

suppliers

We take on responsibility for our supply chain, expecting all our suppliers to adhere to our compliance, environmental and social standards.

Our approach to supplier management focuses on more than just quality, delivery reliability and competitive pricing – for us, compliance with fundamental environmental and social standards is also key. To achieve this, we have implemented commensurate strategies, processes and guidelines that we consistently work to improve. Our objective is to prevent violations of our standards in the supply chain.

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supply chain standards

We require numerous raw materials, packaging materials, technical products, components, and services, which we procure from more than 70,000 suppliers across 130 countries.

Our principles

Supplier management

Our supplier management aims to maintain fundamental environmental and social standards – as well as high quality, delivery reliability and competitive pricing. To this end, we have introduced strategies, processes and guidelines that we continuously improve to prevent violations of our standards in the supply chain.

We assign our vendors a risk category, taking into account their country risk, product category and the share of their sales that come from Merck KGaA, Darmstadt, Germany. In doing so, we pay particular attention to suppliers from non-OECD countries as we consider vendors in these countries to be at higher risk of disregarding environmental and social standards.

Guidelines establishing supplier requirements

We expect all our suppliers and service providers to uphold our environmental and social standards, which are primarily derived from the core labor standards of the International Labour Organization (ILO) and the UN Global Compact.

As well as these standards, we also support the Compliance Initiative of the German Association for Supply Chain Management, Procurement and Logistics (BME), which is committed to promoting compliant procurement practices. Moreover, we have signed the BME Code of Conduct, which sets out rules for combating corruption, antitrust violations and child labor, as well as for upholding human rights, protecting the environment and promoting fair working conditions.

Our Group Procurement Policy stipulates our expectations of our suppliers and specifies how we monitor compliance with our standards. This policy reflects both internal and external guidelines, such as the Merck KGaA, Darmstadt, Germany Code of Conduct, the Merck KGaA, Darmstadt, Germany Human Rights Charter, our EHS Policy (Environment, Health and Safety Policy), ISO 14001 (an environmental management standard), and the BME Code of Conduct.

In the Merck KGaA, Darmstadt, Germany Responsible Sourcing Principles, we define what we require of our suppliers in terms of corporate responsibility and obligate

them to apply these standards to their own vendors. The Merck KGaA, Darmstadt, Germany Responsible Sourcing Principles are integrated Group-wide with our general terms and conditions.

Organization and responsibilities

Our Group function Procurement is responsible for integrating corporate responsibility requirements into each stage of our sourcing and supplier management processes. An office within Group Procurement coordinates all relevant measures, such as regularly updating our guidelines, revising existing processes and coordinating our participation in industrial initiatives. Our Procurement employees in all countries receive training on our guidelines and processes.

If the legal framework is modified, we incorporate these changes and, if necessary, initiate the appropriate measures. A recent example is the UK Modern Slavery Act (p. 14) 2015, which requires all companies with a certain turnover in the United Kingdom to produce a statement detailing the steps they are taking to address slavery and human trafficking in their business. We intend to issue our first such statement in 2017.

Supplier monitoring: TfS membership

In 2014, we joined the Together for Sustainability (TfS) initiative, which provides extensive supplier assessments via its EcoVadis platform. We encourage our vendors to be assessed by EcoVadis and now have access to the assessments of more than 670 of our key suppliers – 400 of which we initiated. Suppliers are assessed either on self-reported and publicly accessible information or via audit. Since joining this initiative, 26 audits that we initiated have been conducted on our vendors. After first implementing the TfS methodology for our raw material suppliers, we have now expanded it to all our procurement activities, including consultancy services, information technology and logistics services. We are currently developing a method to systematically incorporate TfS results when evaluating and choosing vendors.

FAST FACT

TfS INITIATIVE

The TfS initiative was launched in 2011 by companies in the chemical industry and aims to systematically assess and improve sustainability practices within global supply chains, with a focus on ecological and social aspects. The results of the supplier assessments are shared among member companies in compliance with all restrictions stipulated by competition law.

Conducting our own risk-based audits

In addition to the TfS audits, we also conduct our own annual CR audits on select suppliers based on the potential risk they pose. To do so, we assign our vendors a risk category based on their country risk, product category and sales. We generally assign higher risk categories to suppliers from non-OECD countries. Regardless of their OECD status, we also audit vendors who show evidence of non-compliance with our requirements.

Any deviations from the Merck KGaA, Darmstadt, Germany Responsible Sourcing Principles or from national statutory requirements identified during an audit are classified as critical, major or minor. We provide suppliers with a report detailing the audit results, and the audit team additionally sets a timeline for follow-up audits.

When an audit reveals non-conformances, we require the vendor to present a corrective action plan that describes the steps needed to address these issues. Regarding defects classified as critical or major, we also check whether the corresponding corrective action has been taken. If the problems are not sufficiently rectified, we consider terminating the business relationship.

FAST FACT

DEFECT CLASSIFICATION

Critical defects: Any defect rated as critical must be rectified or mitigated as soon as possible. The supplier must submit a corrective action plan to Merck KGaA, Darmstadt, Germany within one week of receiving the audit report.

Major defects: For major defects, the supplier must respond and submit a corrective action plan within one month of receiving the audit report.

Minor defects: Minor defects do not require a formal corrective action plan, nor do we monitor implementation of the corresponding corrective actions.

Giving preference to local suppliers for certain products

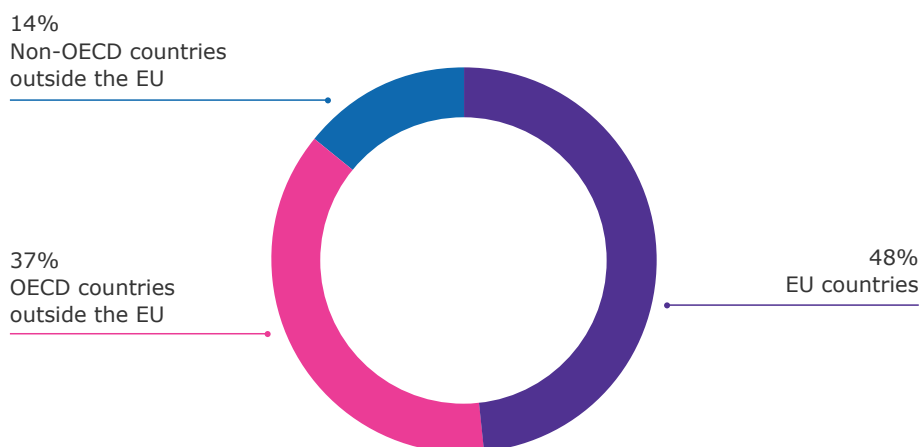
We have no internal guidelines stipulating that preference be given to local suppliers in allocating contracts. We generally procure our goods and services globally, depending on availability and price. For instance, the availability of production technology across production sites plays a role and means that not all products are equally available in each country.

However, in some cases local vendors do have an advantage. Products bought locally may be less expensive as additional transport costs are eliminated. This is often the case with packaging materials. Country-specific regulations such as import duties and licenses also help us decide whether to source our goods locally or globally. Furthermore, in some countries statutory provisions require contracts to be awarded to regional suppliers, which especially applies in the pharmaceutical industry.

Global procurement

All goods and services purchased in 2015 totaled around € 5.2 billion, with € 6.5 billion in 2016 (including Sigma-Aldrich). Of the goods and services (including R&D services) procured in 2016, we purchased 48% from suppliers based in EU countries and 37% from vendors in OECD countries outside the EU. The share of goods and services sourced from non-OECD countries outside the EU decreased from 15% in 2015 to 14% in 2016.

Share of overall goods and services purchased



Progress

Recent audit results

In addition to TfS audits, we also conducted four risk-based CR audits in 2015 and three in 2016, in which we assessed our suppliers according to environmental and social criteria. The non-conformances identified as having an environmental impact were related to exceeding emissions limits and the disposal of waste. In terms of social aspects, in one case there was no clear evidence to prove that minimum wages had been paid. To address these findings, we worked with the relevant suppliers to define a course of action and checked whether the corresponding improvements had been made. Owing to the identified defects, we had to sever our relationships with two suppliers. Our audits found no indication of infringements of freedom of association or collective agreements, nor any form of child, forced or compulsory labor.

Supplier assessments

In conducting TfS supplier assessments in 2015 and 2016, we focused our efforts on the CR performance of key existing suppliers, identifying possible adverse impacts for 45 vendors. In 20 cases, the issues pertained to environmental impacts, in 38 to labor practices and human rights, and in 14 to impacts on local communities and society as a whole. Some suppliers had multiple issues. In 2017 we're implementing measures to address the negative impacts identi-

fied. We have not yet performed these assessments on new suppliers.

Supplier workshops on CR standards

We aim to build long-term relationships with our suppliers and endeavor to support them in adhering to our standards. In line with this ethos, in 2016 we ran a workshop for our vendors in China that covered topics such as quality requirements as well as our CR and EHS standards. Moreover, we also take part in local and regional supplier workshops organized by the TfS initiative. One such workshop was held in Brazil in 2015, while another took place in India in 2016.

Good EcoVadis rating

As a member of the TfS industry initiative, we encourage our suppliers to be assessed by the independent rating agency EcoVadis. We too have been evaluated by EcoVadis and in 2016 were awarded a gold medal for our sustainability performance. At 75 out of 100 points, we are among the top 5% of all companies rated. EcoVadis assesses suppliers from 101 countries and 150 sectors across the four categories of Environment, Labor Practices, Fair Business Practices, and Sustainable Procurement. Our holistic environmental management system and clear guidelines on human rights earned especially high marks. This excellent score also benefits our business, as customers who value corporate responsibility are increasingly inquiring after such assessments.

Mica supply chain

We utilize mica as a primary raw material in effect pigment production. These pigments are then used in automotive and industrial coatings, as well as in the cosmetics and food industries. Mica naturally occurs in many countries around the world. We mainly procure our mica from India, where it is mined in the states of Jharkhand and Bihar. Plagued by political instability and poverty, child labor is widespread in this region, so we've taken special measures to ensure compliance with our environmental and social standards.

Our principles

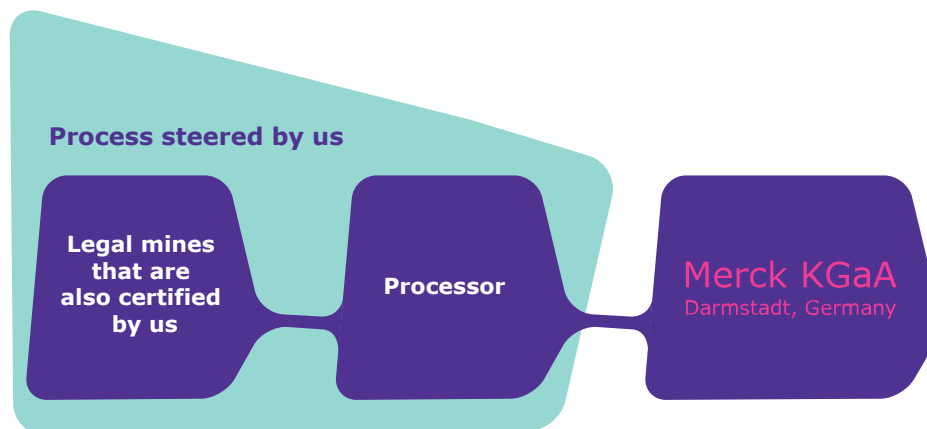
Responsibility in the mica supply chain

During a study conducted in 2008, we discovered that people in Jharkhand and Bihar were collecting mica from the tailings of abandoned mines or off the ground – sometimes with

their children. This is a clear violation of our Values and the principles of our Human Rights Charter. We do not tolerate child labor and, as a signatory to the United Nations Global Compact, are actively working to end this practice. We require all our suppliers to act accordingly and as such prohibit child labor in our contracts.

We have made a conscious decision to maintain our business relationships in the north of India and are taking on responsibility for this region by safeguarding jobs there. To ensure that the mica we procure has been mined without the use of child labor, we have completely overhauled our supply chain, only sourcing this raw material from regulated mines. This formal work environment is the only way to ensure compliance with our standards, as we cannot rule out the use of child labor for mica collected in publicly accessible areas.

Governance of the mica supply chain



We maintain direct contact both with the mine operators and the mica processing plants, which is why we have set up an office in Jharkhand. Through this proximity to our business partners, we can better educate them on our social and environmental standards as well as monitor adherence to them. Local mine owners and processing plants help us keep the mica supply chain free of child labor.

Conducting audits

To ensure that all mines and processing plants comply with our requirements regarding environmental stewardship, safety and labor standards, we monitor the practices of our business partners. In addition to comprehensive audits announced in advance, surprise checks also take place. Once a month, for instance, the local organization IGEP performs unannounced investigations into the working standards in the mines, monitoring work safety and ensuring compliance

with the ban on child labor. Moreover, the international organization Environmental Resources Management (ERM) performs annual audits that review working conditions, as well as environmental, health and safety standards. Audit reports are compiled to document any identified issues and specify corrective action. Our employees in Jharkhand then make sure that the issues have been resolved.

Tracking system to guarantee certified origin

Using a tracking system, we ensure that the mica supplied to us does not come from unregulated sources, but instead exclusively from legally operated mines that have undergone our certification process. All mine owners have a logbook in which they record the daily amount of mica produced in their mines. These records provide the basis for the license fees that they pay to the government. Were they to use mica from an unregulated source, they would also have to pay license fees for the additional amounts. Such a practice would be uneconomical, as it would cost more than the mica from their own mine. Every month, we crosscheck the amounts of mica recorded in the logbooks and delivered to processing units.

Community outreach in the mica supply chain

The states of Jharkhand and Bihar are among the most impoverished regions in India. In partnership with IGEP, we are working to improve the living conditions of the families in the mica mining regions. According to a 2016 study by the international organizations Terre des Hommes and Stichting Onderzoek Multinationale Ondernemingen, the literacy rate and the number of children who go to school there are far below the national average. In an effort to remedy this situation, we are running three schools in Jharkhand with adjoining nursery schools, as well as two vocational training centers for tailoring and carpentry. More than 500 children and young people are now enrolled at these institutions. At a fourth school opened by one of our mica suppliers in 2014, we also provide scholarships for 150 children, with plans to increase this number to 200 in 2017.

In addition to our education efforts, we are also committed to improving access to healthcare. To this end, in 2010 we established a health center operated by IGEP to serve the region's 20,000 residents. The facility has two doctors and a nurse, who also provide health services at schools. Previously there was no healthcare of any kind in this region.

Finding new mica sources in other countries

We have found additional sources of mica outside of India that meet our stringent quality, social and environmental standards. Now, for example, part of our mica volume is supplied by companies in Brazil, and we also have access to a certified source in the United States. In this way, we are ensuring the availability of this raw material over the long term and avoiding potential supply bottlenecks. Furthermore, to provide an alternative to pigments based on natural mica, we also manufacture effect pigments based on synthetic substrates.

Progress

Business relationship with a supplier ended

The international organization Environmental Resources Management (ERM) conducted six audits in early 2016. At the time of the audit, 90% of the necessary corrective measures specified in previous audits had already been taken or were still being implemented. The defects identified were primarily related to occupational safety precautions and gaps in the implementation of management systems. However, we terminated our business relations with one of our suppliers because they failed to carry out the required corrective action in a satisfactory manner.

In 2015 and 2016, IGEP performed monthly unannounced inspections of our mica suppliers. These efforts revealed improvements in the management processes of our vendors, such as occupational safety and regular updating of important documentation. Our suppliers also provided the requested training courses for their employees. Overall, no relevant deviations from our standards were noted.

Stakeholder dialogue on the mica supply chain

We keep interested customers and other stakeholders regularly informed on our mica sourcing activities. The employees in our Jharkhand office are in contact with our project partners and other advocacy groups, as well as local and national authorities. In February 2016, we attended the Mica Summit in Delhi, hosted by the Natural Resources Stewardship Circle (NRSC). As a partner of this initiative, we also helped to organize the event. Since this summit, we have become involved in the Responsible Mica Initiative, also established by the NRSC, which aims to improve the traceability of mica in the supply chain and sustain the natural environments of the communities living in mica mining regions.