

Exporting anti-friction bearings to Europe

Europe is the largest market for anti-friction bearings in the world, characterised by a growing demand for cost-effective bearings. This could offer you interesting market opportunities. Competitive pricing and the range that you can offer are important aspects. An increasing number of bearings in today's market provide application-specific solutions. Such special or non-standard bearings enable you to maintain better than average margins. The larger markets in Europe include Germany, France and Italy.

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1. Product description

Anti-friction bearings are usually metallic devices. In certain applications, bearings are also produced in full ceramic or hybrid forms (metal combined with ceramics). Anti-friction bearings allow constrained relative motion between two parts due to the placement of round elements between these two parts. The relative motion of the pieces causes the round elements to roll, or tumble, with little sliding. They enable machinery to move at very high speeds and carry high loads with ease and efficiency.

Bearings are found in applications such as automobiles, trains, aeroplanes, computers, construction equipment, machine tools, refrigerators and ceiling fans.

When bearings or anti-friction bearings are referred to in this survey, it involves the selection of the product codes in the <u>Harmonised System</u>, paragraphs 84821 to 84828, unless stated otherwise.

Product specifications

The specifications of bearings as generally required by European buyers are described below. These involve requirements related to the material used, the design and packaging.

Material and design

The material requirements of the components that make up the bearing assembly can differ for each customer. For instance, if your customer is a European bearing manufacturer, the materials of the components will usually be specified and will probably require a Certificate of Conformity.

Bearing manufacturers that buy complete bearings from a subcontractor (the producer or exporter of bearings) will specify the design and materials. They may also require conformity certification. Often, they will only allow their subcontract suppliers to use bearing steels from approved suppliers. This is because the structural and chemical composition of the steel is of critical importance to manufacturers. They may also specify their approved suppliers for wire, castings, rollers, balls or cages.

Labelling and packaging

In general, multi-packaging is used for smaller bearings and single packaging is applied to large bearings. Usually, bearings are coated with a rust preventative (the shelf life must be at least two years) before being packaged and shipped.

Bearings packaging consists of an inner package and an outer package. The inner package is an oil paper or plastic tube/envelope, to avoid dispersion of the protective oil, or sometimes a hermetically vacuum-sealed synthetic pouch. The outer package is usually a carton lined with plastic sheeting and should contain the brand name and type number.

The package for ocean transport is a wooden, steel or plastic pallet, wrapped in plastic sheeting and packaged with metal strips. The size of the boxes depends on the weight per box and handling possibilities. Original Equipment Manufacturers (OEMs), bearing manufacturers and distributors may have different packaging requirements. Customers may also have their own additional requirements and preferences.

Tips:

- Customers often provide packaging requirements. If this is not the case, ask them what they would prefer.
- You should be careful to provide the right amount of packaging; not too little but also not too much, as it is expensive to dispose of packaging in Europe.

Quality

The European market has varying quality requirements. These may depend on application requirements, price and the type of buyer with whom you are dealing:

- Importers/distributors mainly offer a "good, better, best" range in bearings. Good means a cheap bearing of an unknown brand, better an own brand and best a premium brand. They offer these ranges according to the application demands and their customers' price expectations.
- End users may place orders purely based on price or on "functional" quality requirements.
- Customers might require a range of products either marked with the brand of the exporter from the developing country, unbranded or importer/distributor-branded.
- OEMs throughout Europe will require bearings that have no risk of premature failure in application, at least while under warranty conditions.
- Bearing manufacturers will be the most demanding of all target buyers for either complete bearing assemblies or bearing components. They will always specify stringent quality and supply conditions before placing orders.

Tips:

 Whatever the type of buyer, you must identify their requirements and tailor your product offer accordingly. In most cases, the buyer will provide a document with very detailed specifications, including quality, materials, deviations, quantity and delivery date. Make a detailed offer that takes all specifications and requirements of the buyer into account.

- Please bear in mind that some buyers will not want their technical specifications to leak out to competitors. In these cases, you may be required to sign Non-Disclosure Agreements (NDAs). If the NDA is broken, it may lead to legal consequences.
- Sometimes, especially for OEMs, it may be worth asking the buyer about the exact nature of the bearing application. This allows you to offer a more bespoke solution and obtain a better price.

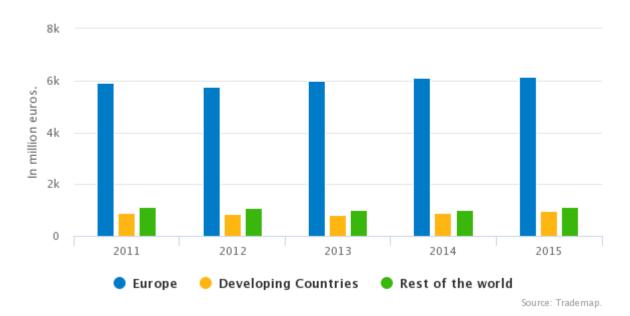
2 . What makes Europe an interesting market for anti-friction bearings?

Imports

After a dip in 2012, European import of anti-friction bearings has been increasing every year. In 2015, the total import of anti-friction bearings amounted to €8.2 billion, mainly coming from within Europe. However, the highest growth was recorded by imports from developing countries, specifically from China and India. In 2015, imports from developing countries for the first time reached 12% of the total European imports.

Figure 1: European imports of anti-friction bearings by main origin

2011-2015

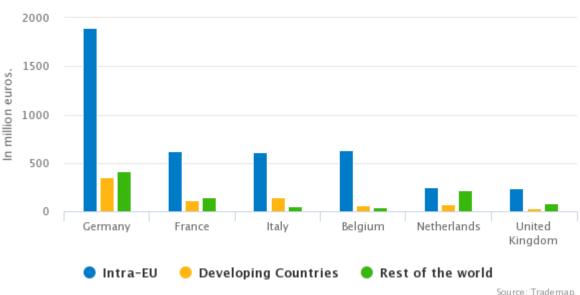


Germany is the largest importer of anti-friction bearings, followed by France and Italy. Together, they represented 53% of the total imports in 2015, with Germany alone holding a share of 32%. The import from developing countries reached €355 million in Germany, which accounts for 37% of the total European import from developing countries. The import of anti-friction bearings is expected to show a small growth over the next few years, in the range of 0.5-1.5%.

Germany showed the largest absolute growth (≤ 68 million over four years' time) in imports from developing countries. Other countries with a high absolute growth in 2015 were the Netherlands (≤ 21 million) and Belgium (≤ 19 million). Note that Belgium's position is mainly due to its transit function for bearings, as SKF's distribution centre is located in Belgium and is used to supply

Figure 2: Leading European importing countries of antifriction bearings

2015



Source: Trademap

Leading suppliers

Representing a share of 19% in the total European imports, Germany was the leading supplier of anti-friction bearings in 2015. France was in second position (10%), followed by China (8%), Italy (8%), Japan (6%) and the Netherlands (6%). Supplies from developing countries were dominated by China ($\mathfrak{E}648$ million) and India ($\mathfrak{E}77$ million). Of these countries, India showed the highest annual growth over four years' time (7.2%).

Japan is by far the largest supplier from the "Rest of the world" category (€497 million), followed by the United States (€308 million). This indicates that a considerable amount of anti-friction bearings is still not produced locally, but is imported from the home countries of the world's largest bearing manufacturers.

Tips:

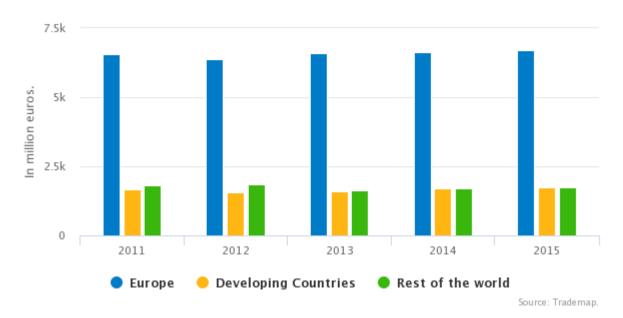
- Benchmark your company and products against your peers from China, India as well as those from European countries. Several factors can be taken into account, such as market segments served, perceived price and quality level, countries served, and so on.
- Use <u>Eurostat</u> and <u>ITC International Trade Statistics</u> for detailed trade statistics about the industry.
- You can find relevant trade fairs in trade fair databases such as <u>AUMA</u> and <u>Eventseye</u>. The most important trade fair for you is <u>Hannover Messe</u> (Germany). Every odd year, there is an event at the Hannover Messe dedicated to the motion control industry).
- You can use the <u>EU Export Helpdesk</u> for more information on gaining access to the European market.
- <u>Commisceo Global</u> offers a lot of information about differences in business cultures and etiquette. You should pay some attention to this aspect before you start exporting to Europe.

Exports

The total European exports of anti-friction bearings increased slightly (by 1% per year on average) to €10 billion in 2015. Exports of European anti-friction bearings are mainly destined for other European countries. The export to developing countries was stable between 2011-2015 at 16-17% of the total European exports.

Figure 3: European exports of anti-friction bearings to main destinations

2011-2015



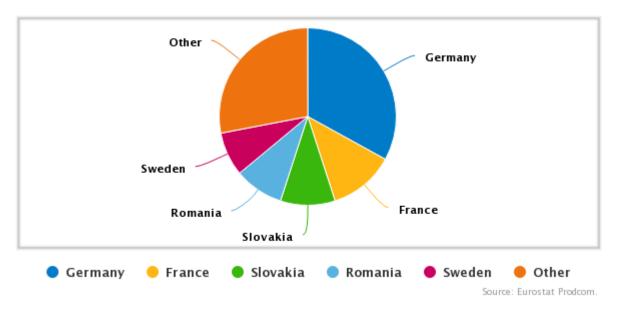
Germany is Europe's largest exporter of anti-friction bearings (€3.3 billion in 2015), followed by France and Italy. Germany's exports accounted for 33% of the total European exports. 50% of Europe's exports to developing countries came from Germany. France and Italy represented 14% and 9% of European exports, Belgium 7%, the Netherlands 6% and Sweden 5%. European export of anti-friction bearings is expected to show a small growth over the next few years, in the range of 0.5-2.0%.

Production

European production dropped to &1.9 billion in 2012, after a peak of &2.3 billion in 2011. In 2013, production started to increase again, reaching almost &2.1 billion in 2014. Germany is the largest producer of anti-friction bearings in Europe (33% share), followed by France (12%) and Slovakia (10%).

Figure 4: Main European producers of anti-friction bearings

2014



European anti-friction bearings production mainly comes from the world's leading bearing producers. The bearing industries in the largest importing and producing countries can be described as follows.

Germany

Germany is home to the <u>Schaeffler Group</u>, a merger of the two German bearing manufacturers <u>FAG</u> and <u>INA</u>. Production output in Germany mainly comes from factories of the world market leaders such as INA-FAG (>5 production facilities), <u>SKF</u> (2 for industrial bearings and 1 for automotive bearings), <u>JTEKT</u> (1) and <u>NSK</u> (1), as well as from a few small or medium-sized companies (<u>GMN</u>, <u>HFB</u>, <u>IBC</u>, and <u>SLF</u>).

France

France is the home of SNR, the originally French bearing manufacturer formerly affiliated to French car manufacturer Renault but acquired by Japan-based NTN in 2007. France's output is mainly produced in three factories from NTN-SNR, two from JTEKT, two from SKF, one from INA and one from Timken.

Italy

Production output in Italy mainly comes from factories of the world market leaders <u>Timken</u>, <u>INA</u> and <u>SKF</u> (one production facility each). There are a few smaller producers in Italy, such as <u>Meter Bearings</u>, <u>CPM Special Bearings</u> and <u>FARO</u>.

The United Kingdom

Production output in the United Kingdom mainly originates from factories of the world market leaders INA-FAG (1 production facility), <u>SKF</u> (2 production facilities), <u>Timken</u> (3), <u>NSK</u> (2) and <u>JTEKT</u> (1).

Tips:

 Apart from Germany, France, Italy and the United Kingdom, there is also considerable production output in Spain, Austria, Poland, Hungary and Slovakia. The presence of producers in these countries offers subcontracting opportunities for both complete assemblies and components.

Apparent demand

European apparent demand dropped to €2.1 billion in 2012, after peaking at €2.4 billion in 2011. The market recovered in 2013 and 2014, with European demand totalling almost €2.4 billion in 2014. Germany and France are the largest markets for bearings, together representing 49% of the total market. Each of the large markets in Europe has its own specific market profile, which will be described below.

Germany

Germany is the number one producer in virtually every industry in Europe. It is well known for its output of machinery (all segments), cars and electronics. Examples of large market segments within the German machinery and equipment industry include food processing and packaging, construction and building, agriculture and material-handling technology.

Italy

Italy's main industries are iron and steel, machinery, chemicals, textiles, food processing, motor vehicles, footwear, clothing and ceramics. It is the second-largest machinery producer in Europe, producing virtually all categories of machinery. The most important market segments include machinery for agriculture, textiles, the food industry, packaging, plastics and woodworking.

France

France's leading industries produce machinery, chemicals, automobiles, metals, aircraft, electronic equipment, textiles and food. France is the second-largest European producer of agricultural machinery. This explains why most machinery production is focused on this segment. Other important machinery segments for France are textile, apparel, leather, plastic and food.

The United Kingdom

Key manufacturing sectors in the United Kingdom include aerospace, automotive, chemicals, oil, defence equipment, electronics, food and beverages. The United Kingdom has a long tradition of producing machinery and equipment. Important market segments include agricultural machinery and construction, quarrying and mining machinery.

The Netherlands

The Netherlands is home to a large agricultural and horticultural industry network. Other key sectors are metal and engineering products, electronic machinery and equipment, chemicals, petroleum, construction, microelectronics and fishing. In terms of machinery production, there are two segments that stand out: agricultural machinery and machinery for food, beverage and tobacco processing.

Tips:

• Concentrate on market segments that are strongly represented in the focus countries. Specialisation in any of those segments may give you a competitive advantage, as there is a rising demand for customised solutions. European importers prefer specialised suppliers that are able to offer customer support and joint engineering in specific market segments.

 You can find more information about the anti-friction bearings sector and the companies in different countries by visiting the websites of sector associations such as <u>CETIM</u> and <u>FIM</u> (France); <u>VDMA</u> (Germany); the <u>Dutch Association of Engineering, Electronics and Contracting</u> (the Netherlands); and EPTDA and <u>The Ball and Roller Manufacturers</u> <u>Association</u> (the United Kingdom).

3. What trends offer opportunities on the European market for antifriction bearings?

In recent years, the larger bearing manufacturers have set up plants around the world and are now implementing local sourcing programmes for components or complete assemblies. This enables companies from low-cost countries to supply products to factories within their geographical region.

Demand for cost-effective bearings has increased

The European market is characterised by a growing demand for cost-effective bearings, while advances in materials have extended the operating life of anti-friction bearings sold, even under harsh operating conditions. One key area of advance is the wind power segment.

Generally, the more common the bearing type, the more competition there will be and, as a result, the lower the margin for the producer. On the other hand, the more sophisticated the bearing type, the higher the processing factor in the landed cost price and the greater the interest of European companies in sourcing from developing countries. This is because manufacturers in developing countries have a competitive edge in processing costs versus European manufacturers.

In Europe, raw material costs make up roughly 45-55% of anti-friction bearings prices, processing 25-35%, packaging and insurance 5-6%, and overhead and profit 15%. In India, for example, the processing costs are estimated at a mere 10%. Experienced European buyers may require a substantial price difference from European-origin bearings to cover all costs involved in global sourcing, such as inspection, transport, maintaining overseas relations, higher stock levels, import duties and extra quality assurance.

Tips:

- Competitive pricing is vital if you intend to enter the European market.
- If competitive pricing is difficult for you, consider exporting more non-standard products or specialities, because competition for specialties is likely to be less fierce.

Innovation continues

European bearings manufacturers are strongly investing in product development. Innovation in bearing technology is driven by the ambition to achieve longer service life, lower friction, less maintenance, lower overall cost, protective and insulated coatings, as well as lighter, smaller and extended capabilities. For example, they apply sensors to measure parameters such as speed, load, temperature and overall bearing condition.

In addition, bearing manufacturers have implemented continuous improvement systems to improve production efficiency and reduce costs. Refer to $\underline{\text{this example}}$ from Schaeffler in the United

Kingdom.

It is expected that future bearing materials will further improve energy efficiency and boost performance via increased load-carrying capacity. Bearing technology advancements will continue to focus on the use of high-hardness coatings, ceramics and new speciality bearing steels. New elements that are expected to become the main focus in the future are sensor technology and high-temperature thermoplastics.

Tip:

 The trend of further innovation provides opportunities for you if you are able to supply precision bearings. At the same time, many opportunities remain for cost-effective bearings.

Trend towards smaller minimum order quantities

As the output from OEMs has reduced in recent years, these have increasingly used distributors to supply their bearings. Instead of sourcing directly from bearing producers, buying from distributors allows them to keep their inventory levels at a lower level, resulting in a lower working capital. Distributors are able to respond more quickly to demand than bearing manufacturers, meaning that they offer more flexibility in terms of service.

Until recently, Chinese anti-friction bearings suppliers were not providing the required level of flexibility; minimum order quantities of bearings from China have been at relatively high levels in the past. This trend is still an opportunity for producers from developing countries that can offer smaller minimum order quantities and establish relationships with European importers and distributors.

Tips:

- Improve your production flexibility to be able to offer lower minimum order quantities.
- Consider flexible logistics concepts in order to offer small minimum order quantities; for example, Less-Than-Container Load (LCL) shipment.
- Obtain information on Incoterms® from Business Support Organisations in developing countries. They should provide information to help you to understand the logistics chain.
- Examine the range that you can offer (the larger, the better in most cases).

4. What requirements should anti-friction bearings comply with to be allowed on the European market?

See our study of <u>Buyer requirements for motion control</u> for a general overview of requirements. Below are the requirements that apply specifically to anti-friction bearings.

Legal requirements

No specific legal requirements apply to anti-friction bearings in general. This also means that there are no specific legal requirements for anti-friction bearings that are exported to Europe.

There is one exception: there are technical standards required for products applied in the

automotive industry. This also affects anti-friction bearings, as they must have a so-called "type approval". In this case, the bearings will have to undergo specific application and endurance testing.

Packaging and liability

Note that there is also non-product-specific legislation on <u>packaging</u> and <u>liability</u> that applies to all goods marketed in Europe.

The European Union has also restricted the use of certain chemicals in the <u>Registration</u>, <u>Evaluation</u> and <u>Authorisation of Chemicals</u> (REACH) Regulation. In the case of anti-friction bearings, REACH is relevant for the protective and anti-corrosion oils used in the packaging. This means that you, as an exporter from outside Europe, have to provide information on the chemicals/oils used in the product.

Duties

For anti-friction bearings, an 8.0% duty is levied on European imports of bearings from third countries. Several countries benefit from a preferential 0% tariff under the Generalised System of Preferences, such as Turkey and South Africa. Note that it is only possible to claim a preferential tariff treatment with a Certificate of Origin.

Tips:

- The <u>TARIC database</u> provides additional details for the codes of Chapter 8482.
- Exporters from a country with a preferential 0% tariff have a small competitive advantage.

Non-legal requirements

Buyer specifications

The customer's main requirements relate to the bearing itself: design, material, dimensions and finishing. Customers usually base their specifications on ISO standards. Most ISO standards for anti-friction bearings relate to the dimensions and tolerances of both complete bearing assemblies and bearing parts. ISO281 specifies ways to calculate basic rating life and dynamic load rating.

Tip:

• You can find more information about public standards at the websites of the <u>International</u> <u>Organization for Standardization</u> and the <u>British Standards</u> Institution.

Material and testing requirements

Convincing a potential buyer of quality aspects through compliance with standards can be decisive in the sample phase. If the customer accepts the samples and all other conditions have been agreed, the contract can be signed. After this, the main challenge for the suppliers is to deliver the products according to the agreed specifications, delivery times and volumes. In the case of subcontracting, European bearing manufacturers usually require you to use steel from approved suppliers to ensure the raw material's structural and chemical composition.

Tip:

• See our <u>10 tips for doing business with European buyers of motion, drives, control and automation</u> and our <u>10 tips for finding buyers in the motion control sector</u> for more information on which topics are decisive for European buyers when searching for (new) suppliers.

5 . Through what channels can you get anti-friction bearings on the European market?

Figure 5 below shows that a distinction can be made between two market segments: the Original Equipment Manufacturers/Suppliers (OEM/OES) and the Independent Aftermarket (IAM). Note that the thickness of the arrows emphasises the importance of different trade channels for exporters from developing countries.

You should focus on the IAM in Europe. More specifically, you should focus on bearing distributors that support small to medium-sized OEMs, are technically capable and are able to seek out applications that may need niche bearing solutions. Each of the market segments will provide opportunities; the best opportunities are with companies that want to source and offer more competitive products.

Below figure 5, further details of the two main market segments are described. Some examples of importers/distributors in the main importing countries in Europe are mentioned under "IAM and small OEM". Several small to medium-sized producers of bearings in the main production countries are listed there.

Developing Trade in Europe Country segments in Europe IAM and small Importer Developing EU equipment country manufacturer producer Distributor , and of anti-friction Dealer independent bearings aftermarket Small to medium-sized EU producer Large OEM

Figure 5: Trade structure for anti-friction bearings in Europe

Large OEM

OEMs usually buy a range of bearings in medium to large quantities. They may sometimes request specific packaging, in order to make handling easier when the product reaches the production line. This market accounts for more than half of the total European market.

IAM and small OEM

The IAM amounts to about €2 billion per year, covering the sales of bearings as replacement parts. Small OEMs are mostly served through this channel as well, as they require local inventory and service.

IAM customers require a wide variety of mostly standard bearings in small quantities. As a result, IAM customers are normally charged higher prices than OEM customers.

Large pan-European distributors account for a substantial part of aftermarket sales. However, they may not be the best prospect for you, since they are rather large and also provide a range of other products such as power transmission products, fluid power, oil seals and tools. Examples of such large distributors are Eriks, Brammer, Bianchi and IPH.

Europe counts hundreds of medium-sized distributors and importers. They operate on a national basis or in a limited number of countries, selling bearings on both exclusive and non-exclusive terms. Examples include <u>CIR</u> and <u>CRD</u> in France; <u>Apeltrath und Rundt</u> and <u>Kis Antriebtechnik</u> in Germany; <u>Cantoni Cuscinetti</u>, <u>AGM</u>, and <u>Centro Cuscinetti</u> in Italy; <u>Biesheuvel</u> and <u>World Bearing Trade</u> in the Netherlands; and <u>Godiva Bearings</u> and Midland Bearings in the United Kingdom.

There are large variations between major manufacturers' prices of products destined for the importer, distributor and OEM, respectively. Pricing is very complex and has no real and definite pattern. The most effective method for you is to price products at competitive net prices.

Several importers and distributors serving the aftermarket have begun to implement a brand strategy that provides a "good, better, best" option for their customers. In the next few years, these may be open for reconsideration in terms of their range and suppliers. This may also be part of an "own-brand" strategy.

Tip:

Perform market research: list European distributors/importers that do not yet offer a
three-tier range. Contact them about your capability of offering the "good" or "better"
range of bearings.

Small to medium-sized producers of bearings

Only smaller manufacturers are likely to subcontract complete bearing assemblies, which they brand in their name and package to their specifications. A few European countries host a limited number of small and medium-sized bearing producers; examples are given below.

Germany

- <u>GMN</u> (owned by Kaman, USA) is a medium-sized company with >400 employees, specialised in the production of high-precision ball bearings, machine spindles and freewheel clutches.
- HFB produces bearing housings.
- IBC has a long history in bearing production and specialises in bearings for the machine tool industry and power transmission. It has three facilities in Germany, Switzerland and Taiwan.
- SLF is a producer of ball or roller bearings and spindle units with customers worldwide.

The United Kingdom

- <u>Cooper</u> (owned by SKF) produces split roller bearings, requiring cast-iron housings and cartridges.
- HB Precision manufactures a range of special bearings in low volumes.
- Revolvo (owned by Timken) is a manufacturer of special bearings, including split roller.
- <u>Gamet</u> is a small manufacturer of high-precision tapered roller bearings.

Italy

- CPM is an Italian producer of special balls, rollers, tapered roller and needle roller bearings.
- <u>FARO Industriale</u> is an Italian group specialised in manufacturing radial, axial (or a combination thereof), cylindrical and needle roller bearings.
- <u>Meter Bearings</u> has a production facility in Italy, manufacturing ball, cylindrical and support rollers.
- Nadella makes both linear and needle roller products, providing complete bearings and parts.

Tips:

- Offer an optimal price and quality. Learn from the feedback that your prospects give you after quotation, and compare your product quality and price with other manufacturers.
- To find prospects in Europe, use bearing portals such as <u>Bearing Matrix</u> and <u>Bearingnet</u>, or country-specific sources such as <u>Artema</u> (France); <u>Sachon</u> and <u>Wer liefert was?</u> (Germany); <u>Applegate Directory</u> and Hotfrog (the United Kingdom); and <u>ABC Business Directories</u> (France, the Netherlands and Belgium).

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