SUPPLY FOR HEALTH
LIFECYCLE-ORIENTED LOGISTICS SOLUTIONS

KUEHNE+NAGEL
INTRODUCTION TO KUEHNE + NAGEL

Founded as a family-owned enterprise in 1890, the Kuehne + Nagel Group is today one of the world’s leading logistics companies. With approximately 55,000 employees working at more than 900 locations in over 100 countries around the world, the Group covers every aspect of international logistics – on land, at sea and in the air. Over many decades Kuehne + Nagel has developed specific service offerings for the pharmaceutical and healthcare industry.
• **International Forwarding:** Regulatory auditable and quality compliant processes, reefer network for road and seafreight shipments, from basic airfreight to complex door-to-door transportation for ambient and temperature controlled products using the Cargo 2000 standard, Kuehne + Nagel’s packaging solutions and global visibility system “KN Login”.

• **Warehousing:** Kuehne and Nagel provides different levels of storage options whether it is a secure option for life saving products, ambient and cold chain active pharmaceutical ingredients and finished products in different temperature ranges or other storage for quarantine products, controlled drugs and promotional materials for conferences.

• **Distribution:** National and regional transportation to production sites, affiliates, wholesalers, distributors, drug store chains, retail stores, sales representatives, doctor’s offices and direct-to-patients using Kuehne + Nagel equipment, validated sub-contractors and preferred parcel/express companies.

• **Supplier & Inventory Management:** Management services focusing on the dynamic alignment of inventory to synchronize supply with demand. A cohesive business model allows Kuehne + Nagel customers to engage in a Collaborative Planning, Forecasting & Replenishment Program along their extended enterprise.

Kuehne + Nagel is a major integrated logistics provider within all key global industries and trade regions. The Group understands logistics service as a market oriented service, which involves the integrated planning, design, operation and monitoring of the whole supply chain. The proper handling of the respective information flows between a client company and its customers, as well as within the client’s own boundaries, is as critically important to the success of an operation as is the management of the material flow. Kuehne + Nagel’s supply chain management products are firmly established around the globe and are based on the solid foundation of its worldwide company network.

Whatever part of the world Kuehne + Nagel’s people come from, together they embody a unique corporate culture: excellent training and education, uncompromising customer orientation and a strong sense of quality and responsibility - to make the lives of our customers better and easier.
Competitive dynamics in the pharmaceutical and healthcare industry have changed over the past several years. Rising healthcare spending has forced payers and regulators to demand changes in the pricing of healthcare services:

- Blockbuster drugs are becoming fewer and more costly and, at the same time, generic products are limiting lifecycle returns of pharmaceuticals.
- A specific challenge is that grey market product sales are damaging profits and reputations.
- In addition, regulatory inconsistencies across the globe negatively impact economies of scope.
Kuehne + Nagel’s understanding of the pharmaceutical and healthcare industry’s needs, its challenges, and product lifecycle demands allows it to adapt and react to these external factors. Specialised know-how results in efficient and optimised processes through the whole supply chain letting the company be productive and effective in responding to some of the challenges that its customers organisations face:

- **Increasing pressure to justify investments** – by leveraging proven technology and standardised procedures, Kuehne + Nagel is able to achieve operational excellence, with a focus on continuous improvement of its global operations managed on behalf of its customers. This results in lower overall cost due to more effective utilisation of assets. Although being cost effective, a 100% quality commitment is a pre-requisite to operate in any pharmaceutical environment. Kuehne + Nagel is also aware that not all investments in so called “latest technology” are needed to benefit its customers.

- **Complex regulatory and quality environments** – Kuehne + Nagel’s proven logistics processes and pre-validated IT systems help its customers comply more effectively with regulations from local health, customs and trade authorities, and do this across the globe resulting in reduced complexity. Adapting standardised pharma operating procedure and approaches wherever possible helps to ensure compliance with international standards, e.g. ISO 9001 (quality), ISO 14001 (environment), OHSAS 18001 (safety and health), and GDP/GMP (pharma certificates). Kuehne + Nagel customers utilise its global quality & training organisation on a day-to-day basis for specific audit requirements, e.g. from the FDA, DEA or local authorities.

- **Low volumes but high risk exposure** – Kuehne + Nagel’s logistics procedures are compliant with the most recent US, EU and other regulatory programmes to ensure product integrity throughout the supply chain. A 100% service quality is crucial as every mistake in logistics processes can lead to life-threatening situations if patients do not get their needed medication in time. In case anything unexpected should happen + Nacora, Kuehne + Nagel’s 100 % owned insurance brokerage company, can offer intelligent cargo insurance solutions to cover full product value with competitive premiums that are tailored to the specific risk profile of its customers.

- **Multiple entities with own interest** – many parties like hospitals, pharmacy chains, local and regional wholesalers, contract manufacturers, and API manufactures need to work together and leverage IT systems across companies and hence add value to all supply chain partners associated with your product’s distribution.

Kuehne + Nagel has been supporting global pharmaceutical customers for many years to strive for integrated, optimised logistics offerings to drive significant improvement in overall supply chain performance.

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**RISING HEALTHCARE EXPENDITURES FORCING PAYERS TO DEMAND CHANGES IN HEALTHCARE PRICING**

**HEALTHCARE EXPENDITURES AS A % OF GDP**

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**UNITED STATES**

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**GERMANY**

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**UNITED KINGDOM**

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**SWITZERLAND**

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**FRANCE**

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Planning for logistics and the supply chain is usually an "after the fact" process. This means that traditional logistics services are not integrated and costs, quality and reliability are often not up to the standards required for pharmaceutical and healthcare products. Kuehne + Nagel has addressed this issue by developing an approach to logistics service provisioning based on a lifecycle view of the pharmaceutical and healthcare supply chain. Kuehne + Nagel's lifecycle approach to supply chain management allows it to provide a set of integrated services that can be linked together depending on the lifecycle stage a pharmaceutical product is in.

KUEHNE + NAGEL'S CONCEPT OF LIFECYCLE-BASED LOGISTICS
Kuehne + Nagel’s lifecycle approach to logistics services is based on concepts developed for the efficient and effective delivery of healthcare followed by the best medical practitioners. These concepts recognise that the most effective way to provide for the health and well being of an individual is to start with prenatal care and follow the individual in a pro-active manner throughout their life. Kuehne + Nagel has adopted this approach for logistics services for the healthcare industry. By developing integrated, modular service offerings that start at the beginning of a product’s development and that can be extended and expanded as the product matures and then faces its end of life, pharmaceutical and healthcare companies are provided with the highest level of assurance at the lowest lifecycle cost of any other type of logistics service model. The Kuehne + Nagel lifecycle approach to logistics addresses the challenges facing the industry today and provides a means for customers to move forward confidently with the development, distribution and after sales support of their products knowing that there will be a highly reliable set of integrated logistics services available to them.
Analysing the lifecycle of pharmaceutical and healthcare products over many decades, Kuehne + Nagel has identified five lifecycle phases with unique logistics requirements:

1. Research & Development
2. Product Launch
3. Market Operations
4. After Market
5. End of Life
For each of these five lifecycle phases Kuehne + Nagel has developed specific logistics services and solutions:

1. Research & Development - Pharmaceutical or healthcare products originate in the research and development laboratories of their parent organisations. Kuehne + Nagel provides logistics services for the controlled delivery of raw materials like chemicals, biological inputs and expendables, as well as clinical trials logistics. Innovation, flexibility and the in-depth knowledge of its local and regional staff are most critical during this sensitive phase of a product’s lifecycle.

2. Product Launch - For products that move beyond the laboratory and into market tests, Kuehne + Nagel provides both distribution services for field tests and ramp up services for the piloting and production of the products – both highly reliable and with maximum speed-to-market. Kuehne + Nagel’s installation services include the operation and installation of medical testing equipment such as MRI and CAT scanners into hospitals. To support product launches and ongoing distribution, Kuehne + Nagel has developed a global network of mass distribution centers for literature and samples including web-shop solutions for order entries, e.g. from sales representatives or hospitals.

3. Market Operations - Once a product has been released to the market, Kuehne + Nagel’s capabilities for handling the regulated distribution of goods and cold chain movements of pharmaceuticals ensure the producer that the logistics for their particular product will be executed in a professional and cost effective manner. Primary distribution starts at the multiple suppliers and production sites and finishes at local or regional distribution centers depending on the customer’s organisational set-up. The strength of the Kuehne + Nagel organisation comes from building robust end-to-end solutions across transportation modes, integrating the multiple supply chain partners. In many cases Kuehne + Nagel’s services include on-site help desks and customer care center operations that are managed on behalf of its pharmaceutical and medical customers.
1. Lifecycle in the most secure and cost effective manner possible, no matter where they may be developed or distributed. While not all services are yet deployed in all locations to the same maturity status, the Kuehne + Nagel network enables rapid knowledge sharing across the globe. One example is its standardised, pre-validated warehouse and transportation management system, CIEL FW/FD, operated in most of Kuehne + Nagel’s global warehousing locations, all running the same release version. With strict adherence to regulatory guidelines in its operations and detailed understanding of the pharmaceutical and healthcare industries, Kuehne + Nagel assures its customers of a reliable and compliant logistics solution wherever required. If you have developed a solution with Kuehne + Nagel in one country you have the ability to replicate this solution with Kuehne + Nagel across the globe in 2, 20 or even 100 countries if required.

Our ultimate goal is to become an extension of your business – to cure diseases and improve the quality of life.

4. After Market – Kuehne + Nagel’s after market management supports a range of after market logistics capabilities, including its leading Critical Service Logistics solutions, which can handle the most complicated service parts and maintenance services as well as comprehensive reverse logistics. Its emergency & relief logistics service is designed to support humanitarian efforts of governmental, non-governmental and charitable organisations, both in routine procurement and emergency situations.

5. End of Life – For medical products reaching their end of life or requiring repair or servicing, Kuehne + Nagel’s recycle and destruction management services provides the appropriate level of security to its customers to meet their stringent regulatory requirements, including physical product pickup, witnessed destruction and detailed event reporting.

Kuehne + Nagel’s comprehensive and integrated set of lifecycle oriented logistics services ensures its pharmaceutical and healthcare partners that their products will be managed throughout their lifecycle in the most secure and cost effective manner possible, no matter where they may be developed or distributed. While not all services are yet deployed in all locations to the same maturity status, the Kuehne + Nagel network enables rapid knowledge sharing across the globe. One example is its standardised, pre-validated warehouse and transportation management system, CIEL FW/FD, operated in most of Kuehne + Nagel’s global warehousing locations, all running the same release version. With strict adherence to regulatory guidelines in its operations and detailed understanding of the pharmaceutical and healthcare industries, Kuehne + Nagel assures its customers of a reliable and compliant logistics solution wherever required. If you have developed a solution with Kuehne + Nagel in one country you have the ability to replicate this solution with Kuehne + Nagel across the globe in 2, 20 or even 100 countries if required.

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KUEHNE + NAGEL’S
“SUPPLY FOR HEALTH” SERVICES FOR THE PHARMACEUTICAL INDUSTRY

PRODUCTS
- PHARMACEUTICALS
- MEDICAL DEVICES
- HEALTHCARE PRODUCTS

MARKETS
- GLOBAL REACH
- 100+ COUNTRIES
- 9 CORE REGIONS

Interested in further information?
To gain a comprehensive overview of the logistics services and supply chain solutions that Kuehne + Nagel could offer to your company, send a brief E-mail with your specific request to pharma@kuehne-nagel.com

One of our logistics specialists will gladly assist you. Alternatively, you can download general material published on our website www.kuehne-nagel.com/pharma or visit one of our more than 900 offices around the globe.