EPD®
THE INTERNATIONAL EPD® SYSTEM

From

NPA®

Nordiskt Papper AB
Svarvaregatan 11, 341 34
Ljungby, Sweden

Environmental Product Declaration

In accordance with ISO 14025:2006 and
EN 15804:2012+A2:2019 for

Rita Original – Craft Paper

Programme
The International EPD® System,
www.environdec.com

Programme operator
EPD International AB

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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at **www.environdec.com**

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GENERAL INFORMATION

Programme Information

Programme	The International EPD ® System	
Address	**EPD International AB** Box 210 60, SE-100 31 Stockholm, Sweden	**Website** www.environdec.com **Email** info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product category rules (PCR): PCR 2010:14 Processed Paper and Paperboard, Version 3.1, 2022-07-06 (valid until 2024-11-18) and UN CPC 32141
PCR review was conducted by: The Technical Committee of the International EPD® System. **Review chair:** Paola Borla, Life Cycle Engineering, Italy The review panel may be contacted via the Secretariat www.environdec.com/contact.
Life Cycle Assessment (LCA) LCA accountability: PT. Life Cycle Indonesia
Third-party verification Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: EPD verification by individual verifier
Third party verifier: Daniel Böckin, Miljögiraff AB (daniel@miljogiraff.se) under the guidance of Pär Lindman, Miljögiraff AB (par@miljogiraff.se) **Approved by:** The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☑ No

EPDs within the same product category but from different programmes may not be comparable. The EPD owner has the sole ownership, liability, and responsibility for the EPD

COMPANY INFORMATION

Owner of the EPD

NPA Nordiskt Papper AB
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kristina@nordisktpapper.se
Svarvaregatan 11, 341 34 Ljungby, Sweden

Description of the Organisation

The NPA Nordiskt Papper AB or NPA history started with the involvement of the Lidbeck family in the paper industry since 1920s. The NPA Nordiskt Papper AB itself officially established on 1971, started by Fredrik Lidbeck who splitting large volumes of 5 colored papers into multi-packs, and selling them to distributors, wholesalers and resellers. The company is a family company, with its own conversion, storage and distribution. Along with global network business partner of paper mills, NPA have a very wide market across the world. The primary market is based across Sweden and Scandinavia, but also extend out to Europe and some parts of North America, Asia, and Australasia. NPA believe that passion for creativity will never die. The reason for the company exist today and will still exist for the future, because of the company approach to the nature. NPA commit for more eco-friendly and reliable product. NPA has been certified with various certification that confirm NPA officially a green company for years, environmentally friendly products, socially responsible, and economically viable to reach sustainable.

Product-related or Management System-related Certifications

- EN ISO 9001:2015 for Quality Management System
- EN ISO 14001:2015 for Environmental Management System
- FSC for Chain of Custody
- Nordic Swan Ecolabel

Name and Location of Production Site

Production Plant & Warehouse

NPA Nordiskt Papper AB Polska SP. Z O.O., Siekierzyn 5, 63-520 Grabow nad Prosna Poland

Warehouse

NPA Nordiskt Papper AB Headquarters, Svarvaregatan 11, 341 34 Ljungby, Sweden

PRODUCT INFORMATION

Product Name

Rita Original – Craft Paper

Product Identification

Rita Original – Craft Paper is manufactured from 100% recovered papers that are used as raw materials for the production of pulp and paper, which then produces final product of 7 common types of Rita Original – Craft Paper, that are Tonpapper, Gladkartong, Dekorationskartong, Reklamkartong, Ritpapper, Ritpapper Svanen, and Returbaserat Ritpapper.

Product Description

Rita Original – Craft Paper is a colored, dyed, uncoated craft paper for different creative purposes. There are 7 common types of Rita Original – Craft Paper and its applications:

1. **Tonpapper / construction paper**
Colored, dyed, uncoated paper with grammages of 100-130g, usually for drawing and painting.

2. **Gladkartong / colored board**
Colored, dyed, uncoated board with grammages of 180g, usually for folding (i.e. cards and scrap book).

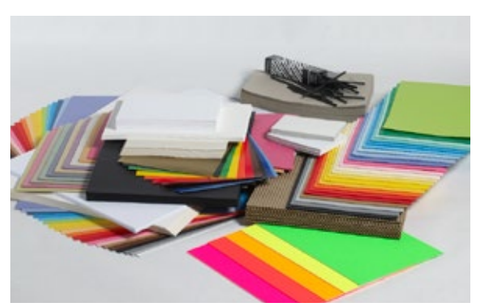
3. **Dekorationskartong / decoration board**
Colored, dyed, uncoated board with grammages of 225g, usually use as bottom base board.

4. **Reklamkartong / photo board**
Dyed, uncoated photo board with grammages of 270g or 300g, usually use as background board for presentations and cards.

5. **Ritpapper / drawing paper**
Wood-free drawing paper with grammages of 100-170g, usually use for sketch, draw or paint with chalk, pencil, ink and watercolor and other paints.

6. **Ritpapper Svanen / drawing paper Svanen**
Wood-free drawing paper with a pleasant whiteness (slightly whiter) with grammages of 100-170g, suitable for all types of drawing techniques for both dry and wet applications like sketching and drawing with crayons, pencils, felt tip pen, poster board inks and other variety of color qualities.

7. **Returbaserat Ritpapper / recycled drawing paper**
Recycled drawing paper with grammages of 100-135g, suitable for all types of drawing and painting because its moderately rough surface.



Technical Infomation

The technical information for the 7 common types of Rita Original – Craft Paper are as shown on below table.

Parameter	Weight (Grammages) (g/m^2)	Thickness (µms)	Smoothness Roughness Bendtsen (Sec/10ml)	Moisture Content (%)
Tonpapper /Construction Paper	100-130	130-169	500	6-7
Gladkartong / Colored Board	180	235	500	6-7
Dekorationskartong / Decoration Board	225	293	500	6-7
Reklamkartong / Photo Board	270-300	351-390	500	6-7
Ritpapper / Drawing Paper	100-170	130-221	500	6-7
Ritpapper Svanen / Drawing Paper Svanen	100-170	130-221	500	6-7
Returbaserat Ritpapper / Recycled Drawing Paper	100-135	130-176	500	6-7

The Common Types of Rita Original - Craft Paper

			
Tonpapper / Construction Paper	Gladkartong / Colored Board	Dekorationskartong / Decoration Board	Reklamkartong / Photo Board
			
Ritpapper / Drawing Paper	Ritpapper Svanen / Drawing Paper Svanen	Returbaserat Ritpapper / Recycled Drawing Paper	

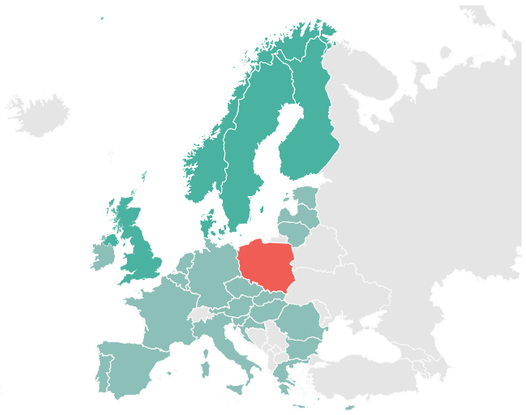
UN CPC Code

Composite paper and paperboard, not surface-coated or impregnated (Group: 321, Class: 3214, Subclass: 32141)

Geographical Scope

Europe

Manufactured in Poland, supplied to Europe (the biggest customers are Sweden, Finland, Norway, Denmark, and UK).



LCA INFORMATION

Functional Unit / Declared Unit

1 tonne of Rita Original – Craft Paper

Reference Service Life

Not applicable

Time Representativeness

Specific data for the manufacturing collected from 2021-01-01 to 2021-12-31. The 10-year age requirement for generic data has been met.

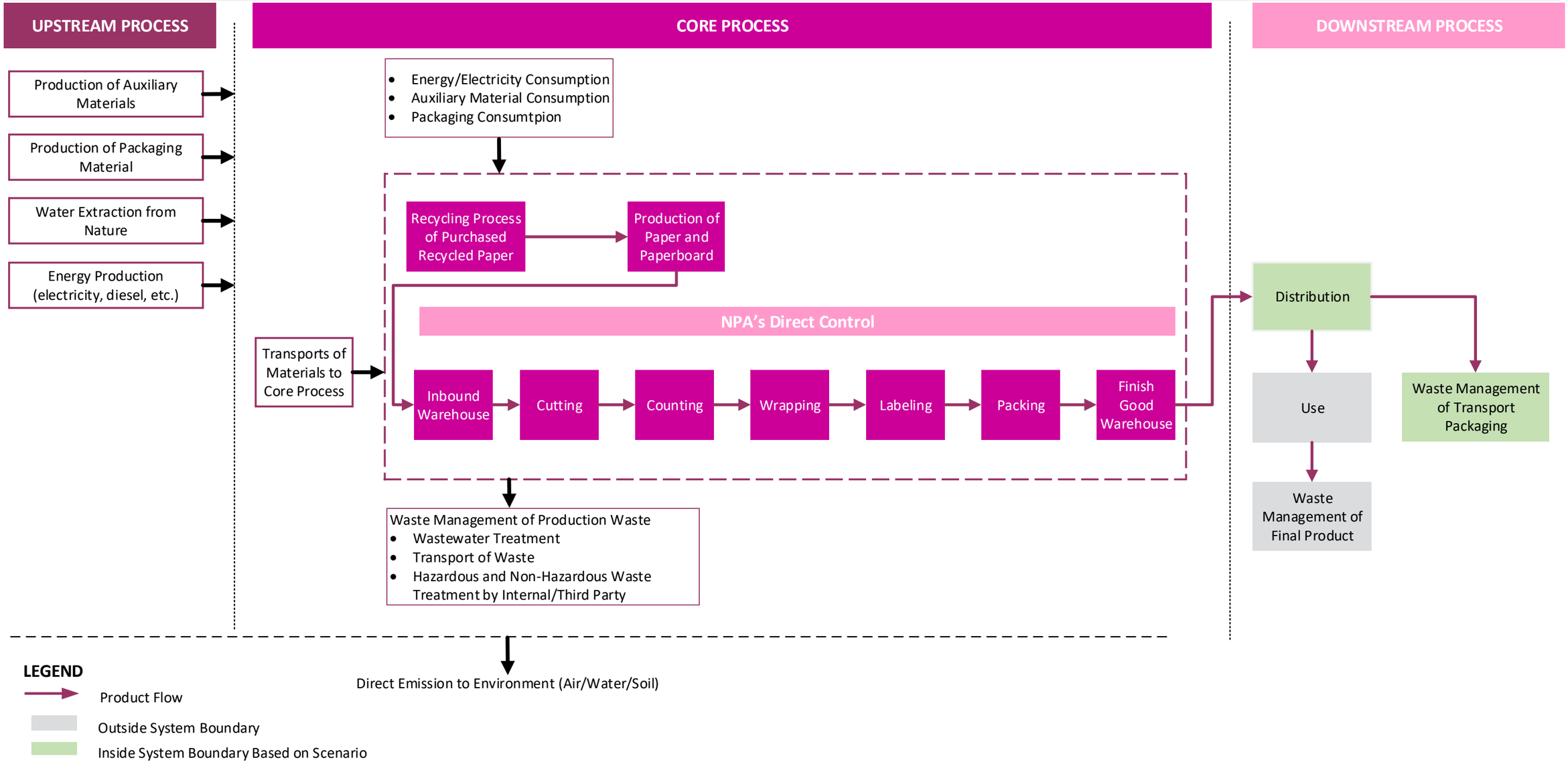
Database(s) and LCA Software Used

Generic data for the model use Ecoinvent 3.8 database. All data modelled by using SimaPro Developer software version 9.3.0.3. No datasets older than 10 years were used.

System Diagram:

In general, the product system consists of processes below.

SYSTEM BOUNDARY – NORDISKT PAPPER AB



Description of System Boundaries

Cradle-to-grave excluding the use phase and end-of-life stages. The processes below are included in the product system to be studied:

1

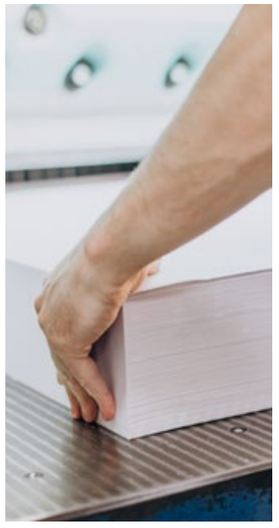
Upstream

a. Production of auxiliary materials (e.g., paper dyes, starch, chemicals, etc.)

b. Production of packaging (e.g. stretch film plastic, corrugated carton, wooden pallet, etc.)

c. Production of electricity and fuel (i.e. renewable energy, fuel LPG, fuel oil, etc.)

d. Extraction of water (i.e. surface water & tap water)



2

Core

a. Recycling & pulping process recycled paper and the transport from the recycling process to where the material is used (NPA supplier);

b. Production of colored paper (NPA supplier);

c. Transportation of raw/auxiliary materials from the supplier to manufacturing plant;

d. Inbound warehouse (Poland): Receive & store the purchased colored paper;

e. Cutting (Poland): Cut the colored paper into a specific size;

f. Counting (Poland): Manually count the colored paper by human hand.

g. Wrapping (Poland): Wrapping the colored paper using plastic wrap;

h. Labeling (Poland): Labeling the wrapped colored paper;

i. Packing (Poland): Packing colored paper using corrugated cardboard and plastic stretch film;

j. Finish Good Warehouse (Poland & Ljungby): Storing the finished colored paper before distributing them to customers;

k. Transport finished product between warehouses (Poland to Ljungby);

l. Treatment of waste generated from the production processes (used oil, waste plastic wrap, label backing paper, waste acrylic glue, etc.).

In NPA, the core process only includes transportation of raw/auxiliary materials from the supplier to manufacturing plant, inbound warehouse, cutting, counting, wrapping, labeling, packing, finish good warehouse. Meanwhile, the recycling process of 100% recovered paper (i.e. collection, sorting and transportation, shredding and pulping), paper production, and other processing processes (e.g. coloring etc.) are carried out in the supplier's company.

3

Downstream

a. Transportation from final manufacturing to merchant or distribution platform.

b. Waste management of transport packaging (wooden pallet).

Excluded Lifecycle Stages

The following product stages are excluded from the LCA:

1. Manufacturing of production equipment, buildings and other capital goods.
2. Business travel of personnel.
3. Travel to and from work by personnel.
4. Research and development activities.

More Information

Relevant website for more information:
www.nordisktpapper.se

Key Assumptions and Limitations

The emissions and impacts of fuel LPG and fuel oil used during pulp and paper production process are assumed using commercial database, due to no measurement of emission data on the equipment.

Production processes of black liquor, wood-based biofuel, and other biofuel are not included, because this fuel is produced by pulp milling processing that complies with the polluter pays principle (PPP).

Dataset of electricity mix in Poland and Sweden and dataset of fuel oil based on the Ecoinvent database are used, while for the dataset of LPG are based on the USLCI database.

Electricity consumption for lighting in Poland warehouse is calculated in proportion to area of warehouse using the light power of Ljungby warehouse.

There is no specific data for renewable energy sources used for pulp and paper mills, therefore the most widely renewable energy sources in Poland and Sweden, i.e. wind power for Poland and hydropower (or water) for Sweden are used. The generic data from Ecoinvent database are used to represent the dataset.

There is no available data from suppliers regarding the production process of auxiliary materials (e.g. Paper dyes, starch, chemicals, etc.) and packaging (e.g. stretch film plastic, corrugated carton, wooden pallet, etc.). Therefore, the generic data from ecoinvent database are used to represent the dataset because the primary data is not available.

The impact of transportation for raw materials, auxiliary materials, and sellable products to customers are calculated based on the amount of load, distance, and transportation type by using generic data from Ecoinvent.

There is two main suppliers of pulp and paper mills, one in Poland and another is in Sweden. The amount of pulp and paper supplied varies based on the price given from each mill, but the percentage sharing range between 40-60%. Therefore, this study uses the average amount of pulp and paper supplied which is 50% from each Poland and Sweden.

All data for pulp and paper mill is aggregated for Poland and Sweden suppliers. Hence, the data is calculated for each product based on the production ratio.

The excess water from the input that is not balanced with the wastewater output is assumed to evaporate during the pulp and paper production process.

Data for the paper production process are aggregated for several paper types and cannot be separated by grammage and colors. The paper production process is mixed between one and another type. NPA's parts are only cutting to packing, and distributing. The bulk of the production is at the supplier. The suppliers don't have specific data for certain grammages. As for different types of color, we use data from 3 different primary colors with ratio 1:1:1. There are uncertainties relating to the result.

Transportation of purchased biofuel from suppliers to NPA pulp & paper mill suppliers is estimated based on average distance traveled by truck in Poland (i.e. 237 km) and Sweden (i.e. 91 km). While there is no transportation for on site biofuel.

The transportation waste of wooden pallet to waste processing unit are estimated based on average distance travelled by truck in customers' countries.

Cut-off Rules

At each unit process within the system boundary, all data will be included, unless those that meet the cut-off criteria, i.e.:

1. Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts shall be included (not including processes that are explicitly outside the system boundary as described in previous section about description of system boundary.

2. The check for cut-off rules in a satisfactory way is through the combination of expert judgment based on experience of similar product systems and a sensitivity analysis in which it is possible to understand how the un-investigated input or output could affect the final results.

Data Quality

Time related coverage

Specific data were collected from 2021-01-01 to 2021-12-31, and generic data are representative of the year 2021.

Geographic coverage

Specific data were collected from the area under study, i.e., Grabow nad Prosna, Poland and Ljungby, Sweden. Electricity production as a key input are sourced from national grid. Therefore, dataset of electricity mix in Poland and Sweden was used. Another key input is production of long fibrous pulp that is in Sweden and Poland. Some adjustments to Sweden and Poland region were made to the Ecoinvent database that are used.

Technological coverage

Specific data were collected from colored paper production process under study. There is no specific data for upstream module, therefore generic data from the global average was used with similar technology aspects to describe the process under study.

Data quality for both specific and generic data were sufficient to conduct life cycle assessment in accordance with the defined goal and scope.

Allocation Rules

In this study, allocation is applied in the manufacturing phase for main products and by-products that will be allocated using mass allocation. For example, allocation by mass was applied in finish good warehouse Poland between sellable paper to be directly distributed from Poland and sellable paper to be delivered to finish good warehouse Ljungby.

LCA Scenarios and Additional Technical Information

- Fiber recovered paper is used as raw material, as the production of pulp and paper only use 100% waste paper as raw material to produce the Rita Original - Craft Paper.
- Both pulp and paper mill are located in Poland and Sweden that uses electricity supplied by national grid and renewable energy. The renewable energy based on wind power supplied for Poland, and the one based on hydro power supplied for Sweden. The dataset from Ecoinvent is used. In addition, the database for water consumption is modified to water from Poland and Sweden.
- The characterisation factor (CF) for water use is modified to describe the watershed level where the unit process withdraws water, i.e., Siekierzyn, Grabow nad Prosna, Poland. The CF data is documented by AWARE through a Google Layer Document that provides CF up to watershed level in the region. The CF ranges from 0.1 up to 100 with the annual average is 2.2. Therefore, the CF for water is modified to 2.2 m^3/m^3 from average Poland 2.02 m^3/m^3. The other one is for Svarvaregatan, Ljungby, Sweden. The CF data is also documented by AWARE through a Google Layer Document that provides CF up to watershed level in the region. The CF ranges from 0.01 up to 100 with the annual average is 0.5. Therefore, the CF for water is modified to 0.5 m^3/m^3 from average Sweden 2.12 m^3/m^3.
- Transportation using trucks in customer countries adjusted to its EURO level to represent the current condition. In Finland, EURO V is used. Meanwhile in England, Germany, Sweden, and Norway EURO VI is used.
- Transportation in the customer countries are estimated based on the average truck travelled per day (Finland = 113 km, England = 107 km, Germany = 98 km, Sweden = 91 km, and Norway = 88 km).

CONTENT DECLARATION

Product

Materials / chemical substances	Unit	%	kg*
Pulp (100% recovered)	kg	80	800
Filler, $CaCO_3$, Calcium Carbonate	kg	10	100
Pigment and binders (starch, fennosize, fennosil**)	kg	5	50
Moisture	kg	6-7	60-70

*the weight has been calculated for 1 tonne of Rita Original – Craft Paper
**fennosil contains hazardous properties

Packaging

Distribution packaging

Materials	kg*
Plastic Wrap	3.47E-01
Label Sticker Roll	1.25E-01
Acrylic Glue	4.04E-03
Stretch Film Plastic	1.81E+00
Corrugated Carton	2.82E+00
Tape for Boxes	2.22E-02
Wooden Pallet	5.25E+01

*average amount of distribution packaging material used per 1 tonne of Rita Original – Craft Paper

Consumer packaging:

Materials	kg*
Plastic Wrap	3.47E-01
Label Sticker Roll	1.25E-01
Acrylic Glue	4.04E-03
Stretch Film Plastic	1.81E+00

*average amount of consumer packaging material used per 1 tonne of Rita Original – Craft Paper

Recycled Material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:
The Rita Original - Craft Paper produced by using pulp that comes from 100% fiber recovered paper.

ENVIRONMENTAL PERFORMANCE

Potential Environmental Impact

Parameter		Unit	Upstream	Core	Downstream	Total
Global warming potential (GWP)	Fossil	kg CO_2 eq	1.12E+03	3.75E+02	9.91E+01	1.60E+03
	Biogenic	kg CO_2 eq	7.50E+00	3.75E+01	3.15E+00	4.82E+01
	Land use and land transformation	kg CO_2 eq	4.15E+01	4.35E-02	9.77E-04	4.15E+01
	TOTAL	kg CO_2 eq	1.17E+03	4.13E+02	1.02E+02	1.69E+03
Acidification potential (AP)		mol H+ eq	1.08E+01	3.27E+00	5.28E-01	1.46E+01
Eutrophication potential (EP)	Aquatic freshwater	kg P eq.	1.60E-01	9.02E-02	5.57E-05	2.50E-01
	Aquatic marine	kg N eq.	1.58E+00	3.37E+00	1.19E-01	5.06E+00
	Aquatic terrestrial	mol N eq.	1.43E+01	1.23E+01	1.30E+00	2.79E+01
Photochemical oxidant creation potential (POCP)		kg NMVOC	3.15E+00	2.90E+00	3.65E-01	6.41E+00
Ozone layer depletion (ODP)		kg CFC-11 eq	6.88E-05	4.99E-05	1.86E-05	1.37E-04
Abiotic depletion potential (ADP)	Metals and minerals	kg Sb eq	4.08E-03	1.31E-05	3.98E-06	4.09E-03
	Fossil resources	MJ	1.26E+04	3.84E+03	1.40E+03	1.78E+04
Water deprivation potential (WDP)		m^3 eq	1.11E+02	1.73E+01	1.27E-01	1.28E+02

Use of Resources

Parameter		Unit	Upstream	Core	Downstream	Total
Primary energy resources – Renewable	Use as energy carrier	MJ	6.21E+03	4.61E+01	2.24E+00	6.26E+03
	Used as raw materials	MJ	0	0	0	0
	TOTAL	MJ	6.21E+03	4.61E+01	2.24E+00	6.26E+03
Primary energy resources – Non-renewable	Use as energy carrier	MJ	1.84E+04	4.16E+03	1.49E+03	2.41E+04
	Used as raw materials	MJ	0	0	0	0
	TOTAL	MJ	1.84E+04	4.16E+03	1.49E+03	2.41E+04
Secondary material (optional)		kg	2.38E+03	9.37E+02	0	3.32E+03
Renewable secondary fuels (optional)		MJ	0	0	0	0
Non-renewable secondary fuels (optional)		MJ	0	0	0	0
Net use of fresh water (optional)		m^3	2.59E+02	9.59E+01	4.25E-03	3.55E+02

Waste Production and Output Flows (Optional)

Waste production

Parameter	Unit	Upstream	Core	Downstream	Total
Hazardous waste disposed	kg	4.88E-02	2.31E-01	0	2.80E-01
Non-hazardous waste disposed	kg	3.00E+02	8.82E+04	5.00E+01	8.86E+04
Radioactive waste disposed	kg	0	0	0	0

Output flows

Parameter	Unit	Upstream	Core	Downstream	Total
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0	2.86E+01	0	2.86E+01
Materials for energy recovery	kg	0	3.05E+00	0	3.05E+00
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

INTERPRETATION OF RESULTS

From overall life cycle stages, core module contributes significantly to the impact generated by the whole life cycle. All of the impact contributors or hotspots are caused by processes that occur in the core module.

Electricity production process in Poland is the largest contributor for 9 impact categories from total 10 impact categories. Then, followed by the transportation of raw materials and sellable products contributes to 6 impact categories.

From the transportation aspect, there is significant impact caused by transportation of raw materials and sellable products (by truck), and transportation of sellable products (by ship). The transportation of raw materials and sellable products (by truck) contributes significantly to 6 impact categories, while the transportation of sellable products (by ship) contributes significantly to 5 impact categories.

Activities carried out on the end-of-life of the wooden pallet waste (downstream module) did not have a significant impact on the overall colored paper life cycle studied.

Sensitivity analysis was conducted for different ranges of electricity consumption in Poland. The results show insignificant changes with average overall variation is no more than 20%. Therefore, the environmental performance of electricity consumption in Poland are representative.

ADDITIONAL INFORMATION

NPA always strives produces eco-friendly products by take part in reducing the environmental impact by installed clean, renewable energy systems on the production in Poland, such as solar panel. It reduce the environmental impact significantly while lowering NPA's energy bill.

To be continuously improve toward the environment, NPA invests in advanced environmental technologies and also invests in human resources by hiring a new environment manager. While for the current paper production, most of the paper used in the production process is made of 100% recycled fibre and does not use toxic dyes, glues, and other auxiliary materials.

Aside from that, NPA have implemented the Quality Management System (EN ISO 9001:2015) and Environmental Management System (EN ISO 14001:2015). Furthermore, NPA have been certified by FSC on Custody of Chain and NPA’s product have been labelled with Nordic Swan Ecolabel.

CONTACT INFORMATION

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Environmental Product Declaration

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