

tesa[®] 4513

Superior paper packaging tape

Internal launch presentation – tesa[®] 4513



INTERNAL
USE ONLY

CONFIDENTIAL
INFORMATION

tesa[®] 4513
Superior paper
packaging tape



Agenda

1. Executive summary

- Our Motivation / Our Offer
- Product design
- tesa® 4513 – Sustainability contribution
- tesa® 4513 – In a nutshell
- Paper packaging tapes assortment
- Competition
- Communication material

2. Appendix

- Product features
- Paper packaging tapes assortment
- Sustainable contribution
- Product roadmap





1. Executive summary

Our motivation

- Expand our range of sustainable packaging tapes to support our customers meeting their sustainability goals.
- Enlarge our product offering for paper-based packaging tapes to grant our customers a stable and reliable supply chain.
- Offer reliable and competitive products for those customers willing to transition from filmic-based to paper-based packaging tapes.
- Strive for responsible raw material sourcing by using FSC™-certified paper whenever possible. On top of that, we continue developing packaging tapes which can be disposed of together with the cardboard in the paper bin (recycling-friendly tape according to INGEDE method 12).



Our offer

- tesa® 4513 is a paper-based packaging tape featuring a premium paper backing with a silicone-free release coat and high-performing synthetic rubber adhesive.
- The paper backing of tesa® 4513 is made with paper from well managed FSC™-certified forests and other controlled sources.
- tesa® 4513 can be disposed together with the box into the paper bin without endangering the cardboard recycling process (INGEDE method 12) and its production process is solvent-free.
- The combination of this premium paper backing, and our unique synthetic rubber adhesive makes tesa® 4513 the perfect solution for light- and medium-weight packaging applications (max. 15 kg).



Product design

	Unit	tesa® 4513
Backing		FSC™-certified paper
Adhesive		Synthetic rubber
Color		●
Backing thickness	µm	80 µm
Total thickness	µm	105 µm
Adhesion to steel	N/cm	8.5
Tensile strength	N/cm	70
Elongation at break	%	3



For demanding customers ...

- tesa® 4513 features a premium paper backing with remarkable technical properties such as its tensile strength and its resistance to impacts. Thanks to the silicone-free release coat, an excellent printability is granted.
- The high-performing synthetic rubber adhesive ensures a secure seal on a wide variety of cardboard qualities. Thanks to the high initial tack, a tamper-evident effect is achieved when removing the tape from the cardboard.
- tesa® 4513 is the perfect tape for light- and medium-weight packaging applications (max. 15 kg) for those customers looking for a reliable product alternative to filmic-based packaging tapes.



...with sustainable goals.

- The paper backing of tesa[®] 4513 is made with paper from well managed FSC[™]-certified forests and other controlled sources.



- tesa[®] 4513 is a recycling-friendly packaging tape, as it can be disposed with the carton into the paper bin without endangering the cardboard recycling process (certified).
- The production process for tesa[®] 4513 is solvent-free.



tesa[®] 4513

Sustainable contribution

- ✓ FSC[™]-certified paper backing.
- ✓ Recycling-friendly packaging tape according to INGEDE method 12.
- ✓ Solvent-free production process.
- ✓ 100% recycled paper core.



In a nutshell

- ! Premium paper packaging tape with a well-proven performance.
- ! Packaging tape with sustainable contribution (FSC™-certified paper / recycling-friendly acc. to INGEDE / solvent-free production).
- ! Perfect solution for brand showcase and advertising purposes (printable packaging tape).
- ! Ideal solution for customers willing to transition from filmic-based to paper-based packaging tapes.



Product Offering

Product offering – Trade & Packaging Partners

	Premium CST (PVC / PCR PET / PLA)			Commodity CST (BOPP)			Paper CST			Inner packaging		
Carton weight	Heavy	Medium	Light	Heavy	Medium	Light	Heavy	Medium	Light			
Specialty Offer Unique product with special properties, hardly competition	4122	60400*	/	64044	4195	/	60013*	4313* PV12	4313* PV10	/	60404	
Best Value Offer Highest Perceived Product Value, very convenient to sell	/	4124	60412*	4100	/	4024	64014	/	4513*	60408*	/	62204
Penetration Offer Focus On Volume, gaining share	/	/	4120	/	4089	4280	/	/	/	4713*	/	4204 PV5

* Products with sustainable contribution



2. Appendix



Product features

Appendix

Product features



Product Name		tesa® 4513
Backing		FSC™-certified paper
Adhesive		Synthetic rubber
Color		Havana
Backing thickness	µm	105
Total thickness	µm	80
Adhesion to steel	N/cm	8.5
Tensile strength	N/cm	70
Elongation at break	%	3



Suitable medium-weight applications (max. 15 kg)



Very strong adhesion and initial tack (tamper evidence)



Manual & automatic application



Recycling-friendly according to INGEDE method 12



Features



Benefit



Proof

PERFORMANCE

1) Very strong adhesion and initial tack



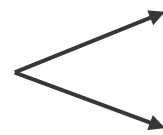
Reliable seal on different cardboard qualities

2) Strong & robust paper backing



Highly resistant against shock impacts

3) Excellent-performing release coating



Secure storage under challenging conditions

Printable with all kinds of ink systems



External printing tests



R&D & CSC technical evaluation

SUSTAINABILITY

5) FSC™-certified paper



Responsible raw material management



FSC™ Mix Label

6) Recycling-friendly tape



It can be disposed with the cardboard



INGEDE method 12

7) 100% solvent-free coating



Production process with sust. contribution



Standard tesa coating process



Appendix

Pricing, logistical data and launching quantities



Product	IBNR	NART	Length [m]	Width [mm]	Color	Stock/ Non-stock	Lead Time
tesa® 4513	04513	04513-00000-00	50	50	15	Stock	14 days
	04513	04513-00001-00	50	75	15	Stock	14 days
	04513	04513-00002-00	500	50	15	Stock	14 days
	04513	04513-00003-00	500	150	15	Stock	14 days

Appendix

PI sheet & Certificates



tesa® 4513 Superior paper packaging tape Product Information

Product Features

- Robust backing material
- Very high adhesion and initial tack
- Can be torn by hand
- Printable with all types of inks

Sustainable Aspects

- The paper backing is made with paper from well-managed forests and other controlled sources
- Recycling-friendly according to INGEDE method 12 (100/100)
- Solvent-free production process

Product Description

tesa® 4513 is a paper-based packaging tape featuring a robust paper backing and an excellent-performing synthetic rubber adhesive. The paper backing of tesa® 4513 is made with paper from well-managed forests and other controlled sources. Thanks to the silicone-free release coat, a very good printability with all types of ink systems is secured (externally tested). The synthetic rubber adhesive system provides very high adhesion and initial tack on a wide variety of carton qualities. tesa® 4513 is the perfect solution for light- and medium-weight packaging applications (max. 15 kg) where an excellent performance is required.

Application Fields

- Ideal for the sealing of cardboard boxes up to 15 kg
- Suitable for manual and automatic applications
- Printable with all types of ink systems

Technical Information (average values)

The values in this section should be considered representative or typical only and should not be used for specification purposes.

Product Construction

- | | | | |
|--------------------|------------------|-------------------|--------|
| • Backing material | Paper | • Total thickness | 105 µm |
| • Type of adhesive | synthetic rubber | | |

Product Assortment

- | | |
|--------------------|--------|
| • Available colors | Havana |
|--------------------|--------|

For latest information on this product please visit
<http://t.esa.com/?ip=04513>

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CERTIFICATE

of achievement
FSC® Chain-of-Custody

TÜV NORD CERT GmbH hereby certifies that an independent evaluation in accordance with FSC®-STD-40-004, V3-0; FSC®-STD-50-001, V2-0 was conducted on behalf of

tesa SE
Hugo-Kirchberg-Straße 1
22848 Norderstedt
Germany

for the following scope:

Trade with Specialty Paper (FSC 100 %, FSC Mix, FSC Controlled Wood) – Transfer System

This company is entitled to use Forest Stewardship Council® (FSC) trademark for the above mentioned products and / or services

FSC „Controlled Wood“ Code.: TUEV-CW-001480
FSC Certificate Registration No.: TUEV-COC-001480
TUEV Certificate Registration No.: 44 751 190771 / 44 255 190771
Audit Report No. 3524 5681 / 3524 5680

Valid from 2019-05-19

Valid until 2024-05-18

The validity of this certificate shall be verified on info.fsc.org

Heinz Joachim Schaffrath
Certification Body
at TÜV NORD CERT GmbH

Essen, 2019-05-19

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits. This certificate remains the property of TÜV NORD CERT GmbH and shall be returned upon request. This certificate itself does not constitute evidence that a particular product supplied by the certificate holder is FSC®-certified (or FSC® Controlled Wood). Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required FSC® claim is clearly stated on invoices and shipping documents. Validity can be verified at <https://www.tuev-nord.de/de/unternehmen/zertifizierung/zertifikationsdatenbank>.

TÜV NORD CERT GmbH

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45141 Essen

www.tuev-nord-cert.com



Accredited by ASI for certification against voluntary sustainability standards.

PMV – Technische Universität Darmstadt

Technische Universität Darmstadt
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Assessment on Recyclability of Single side adhesive tape tesa® 4513 Certificate

Customer: tesa SE, Hugo-Kirchberg-Str. 1, 22848 Norderstedt, Germany

Date of Testing: 2022-08-04

Order number: PMV-22-249

Task

The recyclability of a single side adhesive tape was tested according to the INGEDE method 12 (screenability of adhesive applications).

Testmaterial

The customer delivered one roll of an adhesive tape. 100 cm² of the adhesive tape have been combined with a reference copy paper. This sample has been treated according to INGEDE 12
Product type: pressure sensitive adhesive tape, 92 g/m²
Product label: tesa® 4513

Results

All results of the recyclability trials were documented in the INGEDE data sheet. Calculations and scoring was carried out according to ERPC (European Recovered Paper Council), 15th of March 2018. The obtained results were:

RS _B (stickies < 2000 µm):	20 (best possible value: 20)
RS _A (area after screening):	80 (best possible value: 80)
Total scoring:	100 (best possible value: 100)

Therefore, the removability of the tested adhesive application is evaluated by PMV as:

„good“

Darmstadt, 4th of August 2022

FACHGEBIET PAPIERFABRIKATION UND
MECHANISCHE VERFAHRENSTECHNIK
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Paper packaging tape assortment

Paper Packaging Tapes – Product Positioning

tesa® 60013

- Very high adhesion and initial tack
- Fiberglass reinforced paper backing
- Perfect solution for heavy-duty packaging applications



> 20 kg

tesa® 4313 PV12

- High adhesion and initial tack
- Perfect solution for medium-weight applications
- Printable with all types of inks

tesa®
60013

FSC
www.fsc.org
FSC Certified
The mark of responsible forestry

tesa® 4313 PV12



Max. 20 kg

tesa® 60408 / tesa® 4513 / tesa® 4313 PV10

- Very good adhesion and initial tack
- Suitable for medium-weight applications
- Printable with all types of inks






tesa® 60408 tesa® 4513 tesa® 4313 PV10

NEW



Max. 15 kg

tesa® 4713

- Good adhesion and initial tack
- Suitable for light weight applications
- Printable with certain type of inks

FSC
www.fsc.org
FSC Certified
The mark of responsible forestry

tesa® 4713



Max. 10 kg



Sustainable contribution

Recycling-friendliness

Why INGEDE method 12?

INGEDE method 12 is the only standard available to determine the recycling behavior of PSAs (e.g. labels and stickers). The main goal of INGEDE activities / methods is to safeguard and improve paper / cardboard recyclability

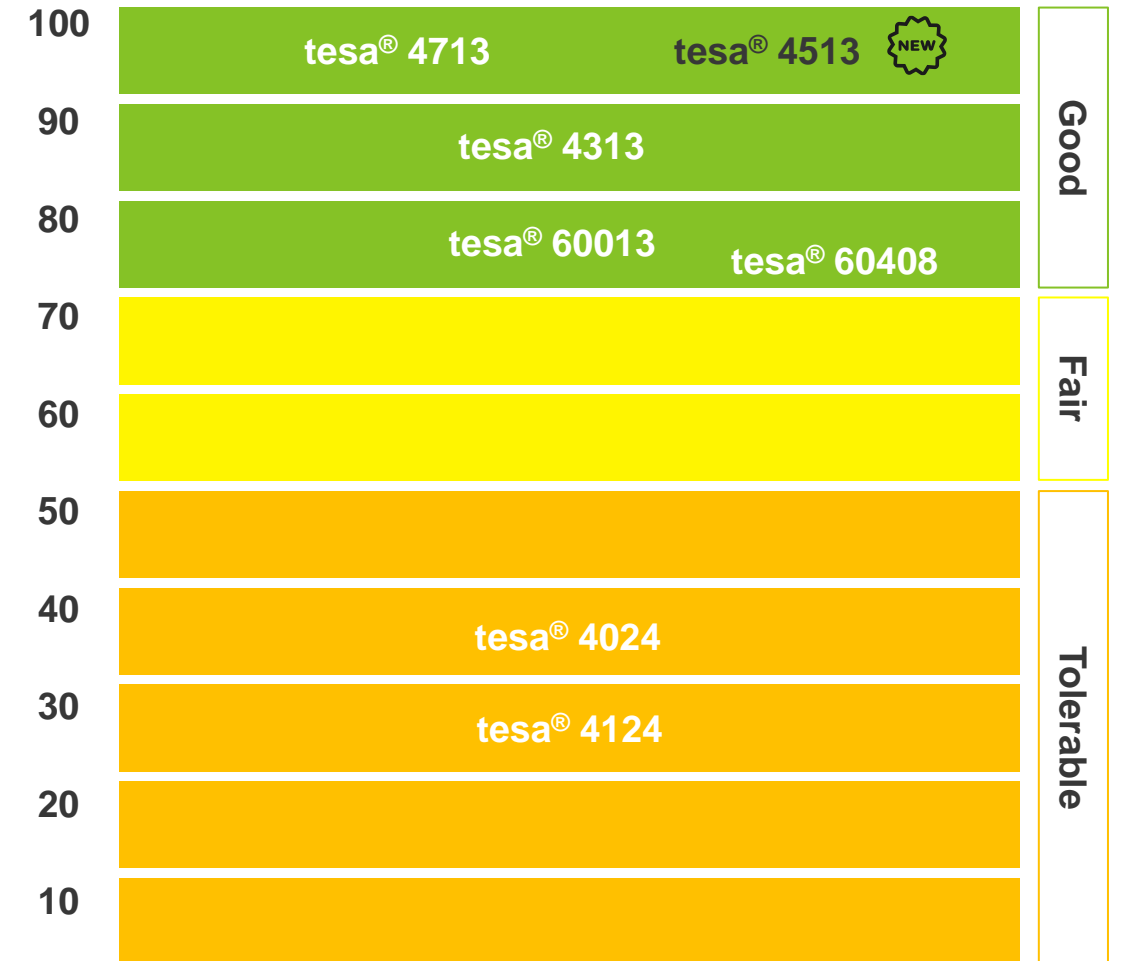
The INGEDE method 12 provides an assessment about the removability of adhesive applications during the paper recycling process

During the paper recycling process, adhesive applications disintegrate during pulping to stickies (also known as adhesive residues)

This method provides a removability score between -20 and 100 points depending on how good the adhesive residues can be removed



Results – INGEDE method 12



Packaging tapes contributing to sustainability

Filmic-based packaging tapes



tesa® 60412

Max. 30 kg



tesa® 60400

Max. 30 kg

Paper-based packaging tapes



tesa® 4713

Max. 10 kg



tesa® 4513

Max. 15 kg



tesa® 4313

Max. 15 kg



tesa® 60408

Max. 20 kg



tesa® 60013

Over 20 kg

As the market leader for packaging tapes, we are aware of the big contribution that we can make when developing new products.



Product roadmap

tesa® 4713
Standard Paper CST



January
2021

tesa® 4313
Premium paper CST



October
2021

tesa® 60412
Recycled PET CST



May
2022

tesa® 60408
Bio-Based Paper



October
2022

April
2021



tesa® 60400
Bio & Strong



tesa® 60013
Filament CST



tesa® 4513
Superior Paper CST



tesa® 60013
FSC Relaunch

We help our customers to realize their sustainability agenda and we do so by contributing with our innovative packaging tapes.



Thank you for your attention!