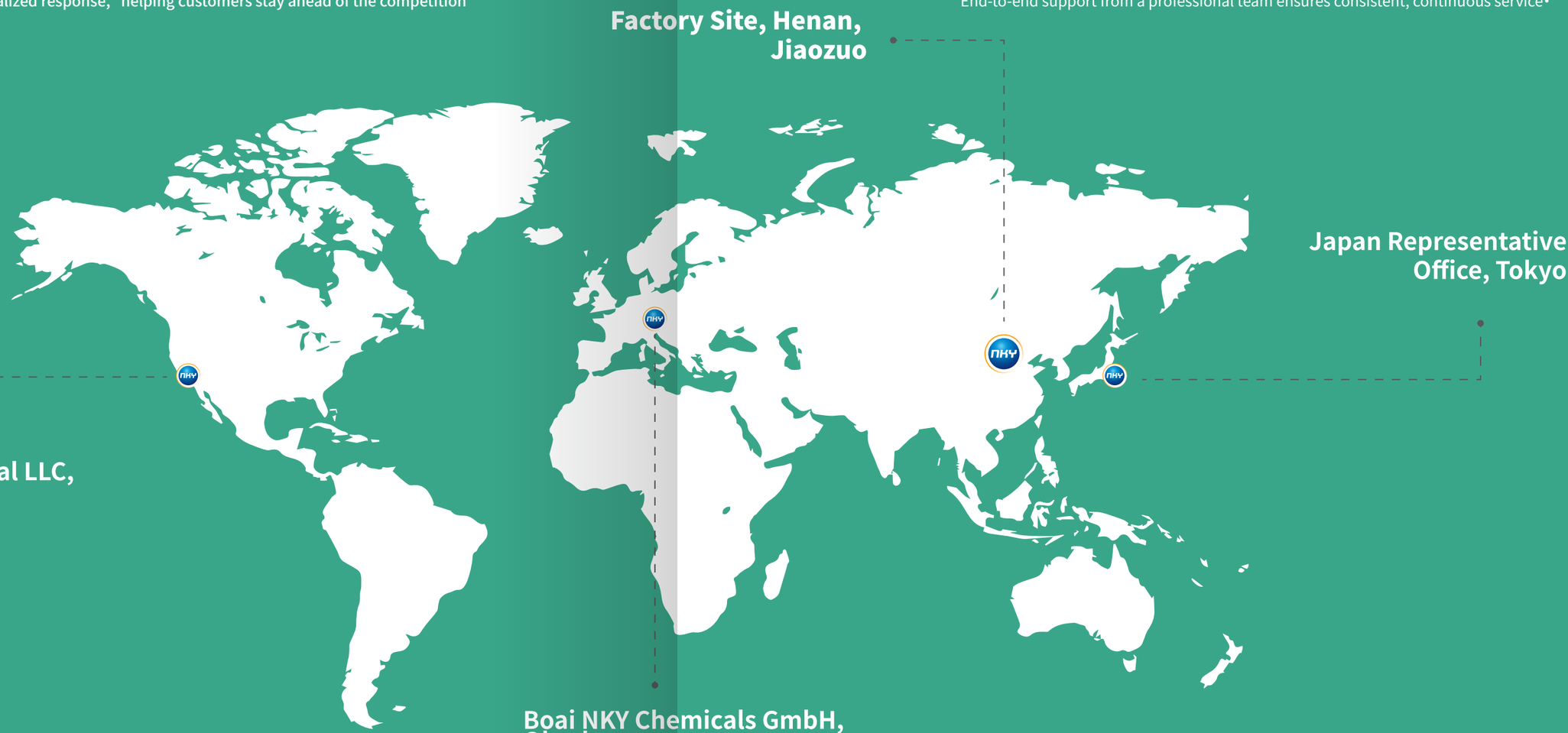
- Overseas subsidiaries in the United States, Germany, and Japan
- Integrated local sales, technical support, and warehousing/logistics services
- Global service with a “localized response,” helping customers stay ahead of the competition

Reliable support · Worry-free collaboration

World’s largest NVP production capacity, guaranteeing reliable supply·

Produce from BDO keeps prices controllable·

End-to-end support from a professional team ensures consistent, continuous service·



Support is closer than you imagine.

Powerful R&D capabilities · Customized solutions

NKY Global R&D Center — Shanghai ·

Boai Process R&D Center — Jiaozuo ·

Tianjin Technical Support Center — Tianjin ·

—Guided by the Quality by Design (QbD) philosophy,

we support the development of customized solutions that meet client’s specific application needs.

NKY pharmaceutical excipient products

KoVidone® K Series KoVidone® VA64 Series
PVP VA64

KoVidone is more than a single product—it is a comprehensive portfolio of polyvinylpyrrolidone (PVP) solutions widely used in pharmaceutical manufacturing. The range helps you overcome production challenges and safeguards the superior quality of your finished products.

- **Consistent quality**
- **Excellent batch to batch stability**
- **Superior impurity control**
- **Largest global production capacity**
- **Outstanding performance**

PolyKovidone® Series
PVPP

PolyKovidone® cross linked povidone is used as a super disintegrant in formulations, enabling tablets to break apart rapidly and significantly enhancing drug dissolution and bioavailability. Its porous, fluffy powder form helps your product perform even more effectively.

- **Rapid water absorption**
- **High swelling capacity**
- **Excellent powder morphology**

KoVidone®-I
PVP-I

KoVidone® I (povidone iodine) is a trusted, multi purpose antimicrobial that combines iodine’ s potent germicidal power with a unique polymer matrix to deliver broad spectrum activity. Renowned for its effectiveness in preventing and treating infections, it is widely employed in medical and surgical settings— including skin disinfection, wound care, and the treatment of diverse infections. With a long standing record of safety and efficacy, povidone iodine is a cornerstone of modern healthcare, offering reliable solutions in both clinical and home care environments.

Applications of NKY pharmaceutical excipient products

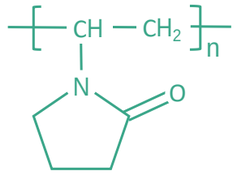
NKY’s polyvinylpyrrolidone (PVP) series, as premium pharmaceutical excipients, are broadly suitable for a wide range of dosage forms.

Applications	Products	Key functional characteristics in formulations
Binder	K25，K30，K90，VA64	A preferred binder for solid dosage forms—suitable for wet granulation, dry granulation, direct compression, and fluid-bed granulation. It is especially advantageous for immediate-release and anhydrous formulations, as well as for actives that are poorly water-soluble, water-sensitive, or have low compressibility. The binder effectively enhances granule compressibility, increases tablet cohesion and hardness, and facilitates drug release.
Solubilizer	K12, K15, K17, K25, K30 K60, K90, VA64	Enhances the solubility of poorly soluble drug formulations and improves
Dispersant or co-milling agent	K15，K30，K90，VA64	Acts as a solid-dispersion carrier to enhance the solubility of poorly soluble drugs, forming co-precipitated or co-milled solid dispersions with the active ingredient.
Active-ingredient stabilizer	K12, K15, K17, K25, K30	Forms amorphous dispersion complexes with the drug, enhancing drug stability.
Suspension stabilizer	K60，K90	Enhances suspension stability in oral liquid formulations.
Film-forming agent for tablet coatings	K25，K30	Acts as an auxiliary film-former, porogen, and pigment dispersant for coating systems; lowers the viscosity of the coating solution, boosts film flexibility and adhesion to the tablet core, and improves the dispersion and spreadability of lake pigments and opacifiers.
Crystallization inhibition and thickening	K12, K15, K17, K25, K30 K60, K90，VA64	Acts as a viscosity modifier and solubilizing stabilizer in liquid formulations; prolongs drug action duration and provides lubrication.
Porogen (pore-forming agent)	K12, K15, K17, K25, K30 K60, K90，VA64	Creates water-soluble pores in sustained-release and taste-masked solid dosage forms, regulating drug dissolution rate and release profile.
Orthers	K90	Capsule flow aid; Stabilizer for enzymes and heat-sensitive drugs; Moisturizing, viscosity-enhancing, and film-forming agent for topical preparations; Suitable for a wide range of foods and dietary supplements

NKY’s KoVidone (PVP) series fully meets USP/NF, EP, JP, BP and ChP pharmacopoeial standards, ensuring it satisfies the needs of customers worldwide.

Products	CFDA Registration No.	US DMF	CEP
KoVidone® K12	F20180000205	037384	-
KoVidone® K25	F20180000200	036421	R0-CEP 2022-423-Rev00
KoVidone® K30	F20170000567	035501	R0-CEP 2021-327-Rev00
KoVidone® K90	F20180000216	036419	R0-CEP 2023-040-Rev00
PolyKoVidone® XL/XL-10	F20170000568	035341	R0-CEP 2023-020-Rev00
KoVidone® VA64	F20170000570	036420	R0-CEP 2023-019-Rev00
KoVidone® I	Y20209990043	040941	-

KoVidone® K



Product name KoVidone® K Povidone

USP/EP name Povidone, povidonum

INCI/CTFA Polyvinylpyrrolidone(PVP)

CAS NO. 9003-39-8

Properties Nontoxic; Non-irritant; Hygroscopic; Freely soluble in water, alcohol and most other organic solvents; Very slightly soluble in acetone; Excellent solubility; Film-forming; Chemical stability; Physiologically inert; Complexation and binding property.

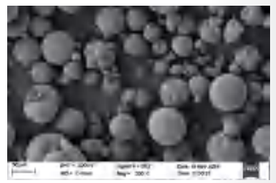
Specification Based on the polymer molecular weight and viscosity in water, the current series products are classified based on their K-values.

Products	K value*	Mv	Main Application
K12	10.2-13.8	3,000-7,000	Functions as a solubilizer, dispersant, and crystallization inhibitor.
K15	12.75-17.25	8,000-12,000	Functions as a solubilizer, dispersant, and crystallization inhibitor.
K17	15.3-18.36	10,000-16,000	Functions as a solubilizer, dispersant, and crystallization inhibitor.
K25	22.5-27.0	30,000-40,000	Acts as a binder, film-forming agent, solubilizer, and dispersant.
K30	27-32.4	45,000-58,000	Acts as a binder, film-forming agent, solubilizer, and dispersant.
K60	54-64.8	270,000-400,000	Acts as a binder, thickening agent, suspension stabilizer, and dispersant.
K90	81-97.2	1,000,000-1,500,000	Acts as a binder, thickening agent, suspension stabilizer, and dispersant.

*K-value is calculated by determining the polymer relative viscosity in water and applying the results to the Fikentscher equation.

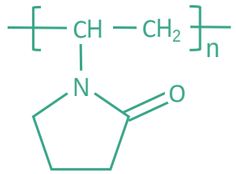
KoVidone® K series products offer outstanding binding, film-forming, dispersing, and thickening properties, giving them wide-ranging applications in the pharmaceutical field and earning them recognition as one of the three leading new pharmaceutical excipients promoted internationally.

KoVidone K90 SEM



KoVidone K30 SEM

PolyKoVidone®



Product name: PolyKoVidone® Crosspovidone

USP/EP name: Crospovidonum, crospovidone

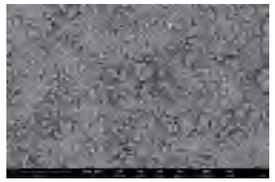
INCI/CTFA: Insoluble PVP

CAS NO.: 25249-54-1

Properties: Hygroscopic; Insoluble in water, acid, alkaline and all other common solvents; Swells rapidly in water without gel formation; Improves flowability and plasticity; Strong particle compressibility; Non-ionic; Chemically inert; Low Peroxide content

Special Type: Based on the distribution of particle size the material is classified as either type A or B:

PolyKoVidone XL (TypeA) 50-300μm



PolyKoVidone XL-10 (TypeB) 10-50μm

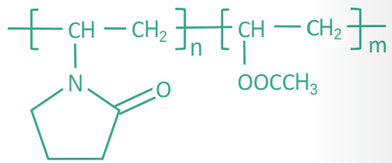
Main Application

- As a super-disintegrant, it enables the formulation to rapidly absorb water, swell, and break apart, significantly boosting drug dissolution speed and bioavailability.
- Compatible with multiple formulation processes—suitable for direct compression, dry granulation, and wet granulation, meeting the needs of diverse manufacturing workflows.
- Provides multiple particle-size grades to precisely match diverse end-formulation requirements, optimize manufacturing yield, and maximize therapeutic performance.

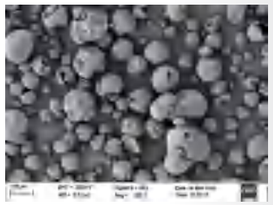
Performance

- Highly cross-linked network structure with strong capillary activity, enabling rapid water uptake
- Large specific surface area and robust swelling on hydration without forming a high-viscosity gel
- Excellent plastic deformability and flowability; good compressibility, with disintegration time little affected by tableting force
- Strong re-processing capability—maintains full disintegration potential even after several wetting/drying cycles
- Low peroxide content
- Good long-term stability

KoVidone® VA64



Product name KoVidone® VA64 Copovidone
USP/EP name Copovidone, Copovidonum
INCI/CTFA VP/VA copolymer 60/40
CAS NO. 25086-89-9
K value 25.2-30.8 (Copovidone 28), 27.0-33.0 (Copovidone 30)
Properties Hygroscopic capacity lower than KoVidone® K30; Soluble in water, alcohol and many other organic solvents; Glass transition temperature (Tg) lower than KoVidone® K30; Forms transparent, water removable films.
The content of VA 35.3-41.4%



KoVidone VA64

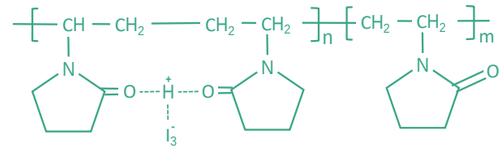
Main Application

- Water-soluble tablet binder; suitable for wet or dry granulation and direct compression processes, improves particle compressibility.
- Film-former; permeable film coating for tablet and sugar coatings to protect against splitting, decrease moisture sensitivity and provide good film adhesiveness, elasticity, and hardness.
- Porogenic agent; for use in taste-masking and component of the matrix material used in controlled-release formulation.
- Solubilizing agents; for solid dispersion processes to enhancing bioavailability and improve drug solubility.

Performance

- High plasticity and unaffected by changes in compaction force, imparting excellent tablet hardness; one of the best dry binders for direct-compression.
- Ideal for poorly compressible actives, improving compressibility to meet direct-compression requirements. The binder of choice for effervescent and dispersible tablets.
- In combination with HPMC, HPC, PVA, etc., markedly enhances film elasticity and adhesion to the tablet core, increases coating gloss, lowers HPMC viscosity, boosts cellulose-film plasticity, reduces brittleness, and cuts plasticizer use.
- Suitable for sub-coating/plain-tablet isolation layers, taste-masking formulations, and as a porogen in sustained-release coatings.
- Excellent plasticity makes it well suited for hot-melt-extrusion preparation of solid dispersions.
- Forms hydrogen-bonded polymer complexes with drug molecules in water.As a matrix for gastric-retentive tablets, it offers strong retention, prolongs drug release, improves absorption, and enhances bioavailability.

KoVidone® - I



Product name KoVidone® - I
USP name Povidone - Iodine
EP name Povidone Iodinated
I (Povidonum Iodinatum)
NCI: PVP-Iodine
CAS NO.: 25655-41-8

KoVidone®-I is a broad spectrum biocidal, antifungal and antiviral agent with extremely low risk of promoting microorganism resistance.

Properties Broad spectrum biocide; Soluble in water, ethyl alcohol, isopropyl alcohol, glycols, glycerin, acetone and polyethylene glycol; Film-forming; Stable complex; Less irritating to the skin and mucosa; Non-selective germicidal action; No known tendency for the development of resistant microorganisms.

Effective Iodine 9-12%

Main Application

- Broad-Spectrum Antimicrobial
- Polymer-Stabilized Iodine
- Trusted in Surgery & Wound Care
- Proven Safety & Efficacy
- Versatile Application

Comprehensive solutions tailored to your needs.

KoVidone I Series
- Standard PVPI

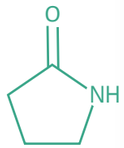
KoVidone I XT Series
- Enhanced solution stability

Performance

- Used as an antiseptic agent against abroad spectrum of disease causing microorganisms.
- Widely used in pharmaceutical, veterinarian, agricultural and consumer good applications.
- Used for the disinfecting of skin and equipment before injection or surgery.
- Used for the treatment of: oral, vaginal, skin and hair infections.
- Highly effective at inactivating human and avian influenza viruses.
- Disinfectant used in the aquaculture and veterinarian industries to control pathogenic bacteria, reduce the infection of fish and fish eggs and prevent and cure animal diseases.

NKY® - 2P

Product name	2-pyrrolidone
CAS NO.	616-45-5
Appearance	Colorless crystal
Properties	Completely miscible with most solvents including water, alcohol, diethyl ether, chloroform, benzene acetate and carbon disulfide; Exist as liquid above25°C; Easily to recover; Good chemical stability; Incombustible.
Product Standard	QB-05NKY-2-P



Content	%min	99.0
Moisture	%max	0.1
γ-Butyrolactone	%max	0.2
Amine	%max	0.2
Color (APHA)	max	50

Main Application

- Used as an intermediate in the manufacture of polymers such as polyvinylpyrrolidone and polypyrrolidone, and the raw material of “acetamide pyrrolidone (piracetam)” and “γ-Aminobutyric acid”.
- Acted as an organic compound consisting of a five-membered lactam, which is used in industrial settings as a high-boiling non-corrosive polar solvent for a variety of applications, such as medicines and resins.
- Used as solubilizer for drug active in injectable liquid products;
- Used as high concentration antibiotic solutions for veterinary parenteral formulations.

Sustainability

“As a global leader in the R&D and production of polyvinylpyrrolidone (PVP) products, we not only strive for outstanding product performance and rigorous quality standards, but also deeply integrate the concept of sustainable development into our corporate philosophy and strategic planning.

We are committed to sustainability and making a positive impact on the environment and communities—continually investing in innovative solutions such as installingsolar panels and optimizing production processes to enhance efficiency and reduce energy consumption. Our sustainability commitment goes beyond operations,as we actively participate in initiatives like EcoVadis and M2030, further strengthening our determination to build a greener, more sustainable future.”

ecovadis MANUFACTURE 2030

Quality System

The Quality Management Department is responsible for end-to-end quality assurance—from raw material auditing, production process control, and laboratory testing to final product release. A comprehensive quality management system has been established, covering standards such as API GMP, ISO 9001, ISO 14001, ISO 45001, and EXCiPACT™ GMP.

- Equipped with advanced quality analysis and microbiological testing laboratories
- Every product batch must undergo a rigorous quality release process
- Full-process quality traceability and deviation control mechanisms are implemented
- **In 2024, conducted 99 audits in total—63 by domestic clients and 36 by international clients**

For us, pharmacopoeial standards are only the minimum requirement. All NKY products consistently exceed the quality benchmarks set by international pharmacopoeias such as USP, EP, and JP in key areas including purity, impurity control, and biocompatibility.

At Boai NKY, we understand that every aspect of product quality reflects our company's reputation and forms the foundation of our customers' trust. That's why we have established a highly standardized and comprehensive quality management system that covers every stage—from raw material procurement to final product delivery. Our Quality Management Department is not only the executor of quality control, but also a driving force for continuous improvement and risk prevention. We are committed to providing safe, stable, and traceable high-quality products and services to customers around the world.

Quality is not only NKY's

core competitive advantage,

but also the foundation of our **confidence** in the future.

NKY PHARMA