

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

PRODUCT DESCRIPTION:

Our PaperWave®-BIO materials are highly developed special materials, combining the advantages of paper filling and air cushioning. Air is added to the paper filling, thus reducing material usage by approx. 95 – 99%. They are designed to produce air-filled cushions with the help of the APM system. The air cushions produced are mechanically resilient, durable, reusable and easy to dispose.



The film structure consists of a recycled paper layer and a starch blend – sealing layer laminated onto the paper. The ultra-thin sealing layer is made of a strong base of biodegradable and compostable bio film, connected to the recycled paper

layer with natural glue.

SCS Global Services does hereby certify that an independent audit has been completed and conformity to the applicable standard(s) has been confirmed for:

Flöter Verpackungs-Service GmbH

Robert-Bosch-Str. 17, Schwieberdingen, 71701, Germany

This single certificate covers the production and trade of PaperWave Bio air cushion using the transfer system.

The facility(s) are hereby Chain of Custody certified to sell products as:

FSC Mix; FSC Recycled

The assessment has been conducted by SCS Global Services in accordance with the protocols of the Forest Stewardship Council® (FSC®).

FSC Standard: FSC-COC-40-004

Certificate Code: SCS-COC-008086 Trademark License Code: FSC-C162510

Valid from: 16 December 2020 Expiry date: 15 December 2025

The certificate holder must ensure compliance with applicable national and international laws, regulations, standards, and codes of practice. Products derived from such facilities must be clearly labeled as such. The certificate holder must ensure that the products are produced in accordance with the applicable standards and codes of practice. The certificate holder must ensure that the products are produced in accordance with the applicable standards and codes of practice. The certificate holder must ensure that the products are produced in accordance with the applicable standards and codes of practice.

SCS Global Services, Inc. 2000 Powell Street, Ste. 400, Emeryville, CA 94608, USA



TECHNICAL INFORMATION Type PaperWave®-BIO:

Parameter	Value	Unit	Test Method
Film Type	Type PaperWave-Bio	-	-
Material structure	Paper / glue / 100% biodegradable, starch-based sealing layer	-	-
Structure:			
Paper	22	g/m ²	DIN EN ISO 536
Glue	2	g/m ²	
100% biodegradable, starch-based sealing layer	14	µm	DIN 53370 PA 40-300
Thickness approx.	50	g/cm ³	intern
Roll width	420	mm	intern
Roll length	700	m/roll	intern
Plane parallel chamber load (static ¹⁾)	40-60	kg	PA 50-100
Volume stability	4	Weeks	PA 50-300
Visual appearance	brown, paper	-	-

All values subject to the typical tolerances according to GKV and DIN standards.

1) The specified values result from plane parallel measurements of individual pillows and can and may differ with pillow format.

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

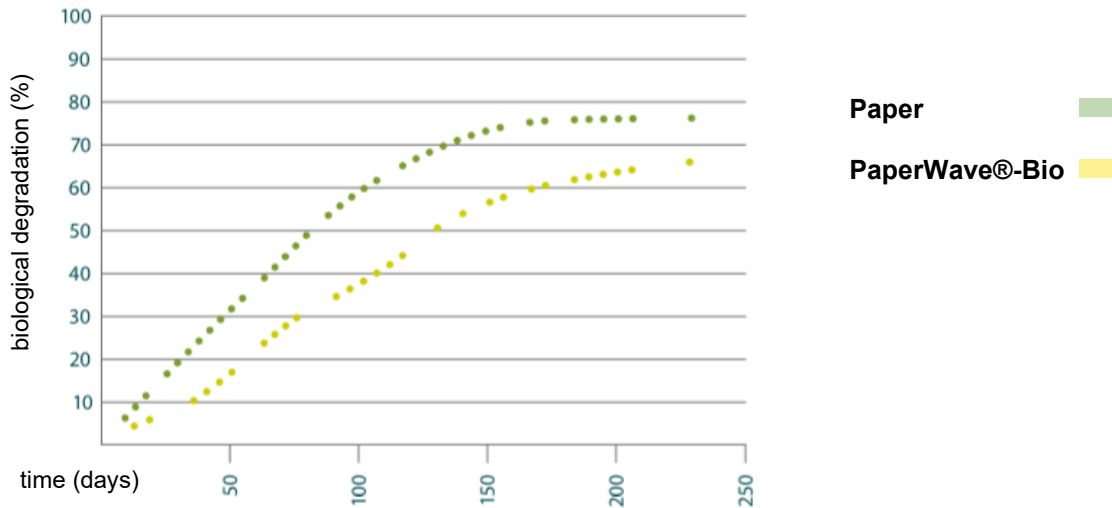
Type PaperWave®-Bio for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-Bio – now your shipping budget can catch a breath!

Biological decomposition in the sea



APPLICATION:

The PaperWave®-Bio air cushion films are used to fill individual cavities occurring in packing units or also to protect goods directly against blunt impacts. Consequently, the valuable packaged goods cannot slip or be damaged during transport. Flöter air cushion systems for the modern mail-order trade are therefore already setting new standards with the idea. The usually freight-intensive cushioning material no longer needs to be made many kilometres away at the place of use but can be produced on site as required with the help of the APM system.

SCOPE OF PROTECTION:

The air cushion principle offers optimal protection against breakage due to blunt forces arising during transport, handling and storage.

DISPOSAL INFORMATION:

Waste paper and bio-waste

DELIVERY FORMAT:

Shipping unit pallet

28 Rolls on a Euro / one-way pallet

Subject to technical changes. The suitability of our products must be validated by the customer in consideration of the local circumstances. The product information provided here may not be construed as a guarantee or promised features; this information represents only recommendations that are based on our many years of experience and testing. Tolerances for dimensions and quantities according to GKV 2007

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

Material safety data sheet

In adherence to Appendix II of the EU 1907/2006 Directive

Doc. no.: Type PaperWave®-BIO Product Information

1. Material / preparation and company identification

- 1.1 Commercial name: Type PaperWave®-BIO
1.2 Product information: Biologically degradable paper/film
1.3 Product use: Protective transport packing
1.4 Supplier: FLÖTER Verpackungs-Service GmbH
Robert-Bosch-Str. 17
71701 Schwieberdingen, Germany
Tel. 07150 / 92396 – 0
Fax: 07150 / 92396 – 80
info@floeter.com
1.5 Emergency information: Tel.: +49 7150 / 92396 – 0 (Mon. – Fri. 8:00 to 17:00)
Tel.: +49 180 - 5304505 [24h] (Regional Emergency Service)

2. Possible hazards:

- 2.1 Classification of the material or mixture as per regulation (EU) No. 1272/2008: No hazardous material or hazardous mixture as per the (EU) Regulation no. 1272/2008
2.2 Label elements: (EU) Regulation no. 1272/2008 CLP:GHS: No hazardous material or hazardous mixture as per the (EU) Regulation no. 1272/2008
2.3 Other hazards:
Explosion hazard: Only in dust state.
Heating: Ensure proper ventilation of the workplace if the product is heated, such as for heat sealing.
Overheating: Melted material can cause burns.
Fire hazard: No known hazards.
Very flammable. There is a danger of fire breaking out due to dripping, burning material.
Dust: Product dust is an explosion hazard.
Sparking: Electrostatic discharge hazard. The product can charge with static electricity, which could lead to ignitable electrical discharge. All product machines must be properly earthed.
Trip hazard: Film on the ground can present a risk of tripping.

3. Composition / information about components:

- 3.1 Chemical characterization: Paper and laminated biologically degradable polymer.
3.2 CAS number: Not defined.
3.3 EINECS number: All ingredients listed.
3.4 EC identification number: Not available.
3.5 Hazardous Ingredients: None.

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

4. First aid measures:

4.1 Description of first aid measures

General information: If irritation or other symptoms occur, consult a physician and submit this safety data sheet

After inhaling: Not applicable

After skin contact: If melted polymers touch the skin, cool immediately with water to remove the material sticking to the skin, and seek a doctor's attention for burn treatment

After eye contact: Treat like any foreign body in the eye; thoroughly rinse with water

After swallowing: No applicable information available; effects are not known; seek a physician if symptoms occur

4.2 The most important acute and delayed occurring symptoms and effects: None known

4.3 Notes about immediate physician's help or special treatment: None known

5. Measures for fire-fighting:

5.1 Extinguisher material

Suitable: Water, dry extinguisher, foam

Unsuitable for safety reasons: Carbon dioxide is not recommended due to its low cooling capabilities
Reflammability hazard.

	Feste, glutbildende Stoffe, z.B. Holz, Textilien	Flüssige oder flüssig werdende Stoffe, z.B. Benzin, Öle	Gasförmige, auch unter Druck stehende Stoffe z.B. Propan	Brennbare Metalle wie z.B. Aluminium, Magnesium	Speiseöle und -Fette (pflanzlich oder tierisch)
Brandklassen					
Pulverlöscher mit Glutbrandpulver	✓	✓	✓		
Pulverlöscher mit Metallbrandpulver				✓	
Schaumlöscher	✓	✓			
Wasserslöscher	✓				
Kohlendioxid-löscher		✓			
Fettbrandlöscher	✓	✓			✓

5.2 Special hazards from the material or mixture

Hazardous combustion products: Upon combustion, formation of carbon dioxide/carbon monoxide. Depending upon conditions, substances such as tetrahydrofurane may also be formed.

5.3 Notes on fire-fighting

Fire-fighting actions: Block the hazardous area and keep non-participants away. Rinse the fire area, cool down and prevent re-ignition.

Special protective equipment for fire-fighting: Fire department staff must wear suitable protective clothing; if there is a massive product release, use respiratory protection devices which do not use ambient air

6. Measures for unintended release:

6.1 Staff-related preventive measures, protective equipment, and procedures to use in emergencies:

One can trip on any material lying on the ground. Mechanically sweep up and put in suitable containers for disposal.

6.2 Environmental protection measures:

Disposal is done following local regulations for biologically degradable plastics, such as compost bins.

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

6.3 Methods and materials for retention and cleaning: Gather material into suitable and properly labelled containers. See also Chapter 13, “Notes on Disposal” for further information.

6.4 References to other sections:
If necessary, reference is made to other sections in the prior subsections.

7. Handling and storage

7.1 Protective measures for safe handling:

Smoking, open flames or ignition sources in work areas and storage areas are to be avoided. Avoid dust build-up through mechanical processes.

Melted product may not go into the eyes, the skin or clothing. Inhaling vapours which could occur during processing must be avoided. See Section 8, “Limiting and monitoring exposure / personal protective equipment”

7.2 Conditions for safe storage with consideration of environmental compatibilities:

Storage temperature:	≤23°C
Transport temperature:	Ambient temperature
Loading and unloading temperature:	Ambient temperature
Storage and transport pressure:	Atmospheric
Relative humidity:	As dry as possible
Electrostatic discharge hazard:	Take measures against electrostatic discharge.
Usual shipping method:	On pallets in lorries
Safe storage:	Store on pallets in dry, enclosed rooms with a solid floor. Avoid direct sun radiation and heat.

7.3 Specific end uses

Environmental conditions can influence processing on machines. Avoid great temperature variations, avoid heat and cool-down.

8. Limiting and monitoring exposure / personal protective equipment

8.1 Parameters to be monitored:

No limit values established

8.2 Restriction and monitoring exposure

Technical control measures: General ventilation and exhaust should be sufficient for the planned processing.

Individual protective measures: If contact with hot material is possible, wear heat-resistant gloves, arm protection and face protection. If necessary, use measures for suction, among other things, or wear respiratory protection.

8.3 Restriction and monitoring environmental exposure

See Section 7, “Handling and storage” and Section 13 “Disposal instructions for measures to prevent excessive environmental exposure during use and waste disposal”

9. Physical and chemical properties:

9.1 Information about basic physical and chemical properties:

Appearance	
- Aggregate status:	Solid materials
- Colour:	brown
Smell:	Slightly characteristic smell during processing
Smell threshold:	none
pH:	Not applicable
Boiling point:	Decomposition temperature: >300°C
Melting point:	biofilm: Softening > 65 °C
Freezing point	Not applicable

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

Flash point:	Not applicable
Vaporisation speed:	Not applicable
Flammability:	No
Explosion limits:	Not applicable
Vapour pressure:	negligible
Rel. vapour density:	Not applicable
Rel. density	Paper: 20 g/m ² ; biofilm: 1,28 g/cm ³
Water solubility	Practically insoluble
Partition coefficient:	No data available
Self-ignition temperature:	>300°C
Decomposition temperature:	No data available
Kinematic viscosity	Not applicable at room temperature
Explosive properties:	Explosive in the form of powder or dust in contact with open flames, sparks and electrostatic discharges. Electrical equipment and lights should be protected in accordance with applicable standards in the case of possible dust accumulations in order to prevent dust coming into contact with hot surfaces, sparks or other ignition sources.
Oxidising properties:	No

9.2 Other information

The physical data in Section 9 correspond to typical values for this product and should not be seen as a product specification.

10. Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability:	The product is stable No special information known under normal storage conditions and normal use.
10.3 Possible hazardous reactions:	No data available
10.4 Conditions to be avoided:	Direct sunlight, avoid extreme heat and humidity. Dangerous gases could be released upon heating.
10.5 Incompatible materials:	None known
10.6 Hazardous decomposition products:	Carbon monoxide, tetrahydrofurane

11. Toxicology information:

11.1 Information about toxic effects

Acute toxicity:	No relevant information available.
Skin irritation or destruction:	Not skin-irritating even after longer skin contact. Injuries only due to mechanical effects.
Severe eye injury or irritation:	Solids or dust can lead to injury to the cornea due to mechanical effects. Increased temperatures can lead to vapour concentrations which can result in eye irritation.
Sensitisation:	For sensitisation of the skin and respiratory tract: No relevant information available.
Systemic target organ toxicity (single exposure):	No relevant information available.
Systemic target organ toxicity (repeated exposure):	No relevant information available.
Carcinogenicity:	No relevant information available.
Teratogenicity:	No relevant information available.
Reproduction toxicity:	No relevant information available.
Mutagenicity:	No relevant information available.

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--

PRODUCT INFORMATION

Type PaperWave®-BIO for APM

Unrivalled environmental awareness.
In shipping, on the ground and in water.



Flöter PaperWave®-BIO – now your shipping budget can catch a breath!

Aspiration hazard: Does not present an aspiration hazard due to the physical properties and available information

12. Environmental information:

- 12.1 Toxicity: The product is completely biologically degradable with intended handling, no acute toxicity expected.
- 12.2 Persistence/degradability: The product is completely biologically degradable as per DIN EN 13432.
- 12.3 Bioaccumulation potential: -
- 12.4 Soil mobility: -
- 12.5 Results of the PBT and vPvB assessment: No data available
- 12.6 Other damaging effect: No relevant information available.

13. Information about disposal:

Recommended disposal: Composting*, landfill site, incineration

* The product is completely biologically degradable. The opportunity for composting depends on the final product form (layer thickness) and concentration. The rules for individual EU countries are not uniform in this regard. Therefore note the local regulations.

14. Information about transport:

Not a hazardous good and no special classification for land transport (ADR/RID), for ocean-going ship transport (IMO - IMDG code) or for air transport (IATA-DGR)

15. Legal provisions:

The product is not a hazardous material in the sense of the Chemicals Law or Hazardous Materials Regulation in the current valid versions.

16. Other information:

Subject to technical changes without notice. The use of our products in the local conditions must be validated by the customer. The information provided in the product information is not to be regarded as a guarantee or assured property, but only to give recommendations based on our many years of experience and testing. Climactic effects, contamination and environmental influences can sometimes have a significant influence on material properties. Tolerances in terms of size and quantity in accordance with GKV 2007

The information is based on the current state of knowledge and experience. The safety data sheet describes the product in regard to safety requirements. The information does not have the meaning of characteristics assurance.

Responsible: Marco Stahl	Revision number: 02 Replaced: 01	Approved by: Marc Rapp	Date created: 01.04.2020 Date changed: 13.01.2022
-----------------------------	-------------------------------------	---------------------------	--