

GLOBAL MICA MINING

AND THE IMPACT ON CHILDREN'S RIGHTS
EXECUTIVE SUMMARY



SOMO

Stichting Onderzoek Multinationale Ondernemingen
Centre for Research on Multinational Corporations

terre des hommes 
stops child exploitation

COLOPHON

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The Centre for Research on
Multinational Corporations (SOMO)
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working on social, ecological and
economic issues related to sustainable
development. Since 1973, the
organisation investigates multinational
corporations and the consequences
of their activities for people and
the environment around the world.

Terre des Hommes Netherlands
prevents child exploitation, removes
children from exploitative situations
and ensures children can develop in
a safe environment. Terre des Hommes
works towards a world where all
children have a decent life and can
grow up to be independent adults.
A world in which children are no
longer exploited. Terre des Hommes
will continue its work until this
is accomplished.



Children are suffering in the depths of illegal mica mines in India. Research in 2016 uncovered the death of seven children in a period of just two months. Abrasions, broken bones and lung disease are part of the daily existence of child mica miners.

The first mica investigations of SOMO and Terre des Hommes in 2015 estimated that up to 22,000 children were involved in mica mining in the Indian states of Jharkhand and Bihar. This was a clear indication that industries and companies using mica sourced from India are directly contributing to the worst forms of child labour.

Many companies source their mica from India, due to the vast amount of high-quality mica available in the country. However, India is not the only country where mica is mined, nor the only one where children work in mica mines.

Mica is used to make products like cosmetics and paints shimmer. But its other extraordinary qualities - including perfect cleavage, flexibility, elasticity, chemical inertness, infusibility, low thermal and electrical conductivity, and high dielectric strength - explain the wide use of the mineral across many sectors. Mica is particularly essential for the electronics industry.

In the context of the Responsible Mica Initiative and dialogues between Terre des Hommes and companies across diverse industries, questions were raised about the risks of child labour and other human rights violations in mica extraction. These questions referred to states beyond Jharkhand and Bihar in India, but also to mica mining outside the country. The outcome was

this global scoping study on mica mining and the possible impacts on children's rights, which aims to address these queries.

RESEARCH OBJECTIVES AND METHODOLOGY

The main objectives of this study are to map mica production globally, and to identify direct or indirect links to child labour or any other relevant children's rights violations.

The study looks at both supply and demand in the global mica market. Since demand drives production, the research identifies the industries - including the electronics and automotive sectors - that are the most significant users of mica. The report also tries to examine the status of risk-based due diligence processes for mica among different industries. Labour conditions, as well as production, export and import statistics around mica mining in the fifteen largest non-western and five largest western mica-producing countries are investigated.

THE RESEARCH FINDINGS

BASIC FACTS

Once mined, crude mica becomes either sheet mica or scrap mica. Sheet mica is the basis for all sheet mica products, as well as built-up mica and fabricated mica, which are all used mainly by the electronics industry. Scrap mica is the basis of mica flakes, mica powder and mica paper.

Scrap mica is used mainly by the paints and coatings, construction and cosmetics industries. The electronics industry also uses mica powder as filler and mica flakes for mica paper, mica tape, mica tubes and other flexible mica products. In these last products, mica is combined with binding products such as silicone and used for insulation in electronics and electrical products.

THE GLOBAL MINING MARKET

The market consists of two types of mica: natural mica and synthetic mica. According to a commercial market analysis, natural mica accounts for 90 per cent of the total mica market and the remaining 10 per cent is synthetic mica. The market share for synthetic mica is not expected to grow by more than two per cent over the coming ten years, which means that natural mica will not be replaced by synthetic mica in any significant or market-changing way. Currently, almost all synthetic mica production is for the cosmetics industry, and a smaller portion is used for pearlescent pigments in paints. The total market for natural mica is expected to continue to grow due to increasing demand by the main end-user industries.

INDUSTRIES DRIVING THE DEMAND FOR MICA

In terms of value, the electronics industry was the biggest purchaser of mica in 2015 (26 per cent), followed by paints and coatings (24 per cent), construction (20 per cent) and cosmetics (18 per cent).

This report shows that the electronics industry uses far more mica than was previously understood, and that the awareness of where mica is found in electronics is very low, even among industry players and their supply chain experts. In this report, the electronics industry is defined in the broadest sense and includes the production of

electronic products (e.g. consumer electronics) as well as electrical products and electronics for other industries.

Any electronic device – including for example computers, printers, televisions, stereos, digital clocks, remote controllers, gaming devices, and microwave ovens – has components that have been identified in this research as containing some form of mica. Typical electronics components that may contain mica include capacitors, resistors and transistors, all of which can be mounted on printed circuit boards (PCBs). Other widely-used electronics components identified as possibly containing mica include semiconductor systems, various high-voltage and lithium batteries, sensors, displays, LEDs, adaptors, card sockets, DRAM, encoders, keypads, power modules, SSDs, and wires, cables and computer housing.

It was also revealed that the automotive industry uses significantly more mica than was previously understood, and that mica is not only to be found in car paints and coatings. Mica is used in cars for components and parts that cross many different automotive systems and processes – electrical, electronic and mechanical – and also functions as a lubricant and filler. Given the number of car parts that can contain mica (one company identified 15,000 possibilities), the total use of mica in one car is substantial. Given that 88 million new cars were sold in 2016 alone, the overall use of mica by the automotive sector is enormous.

MAIN RISKS ATTACHED TO MICA MINING

Sheet mining is a labour-intensive process, and is predominantly carried out by the very poor and vulnerable in low-wage countries. Miners must travel deep down into narrow mining shafts, and the work is arduous and dangerous. A significant part of the work is

done by hand, using hammers and pry bars. Sheet miners are paid less than a living wage, are unprotected, and are easily exploited. They often work in remote areas where health and education is not available, and their children may also work to contribute to the family wage. This research concludes that non-western countries with substantial sheet mica production are high-risk countries when it comes to possible negative impacts on children's rights.

When scrap mica is recovered as by-product of sheet mining – which is the case in India and likely in all other countries with a substantial amount of sheet mica production – the above-mentioned risks for sheet mining must also be taken into account. In these countries, the mining of sheet mica and the mining of scrap mica are interdependent. Companies that solely use ground mica are therefore not safeguarded from child labour in their supply chains.

The red flag countries in the context of sheet mining and scrap mica as a by-product of sheet mining are Madagascar, India, China, Brazil and Sri Lanka. The most important end-markets for sheet mica include the electronics and automotive industries.

Other important red flags appear when analysing the discrepancies between production and trade figures for mica, including export and import statistics. Mica export figures that exceed official mica production figures provide a strong indication of illegal mining. Although legal mines do not necessarily guarantee good or fair working conditions and a living wage, they are at any rate subject to inspections, regulations and certifications. If mining is illegal, the risks related to working conditions, health and safety, pollution, abuse (including sexual abuse), security, exploitation and displacement are all likely to increase, as are the negative impacts on children's rights and the risks of child labour. Most of the mica mines in India are illegal. Other countries suspected of operating illegal mica mines include Madagascar, Malaysia, Pakistan, Sri Lanka and South Africa.

The research concludes that Madagascar has become increasingly important as an exporter of mica. The country is the fourth-largest mica exporter worldwide,

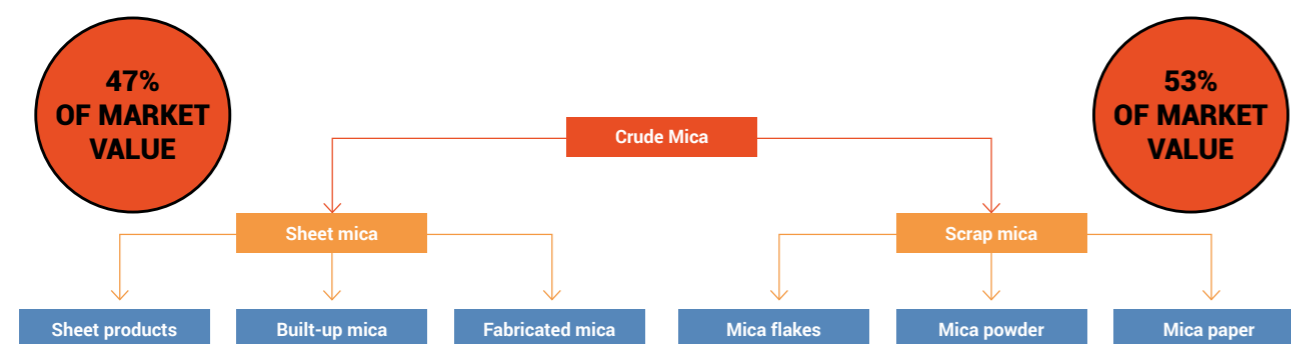
and has been the largest global exporter of sheet mica since 2015. Madagascar's state is weak, the political context is fragile, and violence and corruption are commonplace. Weak governments with no oversight or authority over illegal mica mines increase the risk that children's rights will be violated.

INDICATORS FOR HIGH-RISK COUNTRIES

In total, five indicators (or 'risk categories') were used to classify countries by their risk levels related to children's rights violations within the context of mica mining. The presence of sheet mica mining and the existence of illegal mining are two of the five indicators used to assess risks to children. Two other indicators are reports of child labour and the 'suspected' use of child labour in mica mining. Child labour is suspected in countries when there is evidence of other child labour in mining or mining-related activities in the country, regardless of what is being mined. For example, gold and mica are found in the same region in Peru, and the use of child labour for gold mining in that country is widely reported. The same can be said about child labour in Brazilian talc mines, which are in the same region as the country's mica deposits. In Pakistan, it is reported that children produce bricks and mine coal, salt and gemstones. Children also work in the gem mines in Sri Lanka, while child labour in Chinese gold mines is a documented problem.

The countries that have a reported use of child labour in mica mining are India and Madagascar. In addition to Jharkhand and Bihar, children are also reportedly working in mica mines in Rajasthan and possibly also in Andhra Pradesh (as illegal sheet mica mining also takes place there). This however needs further investigation.

The fifth indicator for high-risk countries is having high levels of mica imports from countries where children's rights are negatively affected in the mining process, in particular Madagascar and India. These importing countries are 'lynchpins' between mica produced with child labour and the global market. The lynchpin countries identified in this report are China, South Korea, Taiwan and Russia. Companies sourcing mica, or products containing mica, from these countries risk using mica mined by children in their supply chains.



Source: Gunpatroy Pvt. Ltd,¹ adapted by SOMO.

¹ Website Gunpatroy Pvt. Ltd, About mica, http://www.grmica.com/About_Mica.php#aa, (December 2017).

The research shows that India, Madagascar, China, Sri Lanka, Pakistan and Brazil are the countries most at risk of violating children's rights in the context of mica mining, scoring on at least two and sometimes three indicators.

Moderate-risk countries (scoring positive on one indicator) include South Africa and Malaysia for being suspected of illegal mica mining, and South Korea, Taiwan and Russia for being lynchpin countries. Iran, Peru and Sudan were included in this research as mica-producing countries; however, current export levels in these countries are very low or non-existent. It is possible that these countries may expand mica mining in the future, and in that case should be investigated as they are potential high-risk countries due to the presence of child labour in mining activities.

RECOMMENDATIONS FOR COMPANIES

This report shows that the electronics and automobile industries use significant amounts of both sheet and scrap mica, far more than previously understood and in many different components. Other industries that use substantial amounts of mica are the paints and coatings, construction, cosmetics, plastics and ink, oil well drilling and rubber industries.

This report concludes that companies in these industries are at high risk of being involved in the worst forms of child labour in their supply chains related to mica mining. These companies should not tolerate, profit from, contribute to, assist with or facilitate the violation of children's rights in the course of doing business. Moreover, they should commit to eradicating

the worst forms of child labour in mica mining from their supply chains, both upstream and downstream.

A risk-based due diligence approach, according to the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, implies that the efforts of companies to (i) identify, (ii) prevent or mitigate, and (iii) account for actual and potential adverse impacts should be proportional to the risks and severity of the (potential) impacts. In the case of mica, the risks of contributing to the worst forms of child labour are high, and the impacts of child labour are severe and irremediable.

To date, the due diligence efforts in the electronics and automotive sectors are very recent and are still in the exploratory stage. In general, companies have not yet decided whether or not it is worthwhile to start a due diligence trajectory specifically for mica. Some front runners in these sectors have started initial sensing research on the application of mica in their products. The countries of origin of the mica in their products have so far not been identified, and it can therefore be concluded that a risk assessment has not yet taken place. It is recommended that the companies in the above-mentioned sectors scale up their due diligence efforts concerning mica in their supply chains, regardless of the volumes used. The leading standard in this respect is the OECD guide *“Practical actions for companies to identify and address the worst forms of child labour in mineral supply chains”* (2017). Companies should first and foremost identify the countries of origin of the mica they are using for their products.

Companies should refrain from the tendency of risk avoidance. They should choose to use their leverage, rather than simply leaving a high-risk situation, opting out by using synthetic mica, or circumventing risk countries. When companies believe that they have little leverage because they are not sourcing directly or because the application of mica is performed several tiers away, it is recommended that they engage in strategic multi-stakeholder partnerships with civil society organisations working to end child labour in the global value chain of mica. It is also recommended that companies engage in social empowerment programmes that address the root causes of child labour.

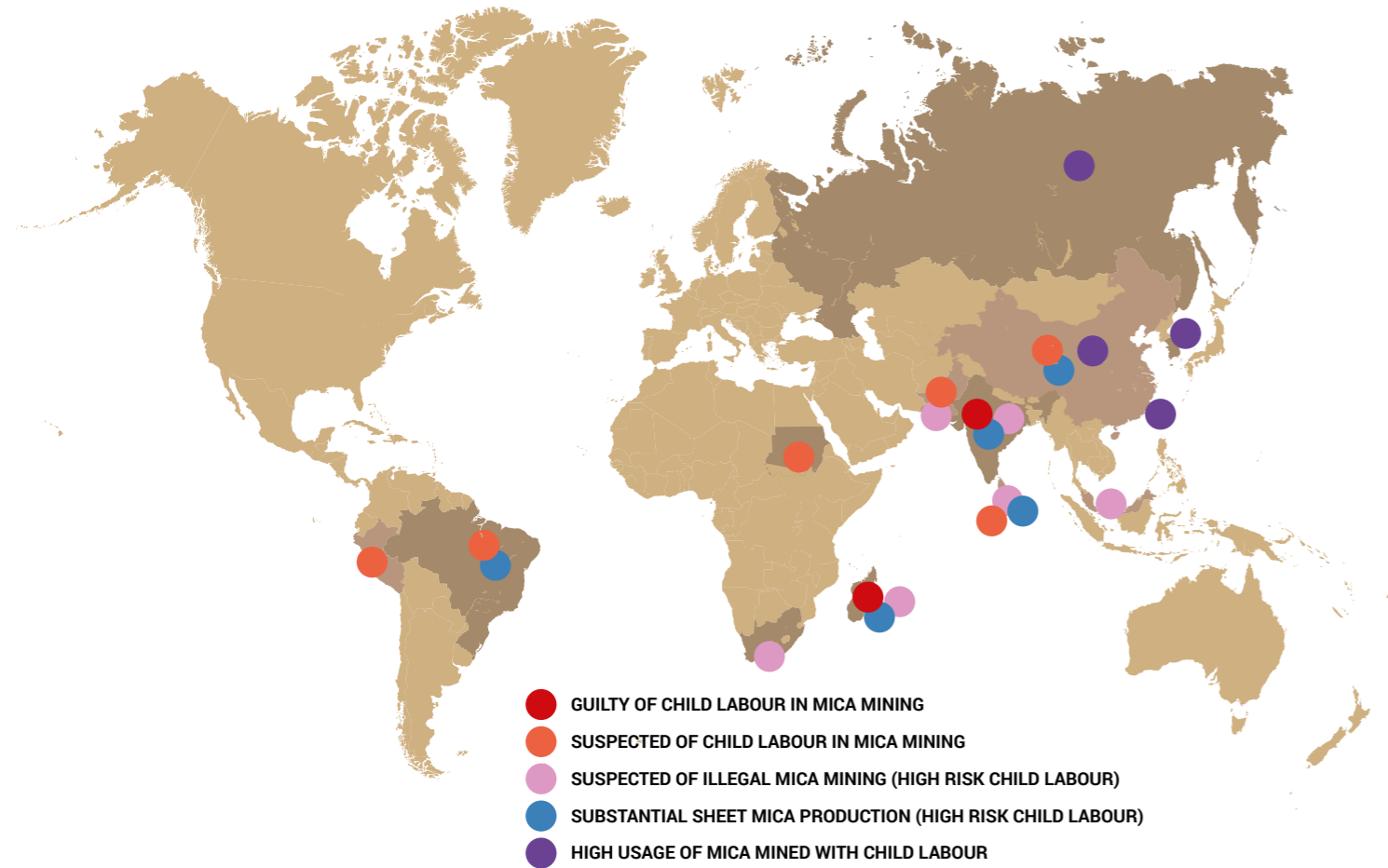
RECOMMENDATIONS FOR NGOS

NGO strategies to make end-users accountable for contributing to the worst forms of child labour when using mica in their products were initially focused on cosmetics companies and the pearlescent pigment producers supplying the cosmetics industry. This research shows that it is equally important to focus on other sectors. The development of strategies towards the electronics and automotive sectors, which make massive use of this essential mineral in their products, is also recommended. These sectors are also the main buyers of sheet mica, which carries high risks in relation to human rights impacts. Other major end markets that should be targeted include the paints and coatings, construction, plastics and ink, oil well drilling and rubber industries.

It is also recommended that NGOs broaden their targets for the inclusion of countries in responsible mica sourcing initiatives. More research needs to be done on the countries classified as a high-risk in relation to children's rights violations. The priorities include Madagascar, China, Brazil and Sri Lanka, followed by Pakistan, South Africa and Malaysia.

An extensive investigation should be carried out in order to assess political volatility, corruption, conflict and violence in Madagascar, and to ascertain if any mica sourced there is traded illegally to finance conflict and violence. Should this be the case, NGOs should initiate advocacy efforts in order to have mica identified as a conflict mineral.

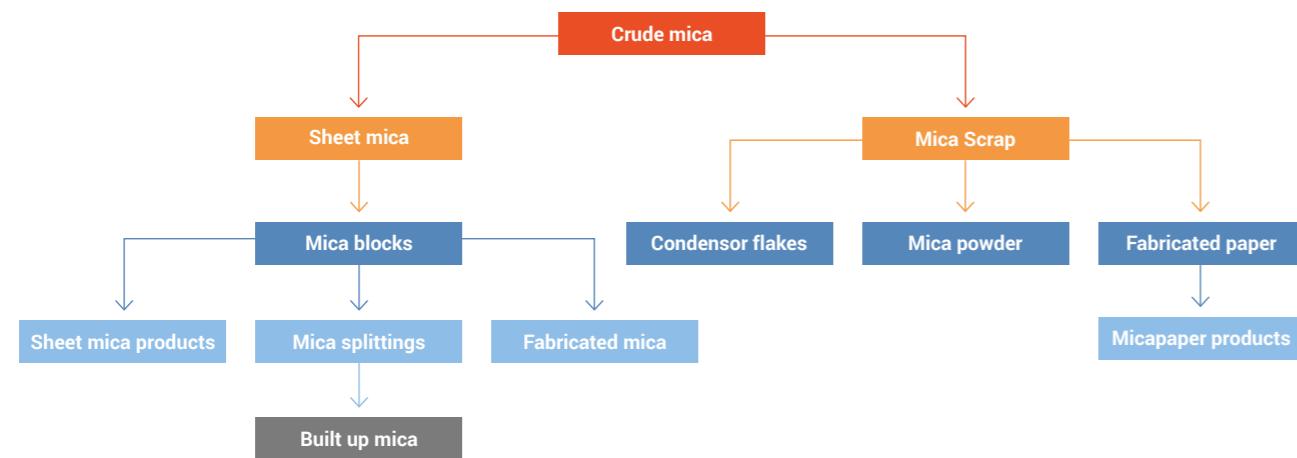
MICA PRODUCING COUNTRIES CLASSIFIED BY RISK



GLOSSARY

There are many different terms used to describe mica. Geologists, companies, trade experts and market analysts use different definitions to suit their specific needs. For clarity, please find definitions below. Note that this report refers to scrap mica and sheet mica, which are both extracted from what is termed crude mica.

THE FLOWCHART SHOWS THE MOST IMPORTANT TERMS EXPLAINED IN THE GLOSSARY.



- Built-up mica** A laminate product made from mica blocks or splittings that are layered with other products and glued together. Also called micanite products.
- Crude mica** Ordinary mica crystals as they come out of a mine, in the form of rough 'books' or lumps of irregular shape, size and thickness. Also called raw mica.
- Fabricated mica** Pieces of sheet mica that are cut and punched according to required specifications with a simple machine.
- Ground mica** A collective term for mica flakes and mica powder.
- Mica flakes** The result when scrap mica is processed into flakes by crushing. Mica flakes are sold in different sizes, indicated in meshes.
- Mica paper** The result when scrap mica is pulped after crushing with various binders and pressed into paper-like sheets.
- Mica powder** The result when scrap mica is processed into powder by grinding. Size differences of the mica powder are connected to the grinding method: whether dry ground (APS 1.2 mm to 150 µm), wet ground (APS 90 to 45 µm) or micronised (APS <53 µm).
- Mica splittings** Mica splittings consist of sheets split from mica blocks. The combined thickness of the sheets does not exceed 0.30 mm. They are chiefly used in the manufacture of built-up mica products.
- Natural mica** A silicate mineral that occurs in igneous, sedimentary and metamorphic rocks. Although there are 37 different types of natural mica, only muscovite and phlogopite have any real commercial value.
- Scrap mica** Scrap mica is a by-product of the mining, trimming and fabricating of sheet mica. It can also be recovered as a by-product or co-product of feldspar, quartz and kaolin beneficiations.
- Sheet mica** The larger mica crystals that are characterised by highly perfect cleavage, so that they readily separate into very thin and more or less elastic sheets. Sheet mica is cut by hand from mica blocks or crude mica.
- Synthetic mica** This mica is made artificially. The result is fluorine-containing mica with characteristics of muscovite or phlogopite.

Figure 1: Flowchart of mica production Source: Gunpatroy Pvt. Ltd, adapted by SOMO.

