

EMAS 2022



environmental report 2022

Arctic Paper S.A.

Arctic Paper S.A. is one of the leading European manufacturers of bulky book paper and graphic fine paper. The Group produces high quality coated, uncoated woodfree and uncoated wood-containing papers. The Group's product portfolio consists of the brands Amber, Arctic, G and Munken. Production takes place in Poland and Sweden.

The total annual production capacity of the Group's three paper mills is abt. 630 000 metric tonnes. The Group currently employs about 1 200 people across Europe and we manage 14 sales organisations across Europe. Our head office is situated in Poznań (Poland) with a branch in Gothenburg (Sweden).

The Arctic Paper Group has been listed on the Warsaw Stock Exchange since October 2009 and since December 2012 on NASDAQ OMX in Stockholm.

Arctic Paper in Europe



- – sales offices
- – papermill
- – head office

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Arctic Paper Munkedals AB is a part of the Arctic Paper Group, and in 2022 our turnover was 2,1 billion SEK. Our largest markets are Germany, Sweden, the UK, France and Benelux, and sales are channelled through the Group's own sales offices, agents and whole- salers, or direct to publishers and printers. Arctic Paper Munkedals AB has approximately 300 employees and is situated on the west coast of Sweden by the Örekil River one of the country's finest salmon waters. The Örekil River flows into the unique Fjord Gullmarn.

Both the river and the fjord are areas of outstanding natural value. Paper manufacture started at Arctic Paper Munkedals AB in 1871, and we are now one of Europe's leading manufacturers of uncoated graphic paper. Our paper is used mainly for printed advertising, periodicals and books. Because of our sensitive location, we were forced at an early stage to adapt our production to suit the natural environment. We manufactured our own pulp until 1965, when we stopped for environmental reasons.

Our aim is to be the better environmental alternative in a market where customers through their choice of supplier can contribute to a sustainable future.

preface



We manufacture products that are ideally suited to a sustainable society, as our uncoated paper has a high content of certified renewable raw material. We are now wholeheartedly committed to staying one step ahead of public authorities' demands and to continuously improving our environmental standard.

The guiding star in our environmental work is that in every process step, primarily in our own factory but also with our suppliers, work to ensure that given resources are used optimally, whether it applies raw materials, energy, chemicals or water. Our vision is to create a completely closed water system in our production process, something that would completely eliminate emissions to water and mean a reduced energy requirement.

With the help of our environmental management system ISO 14001 and EMAS, we have systematized and streamlined environmental work to ensure continuous improvement. Through our employees' commitment and local anchoring, we have naturally integrated environmental work into the day-to-day operations. After many years of systematic work and a genuine interest, sustainability is now part of our DNA as a manufacturer.

In our EMAS report, we describe our operations, the environmental impact we cause and how we work to minimize this. In the report, we follow up on the environmental goals for the year 2022 and describe the environmental goals and action plans that have been established for the year 2023. In February 2022, we were certified according to the quality management system ISO9001. This certification will further improve the quality of our systems for quality, service and workflows.

During the year, further fish habitat improvements were carried out in the Munkedal River. Stones and blocks have once again been placed in the river after being removed

during the 17th century floating cleanings. This is to improve living conditions for Salmon and Trout in particular.

A new energy plant has been started in collaboration with the company ADVEN / Värmevärden. This collaboration enables a large and important change in the company's energy production. A secured energy supply based on the incineration of waste and biomass with an output of a maximum of 30 MW creates a stable foundation for the future.

In addition to the daily work with energy savings, in 2022, as a pilot project, we have installed a smaller solar cell installation on a roof within the utility area.

By handling all environmental related matters as a natural integrated part of all operations and openly disclose our environmental impact, we aim to strengthen our customers trust in us.

If you have any comments or questions, you are welcome to get in touch with us.



Kent Blom, VD Arctic Paper Munkedals AB

fact Arctic Paper Munkedals AB

Brands

Munken Design Range:	Munken Lynx, Munken Pure, Munken Polar, Munken Kristall Munken Pure Rough, Munken Polar Rough, Munken Lynx Rough Munken Kristall Rough
Munken Book Papers:	Munken Premium Cream, Munken Premium White Munken Print Cream, Munken Print White Amber Graphic by Arctic Paper Munkedal
Munken Kraft Papers:	Munken Kraft and Munken Kraft Highwhite

Energy

Steam (oil, LNG)	42 MW	Capacity 160 000 tonnes/year
Steam (electricity)	35 MW	Sales Export 90%, Sweden 10%
Own water turbines	4,5 MW	Employees 300

Paper machines

	Width	Grammage	Speed	Capacity
PM 5	3,22 m	60-240 g/m ²	750 m/min	75 000 tonnes/year
PM 8	3,97 m	60-150 g/m ²	800 m/min	85 000 tonnes/year

Sheet cutters

	Width	Lenght	Capacity
S1, S2, S3*, S11, S12 *) laminating machine	35 - 168 cm	42 - 188 cm	80 tonnes/year

Storage capacity:

Munkedal	4 500 ton
Uddevalla (central storage)	ca 5 000 ton (part of a company shared warehouse 20 000 m ²)

Certifications

Environmental management system ISO 14001:2015 - Qvalify cert no: 1005
 Quality management system ISO 9001:2015 Qvalify cert nr:1005
 Environmental management system EMAS 1221/2009 - S-000248
 Chain of Custody FSC® - SGS-COC-001693
 Chain of Custody PEFC™ - SGS-PEFC/COC-0634
 Cradle to cradel Certified® at Bronze level



environmental management

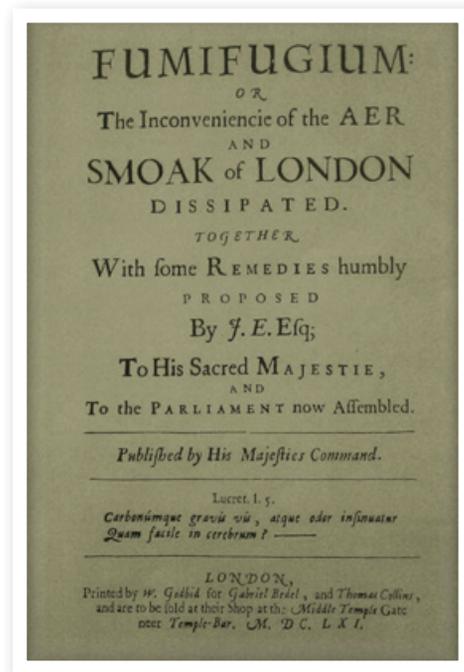
Awareness

In the modern history of mankind, the understanding of the interplay between people and the environment became marginalised at an early stage. Natural resources were regarded as being infinite and the human impact as negligible. The problems focused on were primarily those that tangibly and directly affected health. To make possible a systematic approach, methods for environmental review were developed, thus laying the foundation for additional environmental management.

In *Fumifugium*, John Evelyn published in 1661 "The Inconveniencie of the Aer and Smoak of London dissipated" which was the predecessor of the modern environmental review.

Concern

Environmental management can be defined as becoming aware in a structured way and gradually reducing one's negative impact on the environment. EMAS and ISO 14001 are the specification documents that form the backbone of our environmental management systems. They are not only certificates of legal compliance, they also promote continuous improvement by means of routines, audits, objectives and programs.



Arctic Paper a pioneer

Today, there are many incentives behind the work on reducing the negative environmental impact and with its long-term commitment and well-established systems, Arctic Paper is a group with a clear focus on reducing environmental impact, increasing efficiency and an open dialogue.

environmental policy

Arctic Paper Munkedals AB's business concept is to produce and market uncoated graphic paper of the very highest quality. At the same time we must be known for under-taking serious environmental work, and being able to offer our customers environmentally adapted products. By means of continuous improvements to our operations and management systems, we shall always deliver paper of high quality within the respective product segments, improve our energy performance as well as minimise and prevent negative environmental impact from the products and services that we buy, manufacture and sell

We shall satisfy and preferably surpass prevailing environmental legislation, prevent accidents and fulfill other environmental, energy and quality demands made on us. This means that we must:

- Make environmental, energy and quality work an integrated part of the company's long-term strategy by drawing up rules and procedures at management group level defining how the organisation is organised and business is operated.

- Consult with, inform, educate and engage our employees in environmental, energy and quality issues.
- Produce, market and sell products with the least possible environmental impact.
- Make demands of and prioritize suppliers and contractors who promote raw materials, products, transport activities and services being manufactured and delivered with the right quality and in an environment-friendly way.
- Consider the environmental and quality impact as well as energy performance at procurement, new investments, new building or renovation, and other changes in the business.
- Openly communicate our environmental work and our environmental impact to the public, customers, suppliers, authorities and other interested parties.

Kent Blom, VD Arctic Paper Munkedals AB

paper production

Pulp reception

The mill does not manufacture its own pulp; instead, it purchases it in the form of bales from external suppliers. After arrival at the mill, the pulp bales are stored in the pulp warehouse until needed.

The pulp bales are slushed in process water, which has been purified internally, and then ground in refiners so that the fibres are softened and swell. Grinding is important for the paper's strength properties. Various raw materials and chemicals such as filler chalk, adhesives and starch are added. The pulp is filtered in several steps to remove foreign particles.

Paper machine

Headbox and wire section

The function of the headbox is to distribute the diluted stock over the whole width of the wire. Dewatering and forming of the web take place in the wire section.

Press section

The web is dewatered still further in the press section. Here, the paper is given the right density and surface structure.

Drying section

The paper is dried in the drying section with the help of steam-heated cylinders.

Surface Surface Sizing

After drying, the surface on both sides of the paper is surface sized in a sizing/coating process. Surface sizing the paper gives it a smoother and stronger surface with improved printing properties. The surface is dried after the process with infra driers and a second drying section of steam-heated cylinders.

Machine calendering and tambour

The web passes through a calender, which gives it its final surface structure. The finished web is rolled onto a tambour and moved to the winding machine.

Winding machine

In the winding machine, the large reel is divided into smaller reels in line with the customer's order. The different sizes of reels are combined so that the width of the web is optimally utilised.

Finishing

Paper cutting machines

The reels proceed for further conversion. In paper cutting machines, they are cut into sheets in varying formats as requested by the customer. Some of the sheets are packaged in an automatic bale packaging machine.

Pallet pack

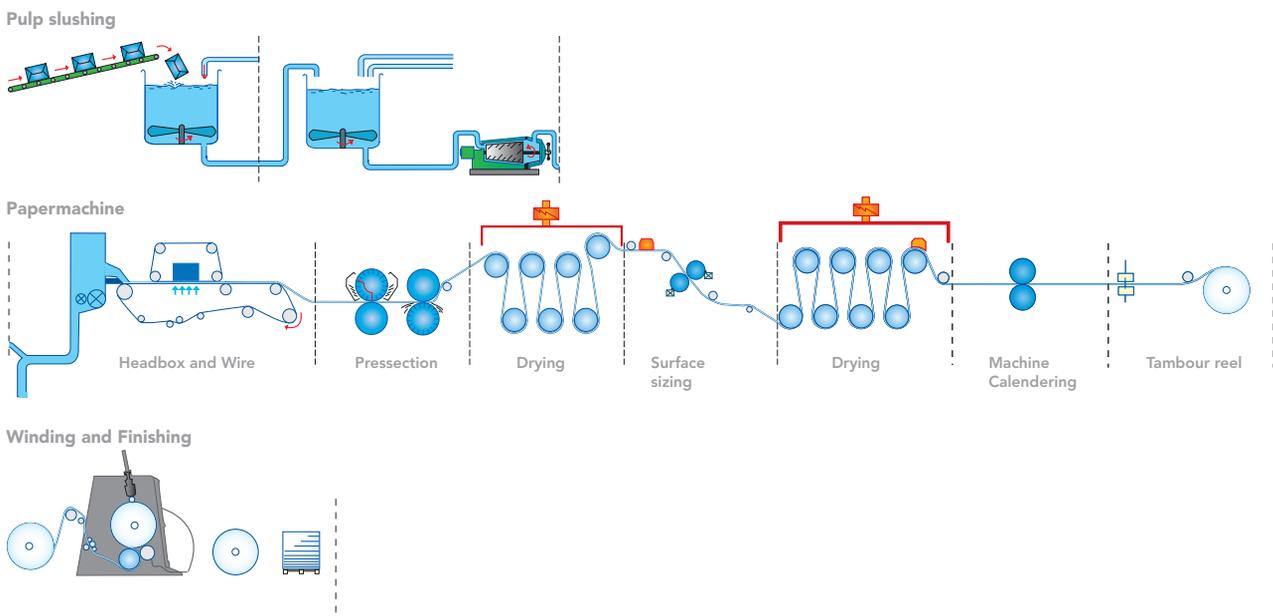
The sheet pallets are provided with a cardboard lid made of recycled paper and shrink-wrapped.

Reel pack

Reels to be delivered directly to the customer are fitted with protective packaging and labelled so that they can be identified.

Storage and shipping

The finished reels and pallets of sheets are placed in the mill's warehouse for finished goods until they are released from inventory for transportation to corporate warehouse or the customer by road, rail or sea depending on the customer's geographical location.



purification

Purification plant

The process wastewater is channelled to our final purification process. The water is purified through a combination of biological and chemical treatment.

a) The first stage is the buffer tower. This is where the decomposition of pollutants commences. Here we add nitrogen and phosphorus to provide nutrients for the bacteria in the water. Air is blown into the base of the tower, to oxygenate the water.

b) The next stage is a bio-bed, which is filled with solid plastic material and has a very large surface area – roughly equivalent to 10 football pitches (60,000 m²). Here a biofilm of bacteria and larger creatures is formed, which continues to break down pollutants in the water.

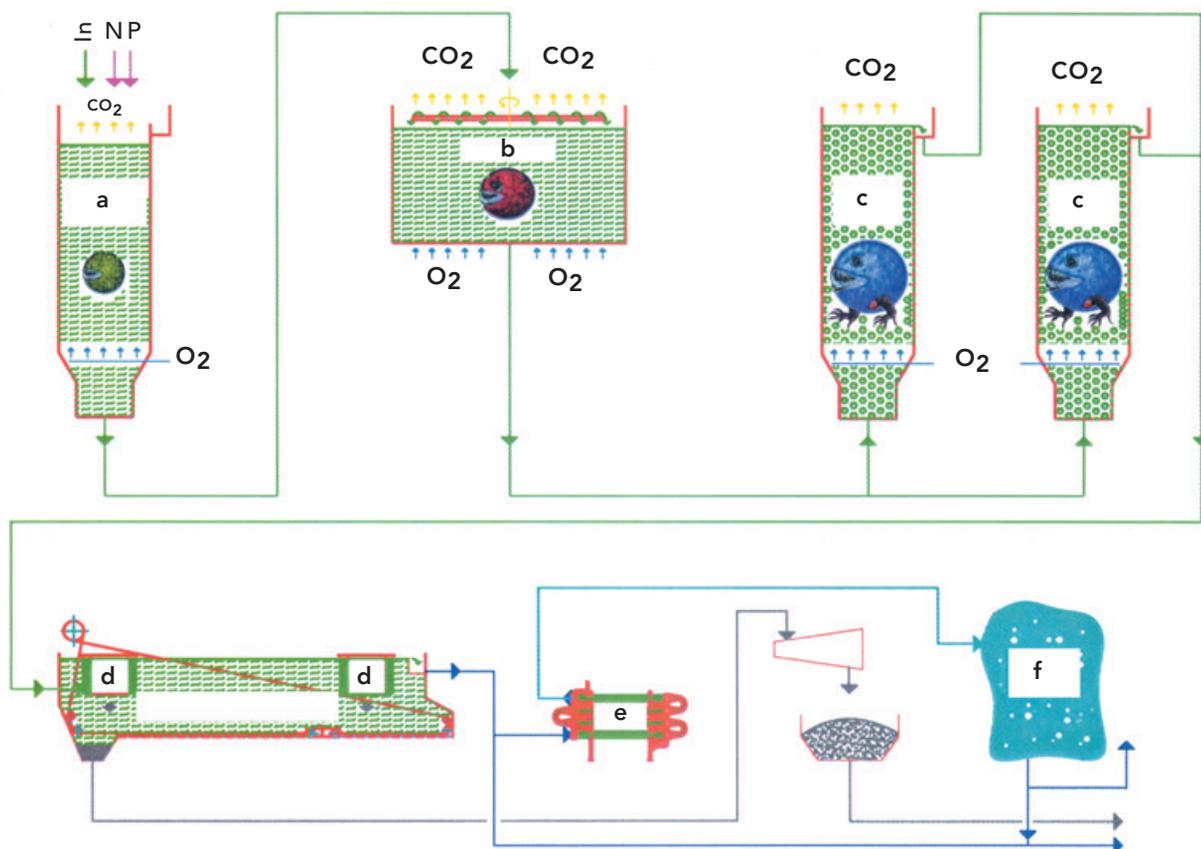
c) The water proceeds to towers with floating material, the surface of which is covered by bio-film. Air is added to make the material circulate in the towers.

The air also serves to ensure that the bacteria and the larger creatures have good access to oxygen, which is necessary for their survival and consequently for the biological decomposition of the surplus water.

d) The next stage comprises two sedimentation tanks, where flocculants are added to separate particles from the aqueous phase. The separated particles go to a centrifuge, where they are thickened, so that they can then be processed for soil improvement.

e) The treated water proceeds to the ultra-filtration plant.

f) The final, treated water from ultra-filtration goes to our external ponds, before being discharged into the Munkedal River or recirculated to the mill.



environmental data and regulations

The raw materials, chemicals and the energy needed to manufacture 1 tonne of paper in 2022 (2021) are specified below. The emissions to air and water and the amount of waste this gives rise to are also reported. Finally, we report

on how we complied with the regulations laid down by the authorities. Applicable environmental requirements are specified in the environmental report to the authorities and can be ordered from EMAS contact persons.



Compliance with permit conditions

Production level net

Max permit

200 000

Result 2022

145 310 tonnes/year

Discharges to water

Suspended solids	150	98	kg/day
COD _{Cr}	450	274	kg/day
BOD ₇	120	75	kg/day
Total Nitrogene (N)	20	12,7	kg/day
Total Phosphorus (P)	2	1,0	kg/day

Discharges to air

Sulphur	90	0	tonnes/year
NO _x	70	**	mg/MJ oil
Dust	1	**	g/kg oil

Other

Noice (night time)		45	dB(A)
Freshwater from river		4,5	l/minute

* BAT - Best available technique / EU-BREF 2015 (Unintegrated finepaper) Refers to production net slitter machine.

** no emissions over the permit reporting limit

Net slitter machine data gives a figure before the converting area waste is deducted.

biodiversity

GULLMARN

One of Swedens most studied fjords

The water in Swedens largest genuine sill fjord is divided into several layers from Baltic sea, Kattgatt, Skagerrak, Northern sea and the Atlantic.

The depth is home for Twohorn sculpin, Atlantic hookear sculpin and Northern stone crab.

The fjord Gullmarn is Swedens largest fjord. The length is almost 30 km, the width 1–4 kilometer with depths down to 125 meter. Passing the island Bornö the hill Smörkullen rises 134 meter over the sea level. A sill fjord means that it is long, deep and narrow and has a sill at the mouth.

Gullmarn was formed by a fault hollowed out by watercourses and inland ice 560 million year ago. It is the natural border between the 920 million year old red granite in the north and the 1700 million year old area of gnejs in the south.

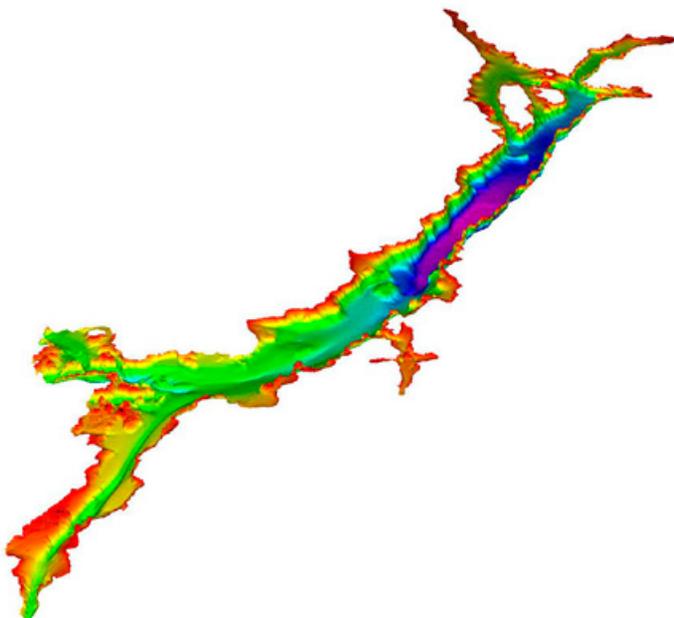


In 1830 scientists and interested parties were gathered on Kristineberg to discuss and to study the biodiversity of Gullmarn. One of these were the artist Wilhelm von Wright who painted – Fishes in Scandinavia, the zoologist Sven Lovén who is claimed to be the first to ever study the biodiversity of Gullmarn and the ornithologist and conservator Gustaf Kolthoff who published the book - Nordic Birds.

Three large ocean streams affects the marine life of Gullmarn. This means that we find water from Baltic sea, Kattegatt/Skagerrak och Northern/Atlantic sea. Due to differences in salinity (content of salt) these water finds their own depths. This stratifications of salinity complicates the water exchange.

With a sill at 40 meters in the mouth of the fjord it causes a unique biology and at the same time a greater vulnerability to pollutants. The deepest area in Gullmarn has a biology that is like that on 300-600 meters depth in the ocean outside the fjord.

In the depths it is almost complete darkness, cold (4-5 degrees celcius) with high salinity (35 per mille). Here we find creatures like the Twohorn sculpin, Atlantic hookear sculpin and Northern stone crab.



Source: Västragötalands Regionen -Västarvet -
<http://www.vgregion.se/vastarvet/bm/up/bohuskarta/detalj1.asp?ID=53>

significant environmental aspects

Gathering aspects

We have identified the most significant environmental aspects in our business. The environmental assessment is based on a holistic approach, where the entire chain from the production of materials used in our products to the shipment of our products is taken into consideration. The significant environmental aspects can then be a focus of environmental work and form the basis of improvement plans.

The significant environmental aspects are produced by drawing up a list of the various activities in the company together with a description of their environmental aspects and environmental impact. The aspects are reassessed as the business develops and the findings of new research become available.

Selecting aspects

Our environmental assessment considers the following issues:

- Does the aspect cause a known, significant environmental impact, such as environmental threats identified by the Swedish Environmental Protection Agency, or does it counteract the national environmental targets adopted by the Swedish parliament?
- Does it involve high consumption of scarce raw materials, natural assets or energy?
- Does the environmental aspect involve a chemical that is harmful to the environment?
- Could the environmental aspect cause a serious environmental accident?
- Is the size/volume/content of the environmental aspect significant in terms of the environmental impact?

Emissions to air



Using this approach,
the following significant
environmental aspects
have been identified



Transport Operations

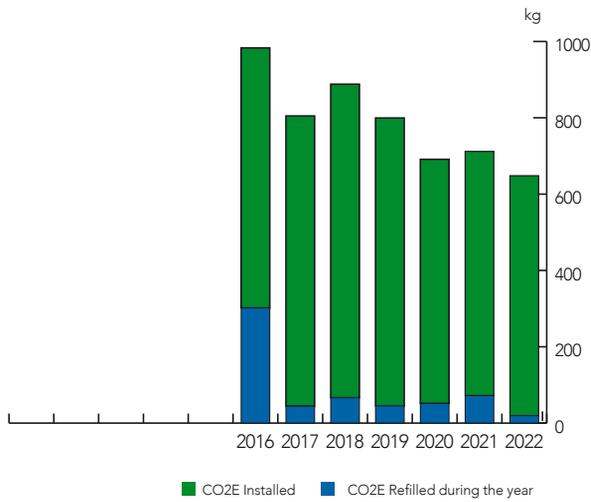


Chemical products



Energy

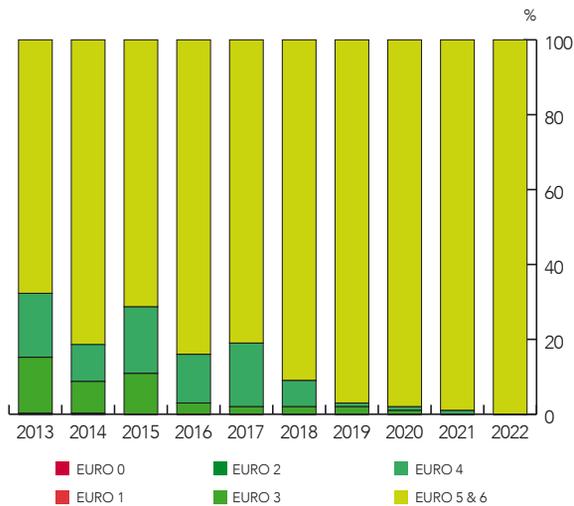
environmental impact



Coolants

At Munkedals we have used two kinds of coolants: HCFCs (hydrochlorofluorocarbons), which break down the protective ozone layer and contribute to the greenhouse effect, and HFCs (halogenated hydrofluorocarbons), which do not affect the ozone layer but do have quite a large impact on the greenhouse effect. For many years the cooling and climate units have been converted to phase out HCFCs and replace them with more environmentally friendly coolants. From year 2016 we have changed the reported value from HFC to CO₂E that now is the common report criteria.

The diagram on the left shows the amount of installed Coolants converted to CO₂ Equivalents.



Transport operations

Transport operations cause noise, emissions to air and the consumption of fossil fuels. The environmental impact of transport operations is therefore one of the considerations when we decide which transport companies to use.

Truck engines are divided into various EURO classes, in which a higher figure represents engines with lower emissions, especially of nitrogen oxides and carbon monoxide. Transport operations is based on transported tonnes.



core indicators

Annual progress

In 2022, production decreased from 152,600 tons to 145,310 tonnes. Water use decreased for the third year in a row to 3.69 liters per kilogram of paper produced. The recirculation of our process water can again be fully used after being partially disconnected during the hydro project.

The total energy consumption increased a little bit 2022 per ton of produced paper compared to previous year.

Internal use of Gasol and Heating oil have been phased out.

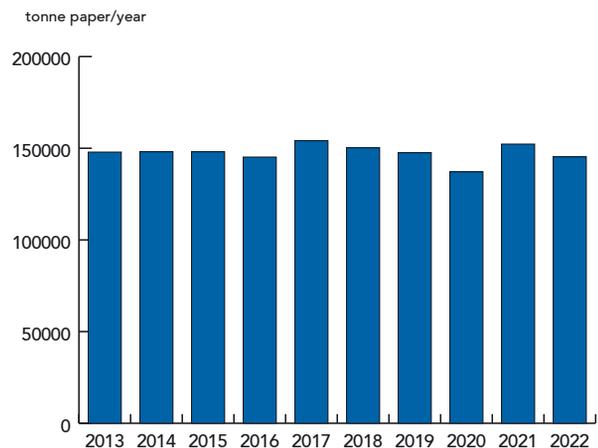
The now ongoing collaborative project with the company ADVEN to build a new solid fuel boiler, aims to secure the company's energy needs and to reduce the company's fossil carbon dioxide footprint. Production in the boiler has been gradually increased during 2022 and is now approaching full capacity.

During the year, most measured values in the category emissions to water have decreased compared to the previous year. However, the figure for oxygen suspending substances has gone in the opposite direction. The reason for this is an increased number of start/stops and an increased number of changes on our paper machines.

Net production

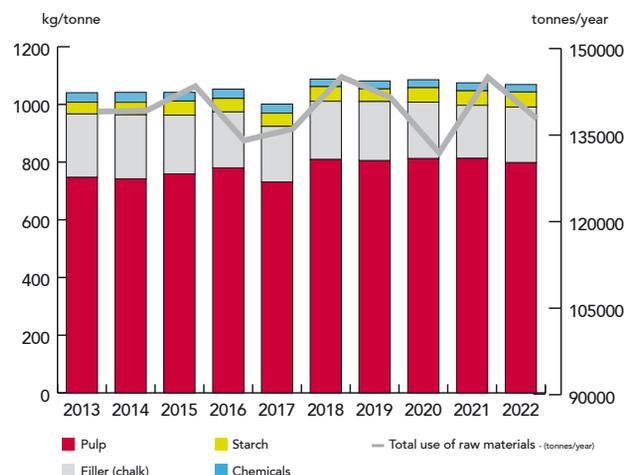
The relation to net production of paper is an important aspect when describing the progress of the company's environmental performance.

The net production shown in the trend diagram is used to calculate the efficiency of the operational activity with respect to the core indicators.



Material efficiency

The main raw materials used in paper production are pulp, pigment, starch and auxiliary chemicals. Raw materials are transported to the mill by sea, road and rail. For key figures for Raw materials, see p. 8.



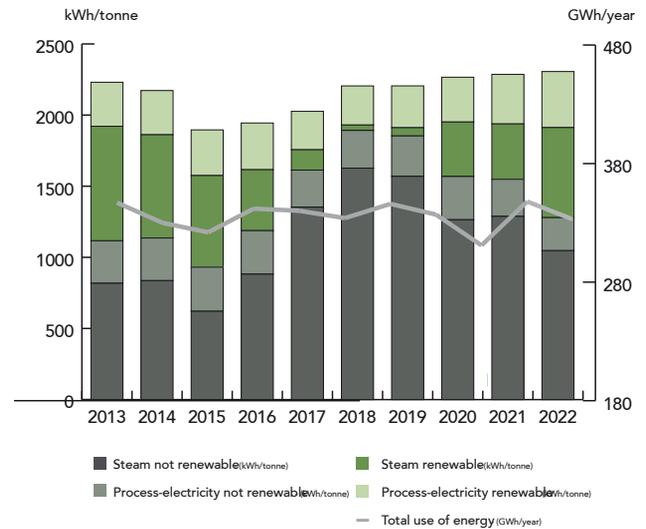
core indicators

Energy efficiency

The most energy-intensive processes in the production of paper are the production of steam and the operation of the paper machine's engines, grinders and pumps.

The steam is distributed to sealed cylinders where the paper is dried.

The diagram shows the total energy consumption and the distribution between different types of energy sources. For key figures for Energy consumption, see p. 8.

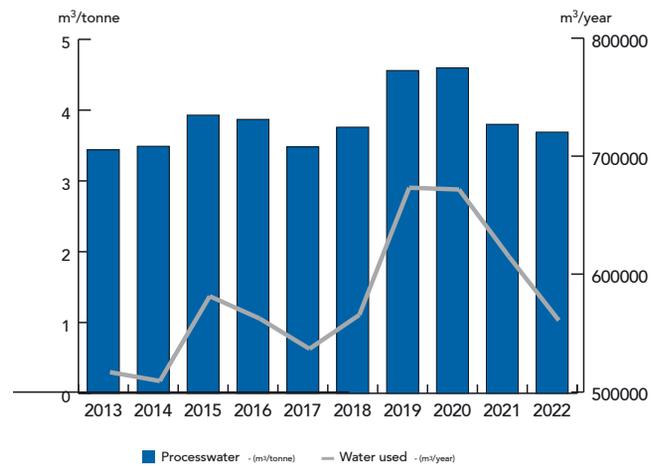


Water use

When manufacturing paper, water is used to slush the pulp into fibre stock and to transport the fibres to the paper machine's headbox. In the paper machine, the stock is dewatered when the paper is formed. Most of the water is utilised and recirculated in the mill. Water that is not recirculated goes to the mill's water purification plant.

The amount of water used is measured as the water leaving the mill after having passed through the water purification plant. The amount of water used is measured as the water leaving the mill after having passed through the water purification plant.

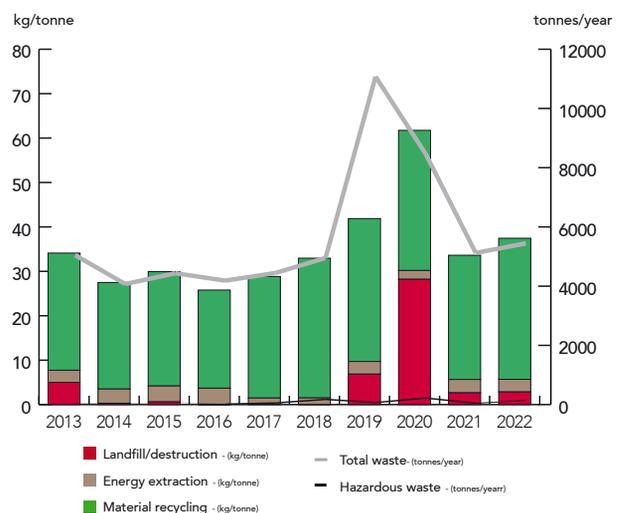
The mills water use have 2022 decreased to stay on a level similar to the years before the hydroelectric rebuilding project. The water recycle have now been opened again, after finishing the project.



Waste

The diagram shows the company's amount of waste in relation to production. Whenever possible, the waste is recycled. Waste that is not suitable for recycling is used for energy recovery or landfill/sent to a treatment plant for destruction.

Total amount of landfill decreased during the year. The reason to this is the finalization of the hydroelectric power plant rebuild. Big amounts of soil that was moved to landfill during the project. For key figures for Waste, see p. 8.



core indicators

emissions to air

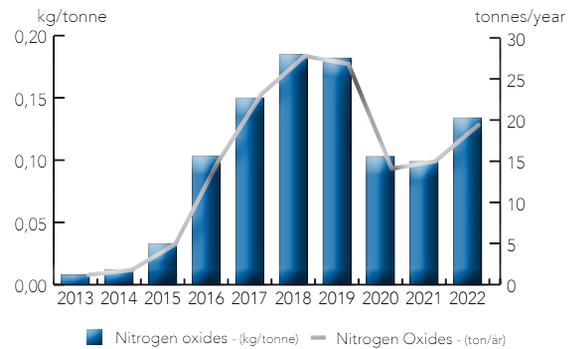
Sulphur dioxide (SO₂)

Sulphur dioxide is formed during the burning of fuel containing sulphur, e.g. oil and coal. Sulphur dioxide contributes to the acidification of land and water. During 2021 this emission was unchanged. LNG contains no sulphur.



Nitric oxides (NO_x)

An umbrella term for the nitric oxides formed during combustion and which can contribute to the acidification of land and water. This emission increased during 2022 due to start up problems at the ADVEN solid fuel power plant.

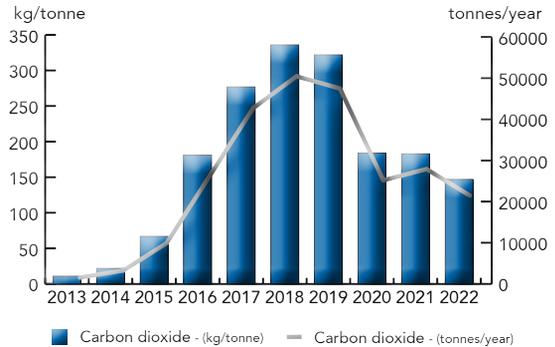


Carbon dioxide (CO₂) fossil

Carbon dioxide is formed during the complete combustion of carbon compounds in oxygen. When fossil fuels are burnt, the carbon dioxide content in the atmosphere increases because the carbon thus added to the atmosphere has been outside the natural cycle for a very long time.

The increased carbon dioxide content in the atmosphere is considered to be one cause of global warming.

The CO₂ figure in the diagram is derived from the combustion of LNG in our steam producing boiler and from the solid fuel boiler from which the purchased steam comes.

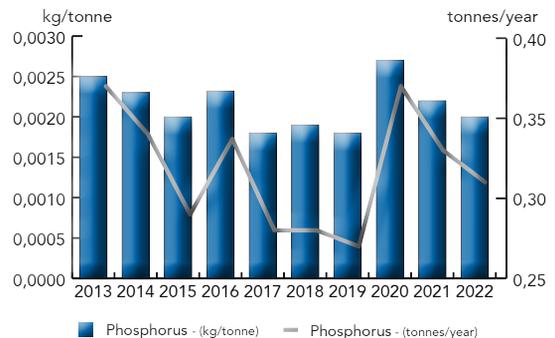


core indicators

emissions to water

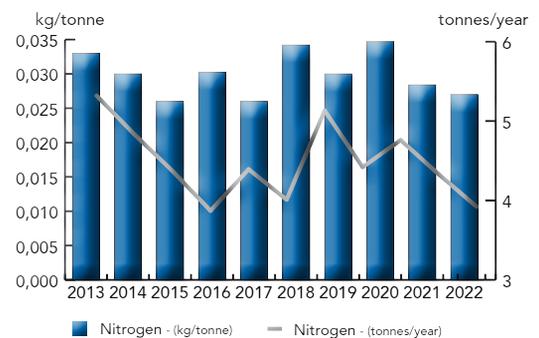
Phosphorus (P)

Phosphorus is an element. High levels of phosphorus compounds can, together with nitrogen compounds and organic substances, result in heightened organic activity in water, which, in turn, can result in watercourses becoming overgrown. This emission decreased slightly this year.



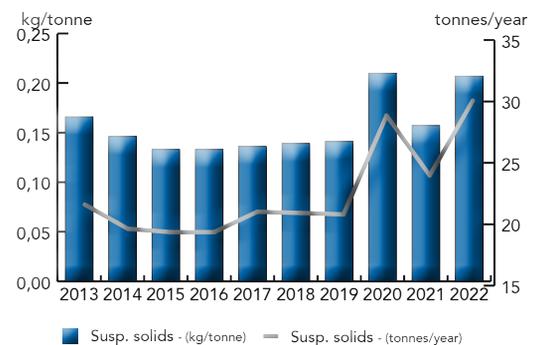
Nitrogen (N)

An element that exists in large amounts in the atmosphere. High levels of nitrogen compounds can, together with phosphorus compounds and organic substances, result in heightened organic activity in water, which, in turn, can result in watercourses becoming overgrown. The figure shows a positive decreasing trend for the third year in a row.



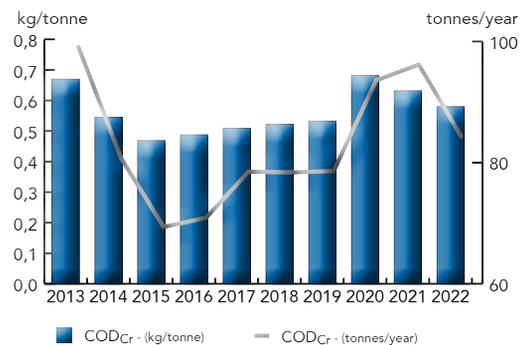
Suspended Solids (SS)

Fiber fragments and other solid substances (e.g. chalk) in waste water are called suspended solids and cause oxygen consumption and shallowing where the discharge takes place. This emission increased this year with unusually high peaks that are not usually seen in a normal year. Uneven production conditions at the end of the year may have contributed to parts of this increase.



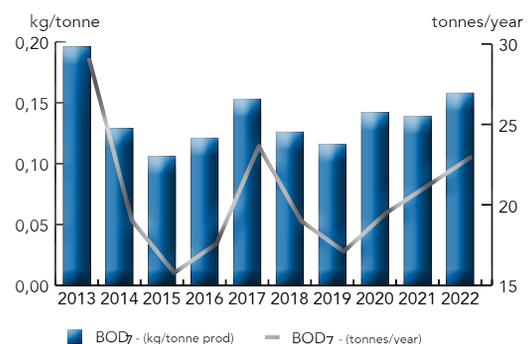
COD_{Cr}

Chemical Oxygen Demand – a measurement of the amount of organic compounds in water. It is mainly the organic content that consumes oxygen during decomposition. This emission did also decrease for the third year in a row.



BOD₇

Biological Oxygen Demand – a measurement of the amount of oxygen consumed by microorganisms during the decomposition of organic substances in water over a period of seven days.



environmental targets 2022

Overall Environmental targets	Detailed target	Action plan	Result/Status
Reduce risk for environmental accidents	Prevent risk of emissions from PM5	Rebuild a tank to an intermediate pulp mix storage.	Pipes constructed. A new pump house is built. A foundation for a pipe bridge are being laid. The project is extended due to coordination with the solid fuel boiler project
Reduce emissions to water	Create a more even raw water purification and smoother reject to the river	Installation of new purification equipment for incoming water	This measure is to be reconsidered. Exploration of new technology for a creation of more even separation. Coordinated with the ADVEN/Solid fuel project
Biodiversity	Improve opportunities for migrating fish in the Munkedals river	Investigate opportunities for habitat improvements in the Munkedal river	Managed within the hydro power project. Consultant hired. Further habitat improvements planned during the summer 2022.
Reduced freshwater use	As an annual average, 20% of the discharge water must be returned to the process	Install appropriate filters	New filters installed during 2021. This target is extended 2022-12-31. Situation 2023-11-22 is 18%. ADVEN powerplant more water than expected. This is now under investigation.
Reduce the proportion of fossil fuels	80% reduction in energy of fossil origin compared to 2017	Installation of new solid fuel boiler that replaces LNG	Permits ready, agreement ready, project started. up to expectations 2023-06-31 yet. The goal is therefore 2023-06-31
Reduced energy use	Reduce the energy use 2,5% compared with 2019	Reduce broke share, Improved runability PM, Fewer interruptions and unplanned stops.	Trend is not in line with the goal, and the goal is not achievable with the current product mix. The mix business's control and at the same time a decisive goal is reformulated to make it possible to reach adjusted to 2.40, the current level was 2.28MWh/can therefore be reinstalled.
Reduce the amount of waste	Concentrate the biosludge by drying	Investigate the possibility of using waste heat for this purpose	Technical solution discussed with ADVEN
Reduce the use of packaging	Reduce plastic use by 25%. Roll pack and packaging use by 8% in pallet pack.	Change to a thinner packaging material	Pallet packaging goal accomplished.

environmental targets 2023

Overall Environmental targets	Detailed target	Action plan	Result/Status
Reduce risk for environmental accidents	Prevent risk of emissions from PM5	Rebuild a tank to an intermediate pulp mix storage.	A foundation for a pipe bridge are being laid. The project is extended due to long delivery time on material.
Reduce emissions to water	Create a more even raw water purification and smoother reject to the river	Installation of new purification equipment for incoming water	This measure is to be reconsidered. Exploration of new technology for a creation of more even separation. Coordinated with the ADVEN/Solid fuel project. A technical solution is under development.
Biodiversity	Improve opportunities for migrating fish in the Munkedals river	Investigate opportunities for habitat improvements in the Munkedal river	Managed within the hydro power project. Consultant hired. A first stage completed September 2021. measures completed summer 2022. There are now 7 spawning grounds ready.
Reduced freshwater use	As an annual average, 20% of the discharge water must be returned to the process	Install appropriate filters	New filters installed during 2021. Current position on 30/11-22 is 18%. Some impact on the total amount of released water due to Adven releasing more water than calculated to us. Adven's impact is being investigated. The goal extended to 2022-12-31
Reduce material waste	Concentrate the biosludge by drying	Investigate the possibility of using waste heat for this purpose	Technical solution discussed with ADVEN Continued discussions with ADVEN: The goal is extended from 2022-12-31 to 2023-12-31
Reduce the use of packaging	Reduce plastic use by 25%. Roll pack and packaging use by 8% in pallet pack.	Change to a thinner packaging material	Pallet packaging line goal achieved. RB and RP remain. 20/9-22: The ream binding is the plastic removed, which is good, Rullpack remains. Current situation: The supplier will start delivering wrapping paper for RP with a reduced plastic content, from 20g to 15g. The goal is achieved.
Reduce the proportion of fossil fuels	80% reduction in	Installation of new solid fuel boiler that replaces LNG	Current situation: The Adven boiler is not in full operation due to some start-up problems that have not yet been resolved. The goal is extended from 2022-12-31 to 2023-06-30.
Reduced energy use	Reduce the energy use 2,5% compared with	Reduce broke share, Improved runability PM, Fewer interruptions and unplanned stops.	Current situation is 2.30 MWh/ton The target is thus changed back to 2.25 MWh/ton and the target is extended from 2022-12-31 to 2023-12-31.

auditor's statement

RISE is a SWEDAC accredited environmental verifier which has reviewed Arctic Paper Munkedal AB and found that the company has an EMS that meets the requirements of the EMAS regulation (no 1221/2009). RISE Certification also examined this report and found it to be accurate and sufficiently detailed to satisfy the requirements of EMAS.

Munkedal, 2023-06-08



Anders Eriksson / RISE Certifiering



VERIFIED
ENVIRONMENTAL MANAGEMENT
S-000248

How to order environmental reports

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Arctic Paper Munkedals environmental report is available in Swedish and in English, on the web and in printed matter.

Next environmental report is available in spring 2023.

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glossary

ACCREDITED COMPANY

A company that has been approved by a supervisory authority for example to conduct special analyses and checks on industrial processes.

BIOLOGICAL TREATMENT

Decomposition of pollutants in water with the aid of microorganisms.

BLEACHING

A method of increasing for example the pulp's brightness. Bleaching is undertaken using chemical compounds without elementally bound chlorine, ECF, or without any chlorine compounds, TCF.

BOD₇

Biological Oxygen Demand. The amount of oxygen required for natural decomposition of wastewater. 7 means that the natural decomposition has been going on for seven days, for the analysis. BOD is low in relation to COD if remaining substances are hard to decompose and the biological treatment is functioning well. High values involve an increased risk of a lack of oxygen in the container.

CARBON DIOXIDE, CO₂

A naturally occurring gas that is formed by biological decomposition and combustion of organic materials.

CHEMICAL PRECIPITATION

Chemical bonding of pollutants which makes it possible to separate the pollutants from the waste water through sedimentation.

CHEMICAL PULP

A joint term for SULPHATE PULP and SULPHITE PULP, which are manufactured by chemically detaching the wood's fibres from one another.

COD_{Cr}

Chemical Oxygen Demand. The amount of oxygen required for chemical decomposition of remaining pollutants in for example wastewater. Cr means that chromate has been used as oxidation agent for the analysis. High values may involve an increased risk of a lack of oxygen in the recipient.

dB(A)

Decibel A, a measure of the amount of sound measured with a filter that takes account of the human ear's sensitivity to various sound frequencies.

EMAS

Eco-Management and Audit Scheme. A voluntary EU decree and requirement document for an environmental management system. EMAS requires, in addition to the fact that ISO 14001 or equivalent is fulfilled, that an official environmental report is compiled. The environmental report is examined and approved by an accredited environmental audit company.

EUTROPHICATION

PHOSPHORUS, P, and NITROGEN, N, are elements included in nutrient salts that increase the growth of plankton in water. If the content of the nutrient salts is too high, such growth can be so strong that the oxygen is used up and a shortage of oxygen arises.

FINE PAPER

A generic term for graphic paper, writing paper and printing paper, and certain special types of paper.

FSC® CERTIFIED RAW MATERIAL

Raw material with guaranteed origin (Forest Stewardship Council) which exclude wood produced in conflict with FSC's 5 paragraphs (illegal lumbering, key biotopes, serious social conflicts, genetically modified wood or unsustainable forestry).

GUIDELINE VALUE

A guideline value is a value that, if exceeded, places an obligation on the permit holder to take action to ensure that the value can be met.

HAZARDOUS WASTE

Waste containing pollutants that are directly hazardous to the environment, such as certain chemicals, waste oils, batteries, fluorescent tubes, mercury lamps and electronic scrap.

ISO 14001

An international standard containing specific requirements for an environmental management system. A certificate remains valid for three years on the condition that there is compliance with the certification requirements and the annual audits are conducted and produce a successful result.

LIMIT

A value for discharges from industrial operations that has been set by the environmental authorities and that may not be exceeded.

MECHANICAL PULP

A joint term for pulp which is manufactured by mechanically detaching the wood's fibres from one another.

NITROGEN OXIDES, NO_x

Gas formed when the nitrogen in combustion air is oxidised at a high combustion temperature. Contributes to acidification and eutrophication.

OXYGEN-CONSUMING SUBSTANCES

Substances that consume oxygen when broken down. Measured as COD and BOD.

RECIPIENT

A receiving entity for discharges, such as the sea, a lake, a watercourse or the atmosphere.

SULPHUR DIOXIDE, SO₂

Formed by the combustion of sulphurous fuels such as gas, coal, oil and oil products. Discharges contribute to the acidification of land and lakes.

SUSPENDED SOLIDS, SS

The volume of solid matter in water that remains in a filter with a mesh of a defined size.

UNCOATED PAPER

Paper which has been coated with a thin layer of starch, in contrast to COATED PAPER which is coated with a layer consisting of elements including among others clay, chalk, starch and synthetic binding agents.



ARCTIC PAPER

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