



Our motivation	Our offer	tesa [®] 60408	tesa [®] 4513		Summary and overview
		tesa [®] 4713	tesa [®] 4313	tesa [®] 60013	
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Packaging Tapes with Sustainable Contribution	- 3 -	Confidential	Customer Presentation

Our motivation

We have set ourselves the goal of continuously developing innovative packaging tapes that contribute to our customers' sustainability agenda.

We are committed to significantly enhancing the product sustainability for our packaging tape assortment by increasing the use of bio-based and recycled materials such as natural rubber and paper.

For our packaging tapes, we incorporate step by step responsibly sourced raw materials as well as improvements on the end of their useful life (recycling-friendly tapes).

Finally, we want to continue showing our customers that packaging tapes can contribute to sustainability and provide a reliable performance at the same time.







Our Ambition We have ...

... set our sights on introducing innovative solutions that allow our customers to make their own processes and products more sustainable.

#forasustainablefuture





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Packaging Tapes with Sustainable Contribution	- 6 -	Customer Presentation



Packaging tapes contributing to sustainability

Filmic-based packaging tapes

Paper-based packaging tapes

tesa [®] 60412	tesa® 60400	tesa® 4713	tesa® 4513	tesa® 4313	tesa® 60408	tesa® 60013
Max.30kg	Max.30kg	Max.10 kg	Max.15kg	Max.15 kg	Max.20 kg	Over 20 kg
70% PCR PET backing	PLA backing from 100% renewable feedstock	Fine crepe paper from well managed and other controlled source	Robust paper backing from well managed and other controlled source	Paper backing from well managed and other controlled source	Strong, robust and highly conformable creped paper backing from well managed and other controlled source	Paper backing with fiber-glass scrim reinforcement
Water-born acrylic adhesive	Natural rubber adhesive with natural biobased resin	Natural rubber adhesive	Synthetic rubber adhesive	Synthetic rubber adhesive	Natural rubber adhesive with bio-based resin	Synthetic rubber adhesive with tamper evident effect
Recycling friendly	98% bio-based carbon content for lower CO_2 emissions	Recycling friendly	Recycling friendly Silicone free coating	Recycling friendly Silicone free coating	Recycling friendly Silicone free coating 92% bio-based carbon content for lower CO ₂ emissions	Recycling friendly
Printable with all ink systems	Printable	Printable (Corona needed)	Printable with all ink systems	Printable with all ink systems	Printable with all ink systems	Not printable
100% recycled core	100% recycled core	100% recycled core	100% recycled core	100% recycled core	100% recycled core	100% recycled core
High performance with recycled content and high sustainability contribution	High performance with recycled content and high sustainability contribution	Standard paper packaging tape with basic sustainability contribution		ging tape with standard y contribution	High performing paper packaging tape with <u>high</u> sustainability contribution	Paper for heavy duty with basic sustainable contribution
Packaging Tapes with Sustainab	le Contribution	And in case of the local division of the loc		- 7 -	A STREET	Customer Presentation



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Packaging Tapes with Sustainable Contribution	- 8 -	Customer Presentation

tesa[®] 60408 is a premium paper packaging tape based on a FSCTM-certified paper backing and a natural rubber adhesive with a 100% bio-based resin.

The premium paper backing material chosen for tesa[®] 60408 in combination with a well-performing natural rubber adhesive makes this product the perfect solution for light- and medium-weight packaging applications (max. 20 kg).

tesa[®] 60408 has a total bio-based carbon content of 92% and it has been awarded with the highest biocarbon content rating from DIN CERTCO (> 85%).

With tesa[®] 60408 we do not only offer a packaging tape with an excellent performance, but also advanced alternative contributing to sustainability.







For challenging customers...

tesa[®] 60408 is a paper packaging tape featuring a premium paper backing and a well functioning natural rubber adhesive.

The premium paper backing of tesa[®] 60408 is tear-resistant with a high tensile strength. Thanks to the silicone-free release coat a very good printability with all types of ink systems is secured (externally tested).

The well-performing natural rubber adhesive provides strong adhesion and good initial tack on a wide variety of carton qualities.

tesa[®] 60408 is the perfect solution for light- and medium-weight packaging applications (max. 20 kg) and it is suitable for manual and automatic dispensers.

...striving for sustainability.

The premium paper backing used for tesa[®] 60408 is made with paper from well managed FSCTM-certified forests and other controlled sources.

The adhesive system of tesa[®] 60408 is based on a natural rubber adhesive featuring a 100% bio-based resin.

This product is based on a solvent-free coating technology and thanks to the smart choice of raw materials and its outstanding product design, our new tesa[®] 60408 has a total bio-based carbon content of 92% (certified by DIN CERTCO).

tesa[®] 60408 is a recycling-friendly packaging tape, as it can be disposed with the carton in the paper bin without endangering the cardboard recycling process (according to INGEDE method 12 certification).



tesa® 60408 Product Design



High performing paper packaging tape with the highest sustainability contribution from the complete packaging assortment!

* Backing thickness

Packaging Tapes with Sustainable Contribution



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Packaging Tapes with Sustainable Contribution	- 13 -	Customer Presentation

- 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 FSCTM-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).



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 carboard 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.



...striving for sustainability.

- The paper backing of tesa[®] 4513 is made with paper from well managed FSCTM-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.



Packaging Tapes with Sustainable Contribution

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tesa® 4513 Product Design



Superior paper packaging tape with good performance and with the standard sustainability contribution.

* Backing thickness

Packaging Tapes with Sustainable Contribution



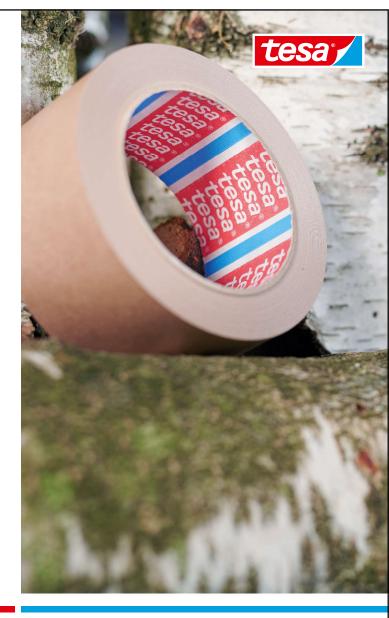
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- tesa[®] 4713 is a paper-based packaging tape featuring a paper backing with a natural rubber adhesive.
- The paper backing of tesa[®] 4713 is made with paper from well managed FSCTM-certified forests and other controlled sources.
- tesa[®] 4713 can 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.
- tesa[®] 4713 is the perfect tape for light-weight packaging applications (max. 10 kg) for those customers looking for a reliable product alternative to filmicbased packaging tapes.
- tesa[®] 4713 is printable for most ink systems (with a Corona pre-treatment)
- Suitable for customer that are starting the transition towards sustainability



tesa® 4713 Product Design



Standard paper packaging tape with the basic sustainability contribution.

* Backing thickness

Packaging Tapes with Sustainable Contribution

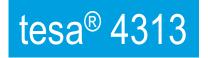


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Packaging Tapes with Sustainable Contribution	- 21 -	Customer Presentation



- tesa[®] 4313 is a premium packaging tape featuring a paper backing with a silicone-free release coat and a solvent-free synthetic rubber adhesive
- The premium backing of tesa[®] 4313 is made with paper from well managed FSC[®]-certified forests and other controlled sources
- tesa[®] 4313 can be disposed together with the box in the blue bin without endangering the cardboard recycling process (certified)
- tesa[®] 4313 is available in two different coating weights (PV10 and PV12) and in two different colors (havana and white)



Packaging Tapes with Sustainable Contribution

tesa® 4313 (PV12) Product Design

Backing	Ad	hesive	Color	,	Thickness
FSC [™] -certified paper	Syntet	hic rubber	Havana and	White	125 μm 95 μm*
Adhesion stee	el	Tensile	strength	Elon	gation at break
9.5 N/cm		60 N/cm			6%

tesa

Premium paper packaging tape with outstanding performance and with the standard sustainability contribution.

* Backing thickness

Packaging Tapes with Sustainable Contribution

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Packaging Tapes with Sustainable Contribution	- 24 -	Customer Presentation

- tesa[®] 60013 is a self-adhesive packaging tape with a siliconized fiberglass reinforced kraft paper backing and a synthetic rubber adhesive system
- The high-performing adhesive system in combination with the fiberglass reinforced paper backing makes tesa[®] 60013 the perfect alternative for heavy-duty packaging applications (> 25 kg)
- tesa[®] 60013 not only provides an outstanding performance but it is also a packaging tape with a sustainable contribution, as it can be disposed together with the box without endangering the cardboard recycling process (certified)
- The highly cohesive and aggressive adhesive system ensures a tamperevident seal when removing this tape from the box



Packaging Tapes with Sustainable Contribution

tesa® 60013 Product Design



Standard paper packaging tape with the basic sustainability contribution.

* Backing thickness

Packaging Tapes with Sustainable Contribution



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Packaging Tapes with Sustainable Contribution	- 27 -	Customer Presentation

tesa[®] 60412 is a general-purpose packaging tape based on a 70% Post-Consumer Recycled (PCR) PET backing and a waterborne acrylic adhesive.

tesa[®] 60412 features a strong backing material with excellent mechanical properties and an acrylic adhesive, making this product the perfect solution for light- and medium-weight packaging applications (max. 30 kg).

With tesa[®] 60412 we do not only offer a packaging tape with an outstanding performance, but also an advanced alternative contributing to sustainability.

This product has a silent and smooth unwinding, and it is printable with all types of ink systems.



Packaging Tapes with Sustainable Contribution





For demanding customers...

tesa[®] 60412 is a high-quality packaging tape featuring a 36µm recycled PET backing (70% recycled content) and a well-balanced and high-performing waterborne acrylic.

The recycled PET backing provides an excellent thermal stability and tensile strength. It also has excellent moisture barrier properties, good clarity and an outstanding chemical stability.

The high-performing waterborne adhesive system ensures a secure seal on a wide variety of cardboard qualities.

The combination of recycled PET and waterborne acrylic ensures a low noise unwind and an excellent printability with all types of ink systems.

tesa[®] 60412 is the perfect solution for light- and medium-weight packaging applications (<30 kg) where a premium performance is required.

...striving for sustainability.

The backing for tesa[®] 60412 is made from PET film with 70% Post-Consumer Recycled (PCR) content. With the use of recycled PET as backing material we contribute to the environment by increasing the use of recycled content.

With tesa[®] 60412 we want to support our customers to reduce their use of non-recycled fossil fuel-based plastics as part of their packaging solutions.

tesa[®] 60412 is a recycling-friendly packaging tape, as it can be disposed with the carton in the paper bin without endangering the cardboard recycling process (INGEDE method 12 certification).

The production process for tesa® 60412 is solvent-free.



tesa® 60412 Product Design



High performance filmic packaging tape with recycled content in the backing and good sustainability contribution.

* Backing thickness

Packaging Tapes with Sustainable Contribution



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Packaging Tapes with Sustainable Contribution	- 32 -	Customer Presentation

Very high bio-based carbon content measured in the industry

- Total bio-based carbon content of 98%
- Very high bio-based rating from DIN-CERTCO and TÜV AUSTRIA
- Unique product in the packaging tape market

Lower CO₂ footprint compared to fossil-based packaging tapes

- Lower greenhouse emissions throughout the whole value chain
- Excellent alternative for fossil-based packaging tapes
- Solvent-free production process

Outstanding performance

- Perfect solution for medium-weight applications (15-30 kg)
- Strong and reliable seal on all cardboard surfaces
- Secure storage under challenging conditions



Packaging Tapes with Sustainable Contribution

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\dots lower CO₂ emissions

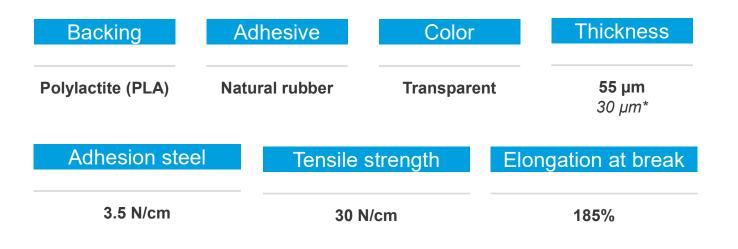
The use of PLA instead of fossil-based BOPP or PVC leads to a potential $CO_{2eq.}$ reduction for the backing material of:

- 15-20%* CO_{2eq.} reduction when replacing BOPP by PLA as the backing material**
- 30-35%* CO_{2eq.} reduction when replacing PVC by PLA as the backing material**

*The savings potential of the overall product considering specific information of the film manufacturing process will be lower, but remains to be determined

** Carbon footprint calculations refer to cradle-to-grave systems evaluated according to IPCC AR5 GWP100 (incl. land use change) and take into account generic information on film production

tesa® 60400 Product Design



High performing tape with 100% backing material made from renewable resources and a total of 98% bio-based carbon content.

* Backing thickness

Packaging Tapes with Sustainable Contribution



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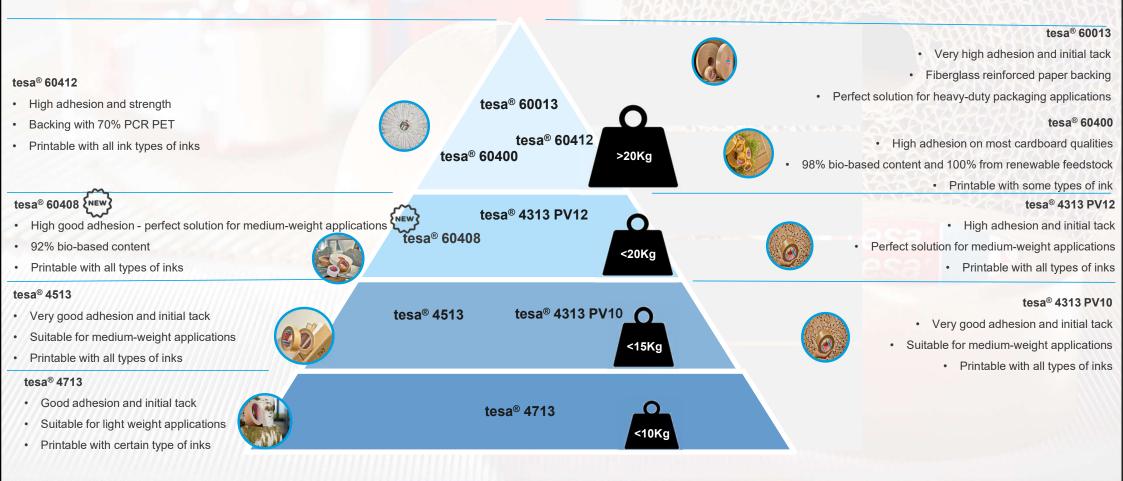
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our innovative packaging tapes.

Customer Presentation

Product Positioning for Packaging Tapes





Thank you

Sergiu Crisan

Region Europe Category Manager Packaging and Repair Tapes *Industrial Trade and Converting* Learn more about our company <u>www.tesa.com</u>





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