# **Water-Activated Tape**

from





# **Environmental Product Declaration**

In accordance with ISO 14025

PROGRAMME:	The International EPD® System, www.environdec.com
PROGRAMME OPERATOR:	EPD International AB
EPD REGISTRATION NUMBER:	S-P-05987
PUBLICATION DATE:	2023-05-16
REVISION DATE:	2023-06-30 (version 1.1)
VALID UNTIL:	2028-05-15



# **EPD Programme Information**

□ No



Programme:

The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm

Sweden

www.environdec.com info@environdec.com

Owner of the EPD: IPG Contact: Sustainability@itape.com

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

PCR review was conducted by: Anna Bortoluzzi, Università degli Studi di Milano - Department of Chemistry, anna.bortoluzzi@unimi.it
Independent third-party verification of the declaration and data, according to ISO 14025:2006:
☐ EPD process certification
Third party verifier: Lydia Schreiber, Maggie Wildnauer, Brad McAllister WAP Sustainability Consulting In case of recognised individual verifiers: Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Product category rules (PCR): Packaging PCR 2019:13 Version 1.1 Valid until: 2023-11-08

The environmental impacts of different EPDs can be compared only taking into account all the technical information supporting the declared/functional unit definition as requested by the PCR.





# **Water-Activated Tape**



# **IPG Company Information**

Company



Product



Content Declaration



Environmenta Performance



Additional Information



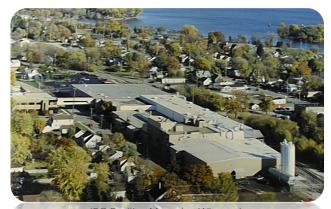
Headquartered in Sarasota, Florida, IPG is a global provider of packaging and protective solutions across a diversified set of geographies and end-markets. The Company develops, manufactures, and sells a variety of solutions including paper and film-based pressure-sensitive and water-activated tapes, stretch and shrink films, protective packaging, woven and non-woven products and packaging machinery.

### Name and location of production site:

Water-activated tape product line is manufactured at the IPG facilities located at 741 4th Street, Menasha, Wisconsin, 54952; and 13722 Bill McGee Road, Midland, North Carolina, 28107, United States.



IPG Corporate Headquarters, Sarasota, Florida



IPG Facility, Menasha, Wisconsin



IPG Facility, Midland, North Carolina



### **Our Locations**

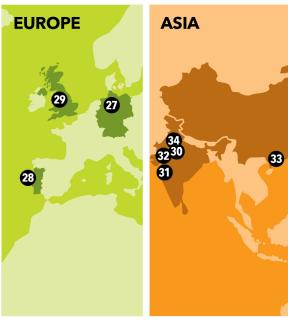












#### **NORTH AMERICA -**

Ansonia, CT
 Atlanta, GA
 Bardstown, KY (2)
 Blythewood, SC
 Brighton, CO
 Carbondale, IL
 Carlstadt, NJ
 Carrollton, TX

10. Chicago, IL

11. Corona, CA
12. Cornwall, ON
13. Danville, VA
14. Delta, BC
15. Everetts, NC
16. Marysville, MI
17. Menasha, WI

18. Midland, NC

19. Montreal, QC 🌣

21. Sarasota, FL ★
22. Schaumburg, IL ■
23. Springfield, OH ●
24. Toronto, ON ●
25. Tremonton, UT ●
26. Truro, NS

20. Salisbury, NC

EUROPE — ASIA

27. Flensburg, Germany 30. Chopanki, India 31. Daman, India 32. Dahej, India 33. Jiangmen City, China 34. Karoli, India 40. Manufacturing Machine Assembly Distribution

**☆** Administrative Office **★** Corporate Headquarters



### **Our Vision**



Product



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Environmenta Performance



Additional







## **Our Commitment**



Product



Content Declaration



Environmental



Additional





"At IPG, we remain committed to the development and commercialization of more sustainable packaging solutions, and our partnership with leading organizations such as the Sustainable Packaging Coalition, ENERGY STAR, United Nations Global Compact, and others, is a demonstration of our commitment."

Jay Bolus, Vice President, Sustainability

IPG subscribes to externally developed economic, environmental, and social charters, principles and other initiatives that align with our sustainability efforts.





ecovadis

















# **Working with Experts**





- William McDonough
- Author of Cradle to Cradle
- Focused on the circular economy
- Complex evaluations and monitoring for improvement

"Making the transition from less bad to more good"
Jay Bolus, VP Sustainability, IPG



## **Multi-Attribute Certifications**

















**Our Circular Economy** 



Product



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Environmental Performance



Additional



### **Eliminating the concept of waste**

Our Sustainable Product Design and Development Vision Statement directs the application of "safe and circular" concepts to our products' design and development. We have committed to eliminating toxic substances from new and existing products and incorporating recycled and renewable materials while maintaining product performance. Achieving a circular economy is a long-term objective, and we are dedicated to working towards it.

The Circular Economy emulates natural life cycles, and eliminates the concept of waste so that all products and their components become "food" for other systems- either biological (returning to nature) or technical (returning to industry).





# **Product Information - Water-Activated Tape**

Company



Product



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Performance



**Product** 

#### **Product name:**

Water-Activated Tape

### **Product description:**

Water-activated tape (gummed paper tape, gum tape, kraft paper tape) bonds instantly to both virgin and recycled fiber surfaces and therefore, generates an immediate destructive bond resulting in a tamper evident package. IPG's paper tape is offered in both fiberglass reinforced and plain paper with many styles available in standard prints or customized prints to display your corporate message. They all have one common feature... uncompromising quality.

### **UN CPC code:**

UN CPC 32149

### **Geographical scope:**

North America





# **Cradle to Cradle Certification**

Company



Product



Content Declaration



Environmenta Performance



Additional Information



At IPG, our ongoing sustainability efforts are a top priority. Our brand is committed to developing sustainable packaging alternatives that meet the changing needs of the market, as well as customers who consider the environment in their decision-making.

Cradle to Cradle Certified® is a globally recognized and trusted, science-based measure that leads industry transformation towards a safe, circular and equitable future. Unlike many of the single attribute certifications available, it is a multiattribute measure of sustainable products; the globally recognized certification assesses all aspects of product design and manufacturing and signals that the brand has made the commitment to continuous improvement for all products that carry the Cradle to Cradle Certified mark.

Cradle to Cradle Certified provides brands with the framework for considering the impact of their actions on the environment and the communities across their value chain.

### **Water-Activated Tape**

As of February 2020, IPG's <u>Natural Kraft Water-Activated Tape</u> (also known as WAT or Gum Tape) was <u>Cradle to Cradle Certified Bronze</u>. All of IPG's WAT is recyclable with the carton it is applied on. Cartons are one of the most widely recycled packaging products in use today. When you use IPG's WAT tape to seal the carton, the paper from the tape contributes to the recycling stream with the corrugate.





# **Product Information**

























Product	IPG Production Facility	Roll Dimensions
Venom Natural	Midland, NC	70mm x 1000' (70mm x 305m)
Printed Venom Natural	Midland, NC	70mm x 1000' (70mm x 305m)
260 Natural	Menasha, WI	3" x 900' (76mm x 274m)
Printed 260 Natural	Menasha, WI	3" x 900' (76mm x 274m)



# **LCA Information**

Company



Product



Content Declaration



Environmenta Performance



Additional



#### **Functional Unit**

1 m<sup>2</sup> tape

The final packaging product unit cannot be identified as it varies by packaging size, application, and user.

#### **Reference Flow**

Venom Natural: 1.26E-01 kg/m<sup>2</sup>

Printed Venom Natural: 1.33E-01 kg/m<sup>2</sup>

260 Natural: 1.46E-01 kg/m<sup>2</sup>

Printed 260 Natural: 1.54E-01 kg/m<sup>2</sup>

#### **Reference service life:**

• single use

#### **Time representativeness:**

Primary data for electricity and scrap rate at IPG production facility and material composition and supplier information from 2022.

### Database(s) and LCA software used:

GaBi LCA Software version 8.0 Sphera database 2022, US LCI Database 2022

### **End of Life Disposal Scenario:**

The water-activated tape was assumed to be 100% recycled. Based on EPA data, the tape was assumed to be 81% recycled, while the remaining 19% was landfilled (EPA, 2021).

#### **Environmental Performance:**

Mandatory impact category indicators are adopted from the core environmental impact indicators of EN 15804:2012+A2:2019/AC:2021.



# **LCA Information**







Content





Information



### **Description of system boundaries:**

Life and atoms	life mele medule		EPD Type
Life cycle stage	Life cycle module	Life cycle module group	Functional Unit: Cradle-Grave
Upstream	A1) Raw material supply		X
Core	A2) Transport	A1-A3) Product stage	X
Core	A3) Manufacturing		X
	A4) Transport to forming or filling	A4 AF) Forming stage	ND
	A5) Forming	A4-A5) Forming stage	ND
	B1) Filling operation		X
	A4) Transport to forming or filling A5) Forming		X
Dawwatuaan	B3) Transport to reconditioning	B1-B5) Use stage	ND
Downstream	B4) Reconditioning		ND
	B5) Transport to re-filling point		ND
	C1) Disassembling/sorting		X
	C2) Transport to recovery/disposal	C1-C3) End of life stage	X
	C3) Final disposal		X

**Excluded lifecycle stages:** Downstream Module

A4) Transport to Forming or Filling (Module Not Declared, ND)

Product is sold unfilled to the final consumer and shipped to distributor from manufacturing facility

A5) Packaging Forming (Module Not Declared, ND)

Product is formed during manufacturing

**B3) Transport to Reconditioning (Module Not Declared, ND)** 

Product is single use

**B4)** Reconditioning (Module Not Declared, ND)

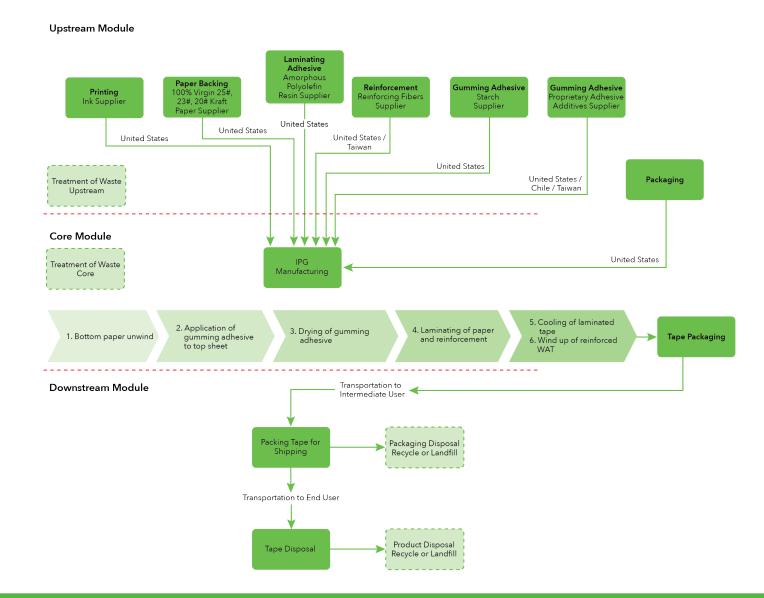
Product is single use

**B5) Transport to Re-Filling Point (Module Not Declared, ND)** Product is single use



# LCA Information Water-Activated Tape process system diagram







# **Content Declaration: Venom Natural**

Company



#### Product



#### Content Declaration



Environmental Performance



Additional Information



### **Product**

### Materials / chemical substances



100% Virgin 23# Kraft Paper

32%



4.01E-02 per m<sup>2</sup> tape



100% Virgin 20# Kraft Paper

28%



3.49E-02 per m² tape



Amorphous Polyolefin Resin

18%



2.24E-02 per m² tape



Reinforcing Fibers

3%



4.04E-03 per m<sup>2</sup> tape



Starch

13%



1.69E-02 per m² tape



Proprietary Adhesive Additives

6%



6.92E-03 per m² tape

### **Packaging**

### Distribution/Consumer packaging:

Corrugated Box sealed with Water-Activated Tape, 6 rolls per carton, 50 cartons per pallet; 30" x 36" coated paper slip sheet each carton layer; 40"x 48" pallet, stretch wrapped





# **Environmental Performance: Venom Natural**

Company



roduct



Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Mo	dule	
Core environmental impact indicators		Upstream	Core	Downstream	Total
Climate Change - total	kg CO <sub>2</sub> eq.	5.06E-02	8.54E-02	7.17E-02	2.08E-01
Climate Change - fossil	kg CO <sub>2</sub> eq.	1.49E-01	8.53E-02	5.92E-02	2.94E-01
Climate Change - biogenic	kg CO <sub>2</sub> eq.	-9.85E-02	1.57E-05	1.26E-02	-8.59E-02
Climate Change - LULUC	kg CO <sub>2</sub> eq.	4.14E-06	2.29E-06	1.36E-07	6.57E-06
Ozone depletion	kg CFC-11 eq.	1.05E-09	1.03E-12	1.21E-12	1.05E-09
Acidification	Mole of H+ eq.	5.67E-04	5.04E-04	3.66E-04	1.44E-03
Eutrophication, freshwater	kg P eq.	2.14E-05	3.81E-08	5.50E-07	2.20E-05
Eutrophication, marine	kg N eq.	1.81E-04	1.26E-04	1.37E-04	4.44E-04
Eutrophication, terrestrial	mol N eq.	2.01E-03	1.37E-03	1.56E-03	4.94E-03
Photochemical ozone formation	kg NMVOC eq.	3.57E-04	3.77E-04	3.90E-04	1.12E-03
Abiotic depletion potential, minerals & metals <sup>1</sup>	kg Sb eq.	4.70E-08	5.47E-09	1.97E-10	5.27E-08
Abiotic depletion potential, fossil resources <sup>1</sup>	MJ	3.32E+00	1.30E+00	6.09E-01	5.23E+00
Water use <sup>1</sup>	m³ world eq. deprived	2.67E-01	5.18E-03	-5.85E-04	2.72E-01
Indicators describing resource use		Upstream	Core	Downstream	Total
Use of renewable primary energy as energy carrier	MJ	4.15E-01	7.56E-02	9.22E-04	4.92E-01
Use of renewable primary energy resources used as raw materials	MJ	4.12E-02	3.35E-12	2.03E-14	4.12E-02
Total use of renewable primary energy	MJ	4.56E-01	7.56E-02	9.22E-04	5.33E-01
Use of non-renewable primary energy as energy carrier	MJ	3.35E+00	1.30E+00	6.09E-01	5.26E+00
Use of non-renewable primary energy resources used as raw materials	MJ	8.50E-07	8.48E-06	6.53E-14	9.33E-06
Total use of non-renewable primary energy resource	MJ	3.35E+00	1.30E+00	6.09E-01	5.26E+00
Secondary material	kg	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0
Net use of fresh water	m³	6.22E-03	1.54E-04	-1.36E-05	6.36E-03



# **Environmental Performance: Venom Natural**

Company







Content Declaration







Additional Information



Indicator name	Unit		Mo	dule	
Environmental information describing waste categoric	es	Upstream	Core	Downstream	Total
Hazardous waste disposed	kg	3.60E-07	1.69E-11	3.27E-09	3.63E-07
Non-hazardous waste disposed	kg	1.14E-03	1.56E-04	1.84E-02	1.97E-02
Radioactive waste disposed	kg	2.02E-05	6.02E-05	1.89E-07	8.06E-05
Environmental information describing output flows		Upstream	Core	Downstream	Total
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0	5.00E-03	1.01E-01	1.06E-01
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

Disclaimer 1 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.



# **Content Declaration: Printed Venom Natural**



Product





Performance



Information



### **Product**



100% Virgin 23# Kraft Paper

30%



4.03E-02 per m<sup>2</sup> tape

### Materials / chemical substances



100% Virgin 20# Kraft Paper

26%



3.50E-02 per m<sup>2</sup> tape



Amorphous Polyolefin Resin

17%



2.25E-02 per m<sup>2</sup> tape





6.72E-03 per m<sup>2</sup> tape



3%



4.06E-03 per m<sup>2</sup> tape

13%



1.70E-02 per m<sup>2</sup> tape



Proprietary Adhesive Additives

5%



per m<sup>2</sup> tape



Typical/standard as printed images vary

### **Packaging**

<u>Distribution/Consumer packaging:</u> Corrugated Box sealed with Water-Activated Tape, 6 rolls per carton, 50 cartons per pallet; 30" x 36" coated paper slip sheet each carton layer; 40"x 48" pallet, stretch wrapped



# **Environmental Performance: Printed Venom Natural**

Company



roduct



Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Мо	dule	
Core environmental impact indicators		Upstream	Core	Downstream	Total
Climate Change - total	kg CO <sub>2</sub> eq.	8.24E-02	8.69E-02	7.54E-02	2.45E-01
Climate Change - fossil	kg CO₂ eq.	1.81E-01	8.69E-02	6.21E-02	3.30E-01
Climate Change - biogenic	kg CO <sub>2</sub> eq.	-9.88E-02	1.57E-05	1.33E-02	-8.55E-02
Climate Change - LULUC	kg CO <sub>2</sub> eq.	5.70E-06	2.29E-06	1.44E-07	8.13E-06
Ozone depletion	kg CFC-11 eq.	1.06E-09	1.07E-12	1.27E-12	1.06E-09
Acidification	Mole of H+ eq.	6.73E-04	5.14E-04	3.84E-04	1.57E-03
Eutrophication, freshwater	kg P eq.	2.16E-05	3.85E-08	5.82E-07	2.22E-05
Eutrophication, marine	kg N eq.	1.99E-04	1.30E-04	1.43E-04	4.72E-04
Eutrophication, terrestrial	mol N eq.	2.21E-03	1.42E-03	1.64E-03	5.27E-03
Photochemical ozone formation	kg NMVOC eq.	4.14E-04	3.89E-04	4.09E-04	1.21E-03
Abiotic depletion potential, minerals & metals <sup>1</sup>	kg Sb eq.	2.22E-07	5.47E-09	2.08E-10	2.28E-07
Abiotic depletion potential, fossil resources <sup>1</sup>	MJ	4.08E+00	1.32E+00	6.38E-01	6.04E+00
Water use <sup>1</sup>	m³ world eq. deprived	2.74E-01	5.18E-03	-6.19E-04	2.79E-01
Indicators describing resource use		Upstream	Core	Downstream	Total
Use of renewable primary energy as energy carrier	MJ	4.34E-01	7.56E-02	9.76E-04	5.11E-01
Use of renewable primary energy resources used as raw materials	MJ	4.14E-02	3.35E-12	2.15E-14	4.14E-02
Total use of renewable primary energy	MJ	4.75E-01	7.56E-02	9.76E-04	5.52E-01
Use of non-renewable primary energy as energy carrier	MJ	4.12E+00	1.32E+00	6.38E-01	6.08E+00
Use of non-renewable primary energy resources used as raw materials	MJ	8.50E-07	8.48E-06	6.91E-14	9.33E-06
Total use of non-renewable primary energy resource	MJ	4.12E+00	1.32E+00	6.38E-01	6.08E+00
Secondary material	kg	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0
Net use of fresh water	m <sup>3</sup>	6.38E-03	1.54E-04	-1.44E-05	6.52E-03



## **Environmental Performance: Printed Venom Natural**

Company



roduct



Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Мо	dule	
Environmental information describing waste cate	gories	Upstream	Core	Downstream	Total
Hazardous waste disposed	kg	5.10E-07	1.69E-11	3.47E-09	5.13E-07
Non-hazardous waste disposed	kg	1.31E-03	1.56E-04	1.95E-02	2.10E-02
Radioactive waste disposed	kg	3.22E-05	6.02E-05	2.00E-07	9.26E-05
Environmental information describing output f	lows	Upstream	Core	Downstream	Total
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0	5.30E-03	1.07E-01	1.12E-01
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0
Disclaimer 1 - The results of this environmental imp	oact indicator shall be used	with care as the u	ncertainties on the	ese results are high	

or as there is limited experienced with the indicator.



# **Content Declaration: 260 Natural**

Company



#### Product



#### Content Declaration



Environmental Performance



Additional Information



### **Product**

### Materials / chemical substances



100% Virgin 25# Kraft Paper

59%



8.53E-02 per m<sup>2</sup> tape



Amorphous Polyolefin Resin

17%



2.49E-02 per m² tape



7%





### Distribution/Consumer packaging:

Corrugated Box sealed with Water-Activated Tape, 6 rolls per carton, 50 cartons per pallet; 30" x 36" coated paper slip sheet each carton layer; 40"x 48" pallet, stretch wrapped





Starch

12%



1.82E-02 per m² tape



Proprietary Adhesive Additives

5%



7.49E-03 per m² tape



# **Environmental Performance: 260 Natural**

Company



roduct



Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Мос	dule	
Core environmental impact indicators		Upstream	Core	Downstream	Total
Climate Change - total	kg CO <sub>2</sub> eq.	6.74E-02	1.10E-01	6.68E-02	2.44E-01
Climate Change - fossil	kg CO <sub>2</sub> eq.	1.78E-01	1.10E-01	5.22E-02	3.40E-01
Climate Change - biogenic	kg CO <sub>2</sub> eq.	-1.11E-01	2.00E-05	1.46E-02	-9.64E-02
Climate Change - LULUC	kg CO <sub>2</sub> eq.	4.76E-06	2.91E-06	1.59E-07	7.83E-06
Ozone depletion	kg CFC-11 eq.	1.57E-09	1.46E-12	9.88E-13	1.57E-09
Acidification	Mole of H+ eq.	6.91E-04	6.55E-04	3.14E-04	1.66E-03
Eutrophication, freshwater	kg P eq.	2.42E-05	4.81E-08	6.35E-07	2.49E-05
Eutrophication, marine	kg N eq.	2.13E-04	1.84E-04	1.15E-04	5.12E-04
Eutrophication, terrestrial	mol N eq.	2.40E-03	2.01E-03	1.34E-03	5.75E-03
Photochemical ozone formation	kg NMVOC eq.	4.31E-04	5.43E-04	3.25E-04	1.30E-03
Abiotic depletion potential, minerals & metals <sup>1</sup>	kg Sb eq.	5.23E-08	6.92E-09	2.29E-10	5.94E-08
Abiotic depletion potential, fossil resources <sup>1</sup>	MJ	3.93E+00	1.65E+00	5.00E-01	6.08E+00
Water use <sup>1</sup>	m³ world eq. deprived	3.00E-01	6.58E-03	-6.81E-04	3.06E-01
Indicators describing resource use		Upstream	Core	Downstream	Total
Use of renewable primary energy as energy carrier	MJ	4.66E-01	9.61E-02	1.07E-03	5.63E-01
Use of renewable primary energy resources used as raw materials	MJ	4.69E-02	4.25E-12	2.36E-14	4.69E-02
Total use of renewable primary energy	MJ	5.13E-01	9.61E-02	1.07E-03	6.10E-01
Use of non-renewable primary energy as energy carrier	MJ	3.96E+00	1.65E+00	5.00E-01	6.11E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1.69E-06	1.08E-05	7.59E-14	1.25E-05
Total use of non-renewable primary energy resource	MJ	3.96E+00	1.65E+00	5.00E-01	6.11E+00
Secondary material	kg	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0
Net use of fresh water	m <sup>3</sup>	7.02E-03	1.96E-04	-1.58E-05	7.20E-03



# **Environmental Performance: 260 Natural**

Company







Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Мо	dule	
Environmental information describing waste cate	gories	Upstream	Core	Downstream	Total
Hazardous waste disposed	kg	3.97E-07	2.15E-11	3.81E-09	4.01E-07
Non-hazardous waste disposed	kg	1.31E-03	1.99E-04	2.14E-02	2.29E-02
Radioactive waste disposed	kg	2.88E-05	7.64E-05	2.20E-07	1.05E-04
Environmental information describing output fl	ows	Upstream	Core	Downstream	Total
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0	5.80E-03	1.18E-01	1.24E-01
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0
Disclaimer 1 - The results of this environmental imp	act indicator shall be used	with care as the u	ncertainties on the	ese results are high	

or as there is limited experienced with the indicator.



# **Content Declaration: Printed 260 Natural**

Company



Product



Content Declaration



Environmental Performance



Additional Information



### **Product**

### Materials / chemical substances



100% Virgin 25# Kraft Paper

55%



8.53E-02 per m<sup>2</sup> tape



Amorphous Polyolefin Resin

16%



2.53E-02 per m² tape



7%



1.01E-02 per m² tape



Starch

12%



1.86E-02 per m² tape



Proprietary Adhesive Additives

5%



7.62E-03 per m² tape



Ink

5%



6.94E-03 per m² tape

Typical/standard as printed images vary

### **Packaging**

### Distribution/Consumer packaging:

Corrugated Box sealed with Water-Activated Tape, 6 rolls per carton, 50 cartons per pallet; 30" x 36" coated paper slip sheet each carton layer; 40"x 48" pallet, stretch wrapped





### **Environmental Performance: Printed 260 Natural**

Company



roduct



Content Declaration



Environmenta Performance



Additional Information



Indicator name	Unit		Мо	dule	
Core environmental impact indicators		Upstream	Core	Downstream	Total
Climate Change - total	kg CO <sub>2</sub> eq.	1.01E-01	1.12E-01	8.59E-02	2.99E-01
Climate Change - fossil	kg CO <sub>2</sub> eq.	2.12E-01	1.12E-01	7.05E-02	3.95E-01
Climate Change - biogenic	kg CO <sub>2</sub> eq.	-1.12E-01	2.00E-05	1.54E-02	-9.66E-02
Climate Change - LULUC	kg CO <sub>2</sub> eq.	6.43E-06	2.91E-06	1.67E-07	9.51E-06
Ozone depletion	kg CFC-11 eq.	1.58E-09	1.50E-12	1.43E-12	1.58E-09
Acidification	Mole of H+ eq.	8.02E-04	6.66E-04	4.35E-04	1.90E-03
Eutrophication, freshwater	kg P eq.	2.43E-05	4.85E-08	6.74E-07	2.50E-05
Eutrophication, marine	kg N eq.	2.32E-04	1.89E-04	1.62E-04	5.83E-04
Eutrophication, terrestrial	mol N eq.	2.62E-03	2.05E-03	1.86E-03	6.53E-03
Photochemical ozone formation	kg NMVOC eq.	4.91E-04	5.56E-04	4.62E-04	1.51E-03
Abiotic depletion potential, minerals & metals <sup>1</sup>	kg Sb eq.	2.52E-07	6.92E-09	2.42E-10	2.59E-07
Abiotic depletion potential, fossil resources <sup>1</sup>	MJ	4.75E+00	1.67E+00	7.20E-01	7.14E+00
Water use <sup>1</sup>	m³ world eq. deprived	3.09E-01	6.58E-03	-7.18E-04	3.15E-01
Indicators describing resource use		Upstream	Core	Downstream	Total
Use of renewable primary energy as energy carrier	MJ	4.94E-01	9.61E-02	1.13E-03	5.91E-01
Use of renewable primary energy resources used as raw materials	MJ	4.69E-02	4.25E-12	2.49E-14	4.69E-02
Total use of renewable primary energy	MJ	5.41E-01	9.61E-02	1.13E-03	6.38E-01
Use of non-renewable primary energy as energy carrier	MJ	4.79E+00	1.67E+00	7.21E-01	7.18E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1.72E-06	1.08E-05	8.01E-14	1.25E-05
Total use of non-renewable primary energy resource	MJ	4.79E+00	1.67E+00	7.21E-01	7.18E+00
Secondary material	kg	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0
Net use of fresh water	m <sup>3</sup>	7.20E-03	1.96E-04	-1.67E-05	7.38E-03



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Environmental Performance



Additional Information



Indicator name	Unit		Мо	dule	
Environmental information describing waste cated	gories	Upstream	Core	Downstream	Total
Hazardous waste disposed	kg	5.57E-07	2.15E-11	4.02E-09	5.61042E-07
Non-hazardous waste disposed	kg	1.51E-03	1.99E-04	2.26E-02	2.43E-02
Radioactive waste disposed	kg	4.21E-05	7.64E-05	2.32E-07	1.19E-04
Environmental information describing output flo	ows	Upstream	Core	Downstream	Total
Components for reuse	kg	0	0	0	0
Material for recycling	kg	0	6.10E-03	1.25E-01	1.31E-01
Materials for energy recovery	kg	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

Disclaimer 1 - The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.



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Additional nformation



Differences Versus Previous Versions

2023-05-16 Version 1

2023-07-05 Version 1.1 Editorial change: Changed contact email, corporate logo.



# Thank You!

