

EMAS 2021



environmental report 2021

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. 695 000 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 2021 our turnover was slightly more than 1,6 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 wholesalers, 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.

Environmental considerations have played an important role in investments in recent years, which has led to significant environmental improvements. Our water consumption and our discharges to water are now among the very lowest in the industry. In every step of the process, mainly in our own production but also through our purchases, considerations for the use of energy, raw materials and water are implemented.

Our vision within the next few years is to create a totally closed water system in our production process, which should fully eliminate discharges to water. With the aid of our environmental management systems, which is certified in accordance with the international ISO 14001 standard and registered according to EMAS, we have made our environmental work systematic and more efficient, in a way that guarantee continuous improvement in our environmental performance. Thanks to our employees' commitment and local acceptance, we have managed to integrate environmental work into day to day operations in a natural way.

During 2021 we started the work to implement ISO9001. This project is expected to further improve our systems for Quality, Service and Work flows. Our goal to have an ISO9001 certified quality management system in place February 2022 is now achieved.

Within 2021 a fish habitat improvement project have been launched. Big rocks and stones have been put back in to the river bed in order to restore the habitat to what it was before

the 17th century's floating activities. This will improve the living conditions for migratory fish.

In 2021 the construction and building phase of a new power plant have been initiated in cooperation with the company ADVEN/Värmevärlden. This cooperation enables a big change in our company energy production. A secured energy supply based by waste and biomass incineration with an effect of max 30 MW creates a secured energy foundation for the future.

In addition to the daily work with energy savings, we will in 2021, as a pilot project, install a smaller solar cell system 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.



A handwritten signature in blue ink, which appears to read 'Kent Blom'.

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 Highway Cream, Munken Highway White
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
 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

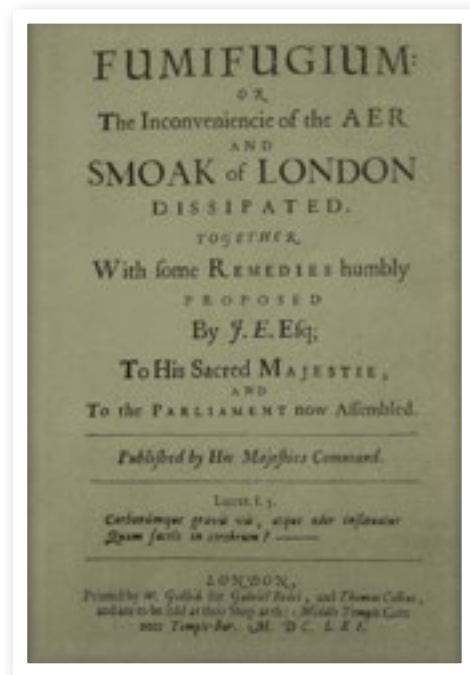
Awareness

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, we shall 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 demands made on us. This means that we must:

- Make environmental work an integrated part of the company's long-term strategy by drawing up rules and regulations at group management level defining how environmental work is organised and implemented.
- Consult with, inform, educate and engage our employees in environmental 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 in an environment-friendly way.
- Consider the environmental impact of 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 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

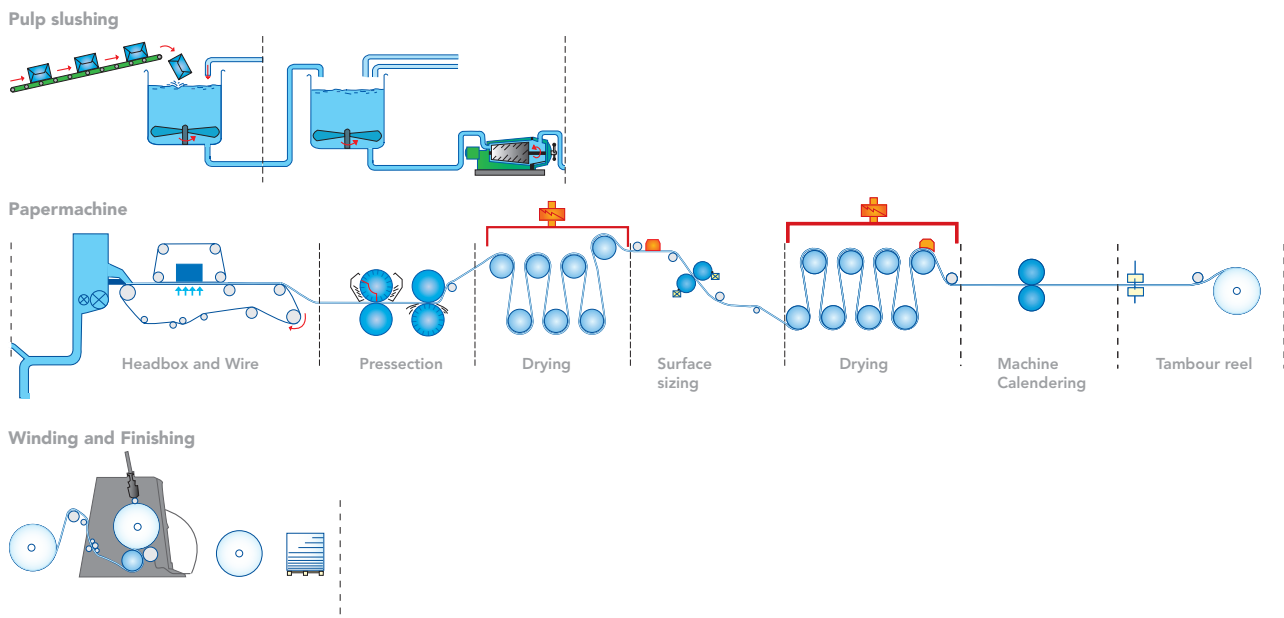
The sheet pallets are provided with a cardboard lid made of recycled paper and shrink-wrapped.

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.

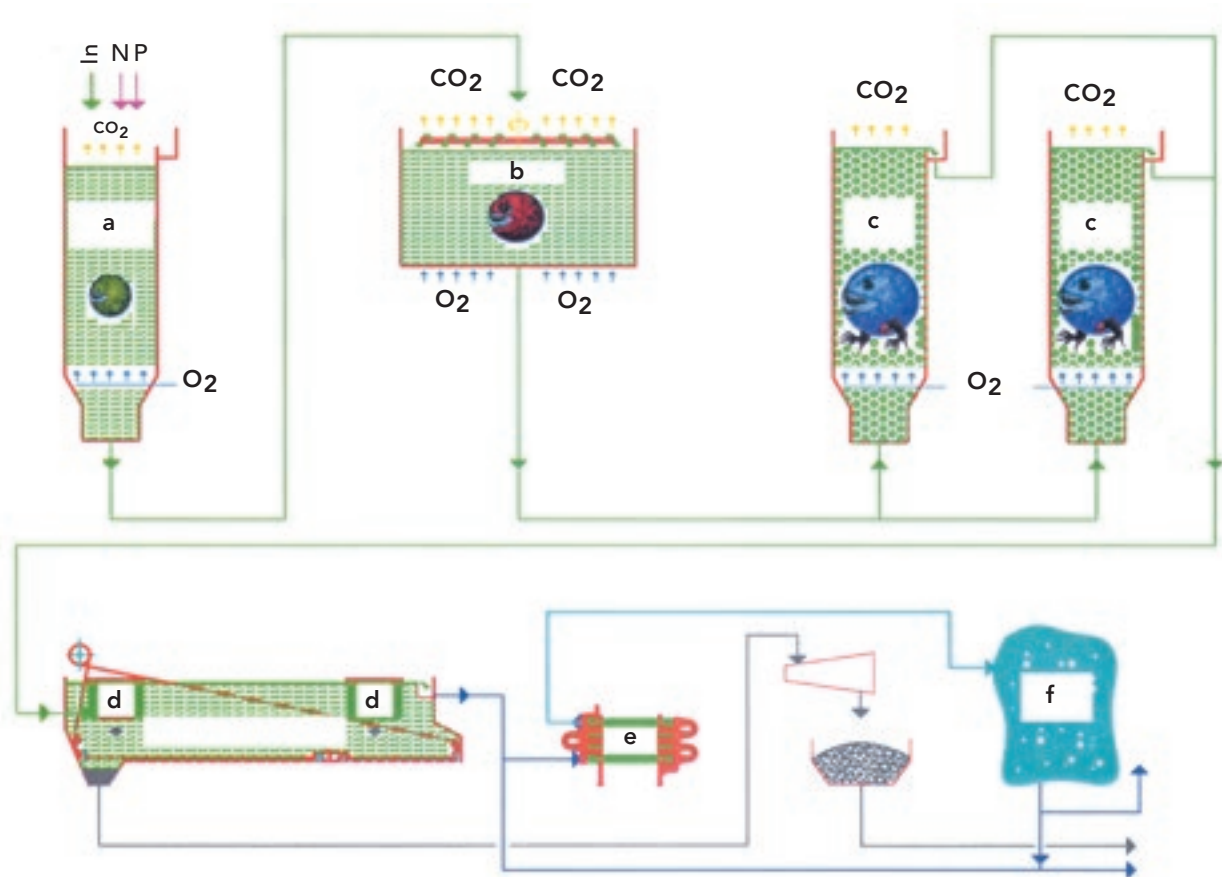
c) The water proceeds to towers with floating material, the surface of which is covered by bio-film. Air is added to make the material circulate in the towers.

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 2021 (2020) 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 person.



Compliance with permit conditions

Production level net

Max permit

200 000

Result 2021

152 276 tonnes/year

Discharges to water

Suspended solids	150	74	kg/day
COD _{Cr}	450	297	kg/day
BOD ₇	120	65	kg/day
Total Nitrogene (N)	20	13,4	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 kilometers with depths down to 125 meters. Passing the island Bornö the hill Smörkullen rises 134 meters 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 years 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 gneiss in the south.

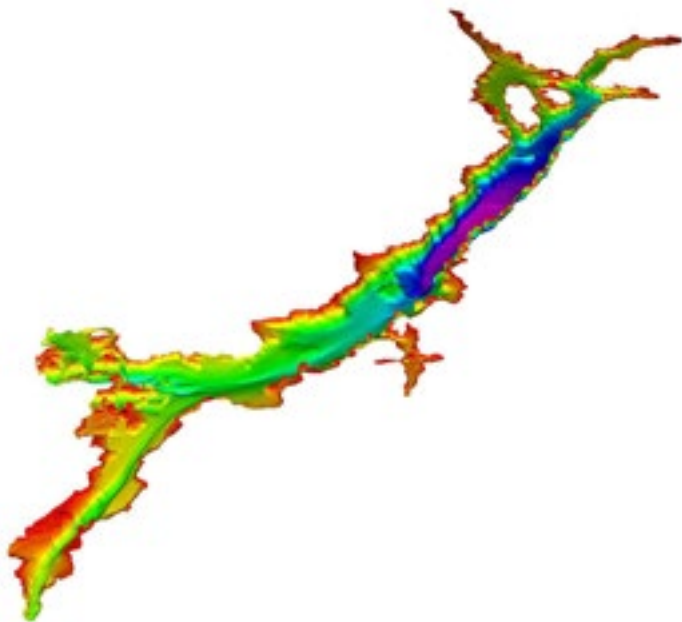


In 1830 scientists and interested parties were gathered on Kristineberg to discuss and to study the biodiversity of Gullmarn. One of these was the artist Wilhelm von Wright who painted – Fishes in Scandinavia, the zoologist Sven Lovén who is claimed to be the first to ever study the biodiversity of Gullmarn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

Three large ocean streams affect the marine life of Gullmarn. This means that we find water from the Baltic sea, Kattegatt/Skagerrak and Northern/Atlantic sea. Due to differences in salinity (content of salt) these waters find their own depths. This stratification 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 Celsius) 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

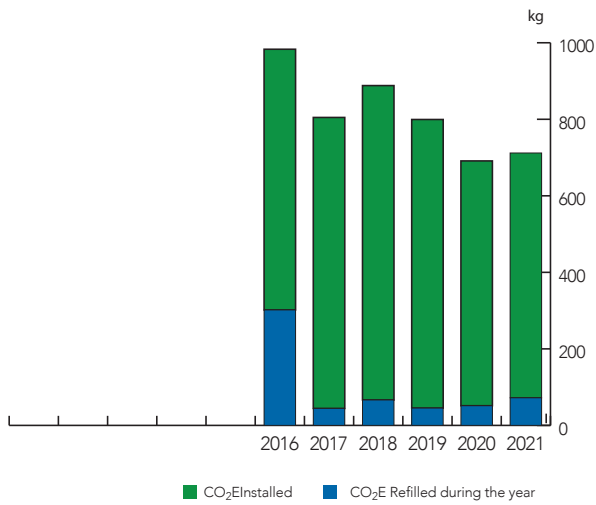


Chemical products



Energy

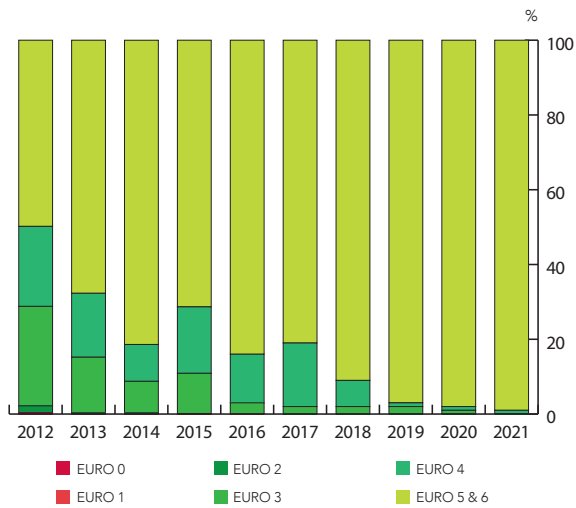
environmental impact



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

During 2021 the production increased from 137 000 ton to 152 600 ton. Water use decreased to 3,8 liter per kilo produced paper. The reason to the water decrease is the Hydro electric rebuild project. The water recirculation has been temporarily reduced during this project. This recirculation have now been connected again after the project is finished.

The total energy consumption decreased a little bit 2021 per ton of produced paper compared to previous year.

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

The now on going project to build a solid fuel boiler aims to secure the companies energy need and to reduce the CO2 emissions.

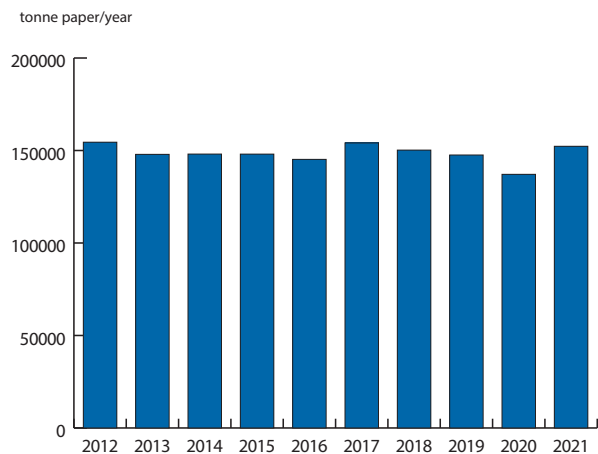
During the year, the rebuild of our hydro electric power station have ben finished. After this rebuild project, possibilities for site produced hydro electricity is doubled.

During 2021, emissions to water have decreased compared to previous year. The main reason to this is the hydro-electric project that now have been finished. The amount of reused water from the filtration stage have now increased, after being closed during this project.

Net production

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

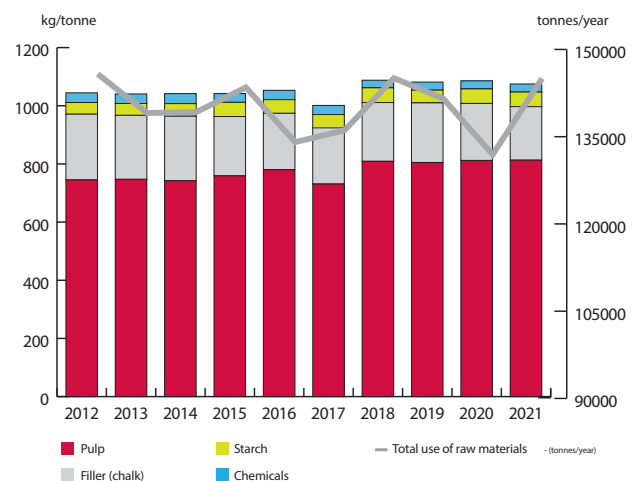
The net production shown in the trend diagram is used to calculate the efficiency of the operational activity with respect to the core indicators.



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.



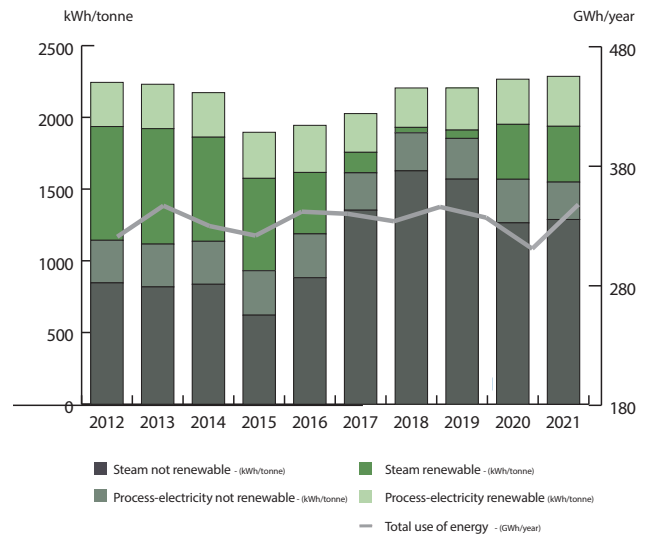
core indicators

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.

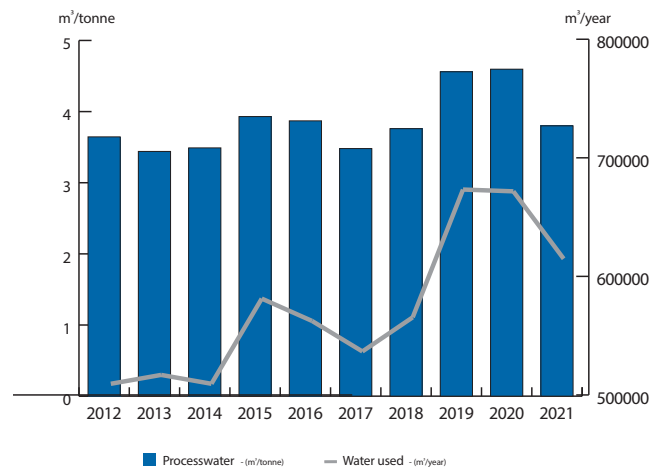


Water use

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.

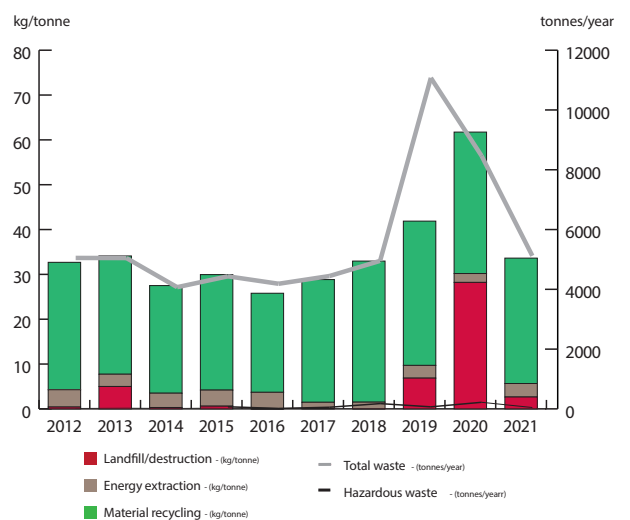
The mills water use have 2021 decreased to stay on a level similar to the years before the hydroelectric rebuilding project. The water recycle have now been opened again, after finishing the project.



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.

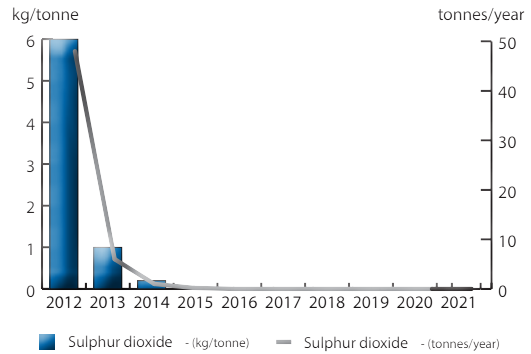


core indicators

emissions to air

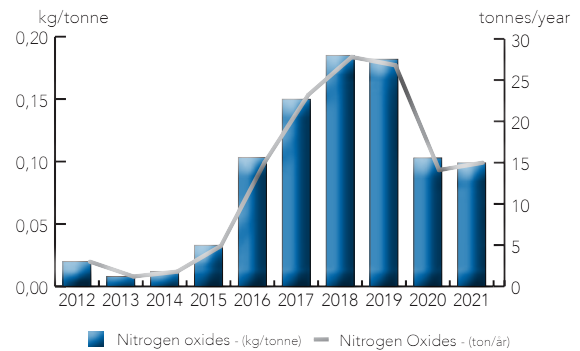
Sulphur dioxide (SO₂)

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. During 2021 the use of LNG (Liquefied Natural Gas) was unchanged.

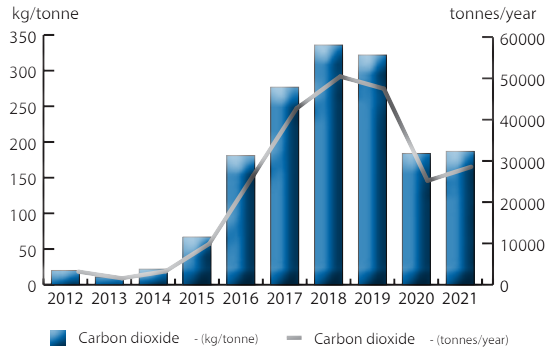


Carbon dioxide (CO₂) fossil

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 use of LNG (Liquefied Natural Gas) did not change much during 2021. Because of that, have the "on site" related CO₂ emissions stayed on a similar level as previous year.

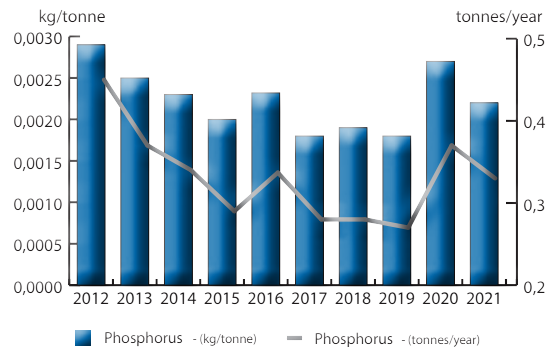


core indicators

emissions to water

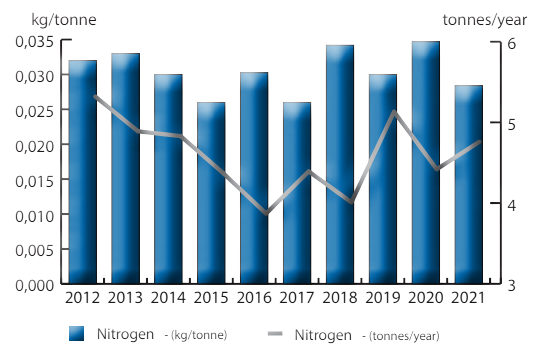
Phosphorus (P)

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 this year, due to the reopened water recirculation in connection with the finished hydroelectric project.



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.



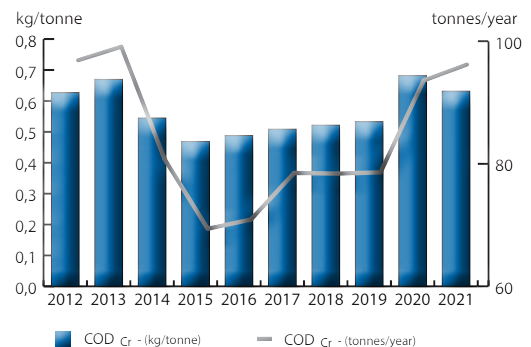
Suspended Solids (SS)

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 decreased this year, due to the reopened water recirculation. The finished hydroelectric project made this possible.



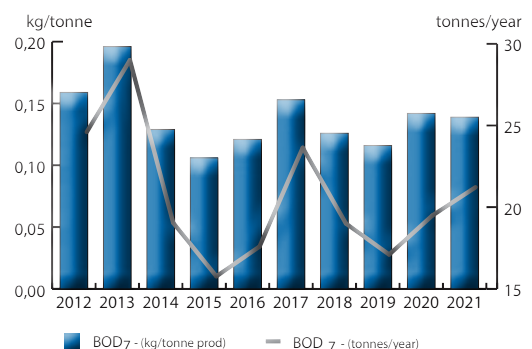
COD_{Cr}

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 decreased this year, due to the reopened water recirculation in connection with the finished rebuild of our hydroelectric power station.



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 2021

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. Planned completion September 2021
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. The possibilities to returning water has been limited due to the hydro power project. Target extended to 2022-12-31
Reduce material waste	Reuse pallets	Consult on opportunities with a suitable customer	Consultation with customers done. Not appropriate to implement.
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
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.	Construction in progress: Full production planned Q3 2022
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 judged to be achievable with the current product mix. The goal has to be reformulated to be possible to reach.

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.	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 A technical solution is under development
Biodiversity	Improve opportunities for migrating fish in the Munkedal river	Investigate opportunities for habitat improvements in the Munkedal river	Managed within the hydro power project. Consultant hired. A first stage completed September 2021. Further activities planned in 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. The possibilities to returning water has been limited due to the hydro power project. Target 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 Project situation according to plan.
Reduce material waste	Reuse pallets	Consult on opportunities with a suitable customer	This goal is cancelled due to technical and logistical constraints
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	Construction in progress: Full production planned Q3 2022
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 judged to be achievable with the current product mix. The goal is adjusted to 2,4%
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. The remaining part of the goal continues

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, 2022-06-07



Anders Eriksson / RISE Certifiering



VERIFIED
ENVIRONMENTAL MANAGEMENT
S-000248

How to order environmental reports

Arctic Paper Munkedals AB
SE-455 81 Munkedal
Tel: +46 10 45 180 00
info.munkedals@arcticpaper.com
arcticpaper.com

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.

Product manager

Eva-Lena Petersson
Product Manager, Munken
Tel. +46 10 45 170 10
eva-lena.petersson@arcticpaper.com

Contact persons

Mathias Schewenius
Safety Engineer / Management Systems
Tel. +46 10 45 172 61
mathias.schewenius@arcticpaper.com

Jonas Dahlqvist
Group Environmental Coordinator
Tel. +46 10 45 171 83
jonas.dahlqvist@arcticpaper.com

Ulf Johannesson
Environmental Manager
Tel. +46 10 45 171 08
ulf.johannesson@arcticpaper.com

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 water-course 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

Arctic Paper Munkedals AB

SE-455 81 Munkedal • Tel +46 10 45 180 00 • Fax +46 524 173 68

E-mail: info-munkedals@arcticpaper.com

arcticpaper.com