

Product-Specifications

for Glassine ECHO[®]

General Information:

Glassine paper is a pure cellulose paper. The main raw material is pulp which comes from modern thinning and is subject to strict controls and requirements. This raw material is supplied on short ways to our mill in Ober-Schmitten. Using water and energy only, we convert the pulp to Glassine paper. Transparency and grease resistance are achieved by a special mechanical treatment. Glassine ECHO[®] does not contain any waste paper. According to recommendation XXXVI of BfR and the American FDA, most of our Glassine ECHO[®] qualities are approved for direct contact with fatty, dry and moistly foodstuffs. Furthermore Glassine ECHO[®] does comply with the European regulations for packaging materials. It is neutral to taste and smell and free of chlorine and acid. Glassine ECHO[®] has no closed, but a high dense surface what creates a good breathability. It is the most dense paper worldwide. Glassine ECHO[®] is not only recyclable, but also compostable.

We produce bleached, unbleached, opaque and coloured Glassine papers in substances of min. 25 g/m² up to 95 g/m² (some qualities up to 115 g/m²), plain or embossed (B-Linen, Silkworm or Spider Web). For these qualities we have two paper machines with a maximum trim of 1.500 mm and 1.700 mm.

We are able to prepare small bobines of 20 mm up to rolls in maximum width of 1.500 mm and 1.700 mm. Furthermore we prepare sheets in size of min. 100 x 100 mm – our normal sheet size is 700 x 1.000 mm.

Our prices depend on requested quality, quantity (per order / per anno), substance, roll widths or sheet sizes, special treatments during manufacturing process, etc.

Spezialpapierfabrik Oberschmitten GmbH is certified according to DIN ISO 9001:2000, DIN ISO 14001:2004 and DIN ISO 22000:2005. Furthermore we have special certificates for various qualities, such as several postal certificates for our windowing Glassine ECHO[®] WIN.

Our product quality "ECHObag" is also available as „FSC mix 70%“. FSC certified products are especially labelled.



Product-Overview

Quality Glassine ...	Substance g/m ²	Examples of application	Page
...ECHO [®] Standard bleached glazed Glassine plain or embossed	from 25 - 95 g/m ² possible <u>Standard substances:</u> 30; 35; 40; 50; 60;	packaging or wrapping of foodstuffs, photo albums, soap wrapping, chemise inlayer, envelopes for packing lists, Glassine-envelopes, packaging of sweets	3
...ECHO [®] Win bleached glazed Glassine or coloured glazed Glassine	from 30 - 60 g/m ² possible <u>Standard substances:</u> 30; 32; 33; 35; 37; 40; 50; 60	window envelopes, stamp albums, storage of films, medicine bags, sheet protectors, viewing window	4
...ECHO [®] Bag bleached glazed Glassine	from 30 - 95 g/m ² possible <u>Standard substances:</u> 35; 40; 45; 50	paper bags	5
...ECHO [®] Col coloured glazed Glassine	from 25 – 95 g/m ² possible <u>Standard substances:</u> 40	foodstuff packaging, art/craft material, packaging of sweets, paper wool, bags, paper tablecloth	6
...ECHO [®] Natur (Panettone) unbleached glazed Glassine	from 25 – 115 g/m ² possible <u>Standard substances:</u> 35; 40; 45, 60, 95	foodstuff packaging, baking cases, wrapping paper	7
...ECHO [®] Lam bleached glazed Glassine	from 25 – 95 g/m ² possible <u>Standard substances:</u> 35; 40	lamination, packaging of foodstuffs or sweets, soap wrapping, lids for food and non food products	8
...ECHO [®] Print bleached glazed Glassine	from 25 – 95 g/m ² possible <u>Standard substances:</u> 35; 40; 45	gravure printing, packaging of foodstuffs or sweets	9
...ECHO [®] opak opaque glazed Glassine	from 30 – 70 g/m ² possible <u>Standard substances:</u> 35; 40; 50; 60	packaging of foodstuffs or sweets e.g. cushion pads,	10
ECHO [®] Slip Easy treated	Possible on all standard papers except ECHOPePP und PePP met.	cups	11
...ECHO [®] soft	ECHO [®] Standard treated	special soft Glassine for gravure printing	12
...ECHO Botanica [®] bleached glazed Glassine or coloured glazed Glassine	from 25 – 95 g/m ² possible <u>Standard substances:</u> 30, 35, 40	flower wrapping	13
ECHOPePP [®]	from 35 – 95 g/m ² possible <u>Standard substances:</u> 35; 45; 55; 65; 75; 95	packaging of foodstuffs or sweets, table cloth, bags, decoration, twist packing, cups, wrapping of school books	14
ECHOPePP [®] met	from 35 – 95 g/m ² possible <u>Standard substances:</u> 35, 45, 55, 65	packaging of foodstuffs or sweets	15
tolerances & storage conditions			16

ECHO[®] Standard

bleached glazed Glassine

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substance g/m ²	thickness µm	tensile strength lengthwise > = N/15mm
		ISO 1924
25	20	27
30	23	32
35	28	36
40	31	38
50	38	43
60	45	50
70	54	65
80	62	70
90	72	82

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrale 21 marzo 1973.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists



B- Linen embossed, bleached, glazed Glassine,
40 g/m² as interlayer for photo albums

ECHO[®] Win

bleached glazed windowing Glassine

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substance g/m ²	thickness µm	transparency = %	tensile strength lengthwise = N/15mm
ISO 536	ISO 534	DIN 53147	ISO 1924
30	23	85	32
32	25	84	34
33	26	84	35
35*	28	82	36
37	28	81	38
40	30	79	40
50	38	74	47
60	45	68	55

- Certificates: the premium quality ECHO[®] WIN A, 35 g/m², transparency of min. 85 %, is approved by French regulation AFNOR. Existence of various German and Swiss postal certificates confirming machine readability and runnability. ECHO[®] WIN is not only suitable for recycling envelopes, but also for wood free white envelopes.
- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrare 21 marzo 1973.
- Photo Test ANSI IT9.2-1991: Glassine ECHO[®] WIN conforms the requirements
- Research report: existing research report confirming compostability of Glassine ECHO[®].



Envelopes with transparent bleached and coloured windowing Glassine



Medicine bags

ECHO[®] Bag

bleached glazed Glassine* for Bags

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substance g/m ²	thickness µm	tensile strength lengthwise = N/15mm	elongation lengthwise %	tear growth mN·m/m	bursting pressure kPa·m ² /g
ISO 536	ISO 534	ISO 1924	ISO 1924	DIN 53115	DIN 53113
35	28	38	1,4	240	210
40	31	46	1,5	300	210
45	35	49	1,6	360	220
50	39	51	1,7	420	220

* We also produce opaque glazed Glassine ECHO[®] BAG on special request

- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrare 21 marzo 1973.
- Printability: suitable for flexo and gravure printing
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists
- Our product quality "ECHObag" is also available as „FSC mix 70%“. FSC certified products are especially labelled.



Glassine Bag as inner bag for oat flakes



Glassine Bags for bread or baguette

ECHO® Col

Coloured glazed Glassine

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	4,0 ... 8,0

standard substance g/m ²	thickness µm	tensile strength lengthwise > = N/15mm
ISO 536	ISO 534	ISO 1924
40	32	38

REMARK: Standard substance 40 g/m², other substances on special request. Plain or embossed available (B-Linen, Silkworm, Spiderweb).

the following standard colours are available:

LIGHT YELLOW 11961	DARK YELLOW 1971
ORANGE 1968	PINK 13966
LIGHT GREEN 1962	DARK GREEN 1963
BLUE 1964	PURPLE 1965
RED 11987	CHOCOLATE BROWN 11990
RED BROWN 1970	BLACK BROWN 32430
BROWN 8008	

- Special colours possible
- Printability: suitable for flexo and gravure printing
- Reliability: The following colours are approved for direct contact with fatty, dry and mostly foodstuffs according to German regulation XXXVI: Chocolate Brown 11990 and Black Brown 32500 (both also according to American FDA), Red 11987, Opaque, Lilac 5004, Light Green 1962, Light Green 9002, Light Yellow 11961, Pink 11966, Bordeaux Red 7003, Dark Blue 4007, Red Brown 1970, Red Brown 8004 (Panettone). Furthermore Red Brown 8004 (Panettone) is also approved according to Italian Decredo Ministrale 21 marzo 1973. Coshier Certificate exists.
- Research report: existing research report confirming compostability of Glassine ECHO®.



Coloured Glassine paper for handicrafts and decoration



Example for handicrafts

ECHO[®] Natur

unbleached glazed Glassine

pulp unbleached	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	4,0 ... 8,0
smoothness (Bekk) face/back side	ISO 5627	1000 / 2000 sec.
grease resistance	TAPPI	> = 30 sec.

standard substances g/m ²	thickness µm	tensile strength lengthwise > = N/15mm
		ISO 1924
35	28	36
40	32	40
45	35	44
60	45	60
95	71	81

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI and XXXVI/2 as well as American FDA and Italian Decredo Ministrare 21 marzo 1973.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists



ECHO[®] Natur for manufacture of baking cases



ECHO[®] Natur for wrapping foodstuff

ECHO[®] LAM

bleached glazed Glassine for lamination

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substances g/m ²	thickness µm	smoothness (Bekk) face side = sec	smoothness (Bekk) back side = sec	tensile strength lengthwise = N/15mm
ISO 536	ISO 534	ISO 5627	ISO 5627	ISO 1924
35	28	1.000	2.000	36
40	30	1.000	2.000	40

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrale 21 marzo 1973.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists



Packaging of liver sausage (Glassine ECHO[®] LAM with PE coating)



Lids (Glassine ECHO[®] LAM laminated with aluminium foil)

ECHO[®] Print

bleached glazed Glassine for gravure printing

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substances g/m ²	thickness µm	smoothness (Bekk) face side = sec	smoothness (Bekk) back side = sec	tear growth lengthwise = mN·m/m
ISO 536	ISO 534	ISO 5627	ISO 5627	DIN 53115
35	28	1.000	2.000	200
40	30	1.000	2.000	250
45	35	1.000	2.000	300

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrare 21 marzo 1973.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists



Printed Glassine as shield



Printed Glassine for small bags

ECHO[®] opak

Opaque glazed Glassine*

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substances g/m ²	thickness µm	opacity > %	tensile strength lengthwise > = N/15mm
ISO 536	ISO 534	ISO 2471	ISO 1924
35	28	50	38
40	31	50	40
50	38	55	42
60	46	65	45

* On special request Opaque Glassine is also available as BAG quality

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists

ECHO[®] Slip Easy

glazed Glassine, slip easy treated

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	4,0 ... 8,0
glide angle	internal method	≤ 20°

standard substances g/m ²	thickness µm	tensile strength lengthwise > = N/15mm
30	23	32
32	25	34
33	26	35
35	28	36
40	31	38
50	38	43
60	45	50

- Except from ECHOPePP[®] and ECHOPePP[®] met all Glassine ECHO[®] qualities are available with slip easy treatment.
- Reliability: also slip easy treated Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA, partial it is even approved according to BgVV XXXVI/2.
- Research report: existing research report confirming compostability of Glassine ECHO[®].
- Kosher Certificate: exists



Cups (40 g/m² Black Brown glazed Glassine ECHO[®] COL, slip easy treated)

ECHO[®] soft

bleached glazed Glassine

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 8,0 %
pH-value	ISO 6588	6,0 ... 8,0

standard substances g/m ²	thickness ss µm	smoothness (Bekk) face side = sec	smoothness (Bekk) back side = sec	tear growth lengthwise = mN·m/m
ISO 536	ISO 534	ISO 5627	ISO 5627	DIN 53115
35	28	1.000	2.000	200
40	30	1.000	2.000	250
45	35	1.000	2.000	300
60	46	800	1.600	350

- A special preparation softens the Glassine paper during production process
- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO[®] quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA and Italian Decredo Ministrale 21 marzo 1973.
- Kosher Certificate: exists



ECHO[®] soft for sweet packaging

ECHO botanica®*

bleached or coloured glazed Glassine

pulp 100% bleached (ECF/TCF)	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
absolute residual moisture content	ISO 287	6,0 ... 9,0 %
pH-value	ISO 6588	4,0 ... 8,0

standard substances g/m ²	thickness µm	tensile strength lengthwise > = N/15mm
		ISO 1924
30	23	32
35	28	36
40	32	34

*ECHO botanica® is 100% biodegradable, even compostable (proved by a research report of an acknowledged German laboratory)

- Printability: suitable for flexo and gravure printing
- Reliability: Glassine ECHO® quality is approved according to regulations (EG) 1935/2004 and according to German regulation XXXVI as well as American FDA.



High transparent Glassine Paper for flower wrapping



High transparent Glassine Paper for flower wrapping

ECHO PePP®

Glassine laminated against 5µm BOPP Film

Glassine Paper / Film	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
gloss (60°) (Paper/Film)	REFO 60	> = 20/80
smoothness (Bekk) paper side	ISO 5627	> = 1000 sec.
WVTR (23°C, 85% r.h.) (Paper/Film)	ISO 15106-3	6,2 g/m ² d
OTR (23°C, 50% r.h.) (Paper/Film)	ISO 1510613	20 ml/m ² d bar

	substances g/m ²	thickn ess µm	tensile strength lengthwise > = N/15mm	tear growth mN-m/m
			ISO 1924	DIN 53115
30 g/m ² +5µm BOPP	35	29	38	210
35 g/m ² +5µm BOPP	40	33	44	250
40 g/m ² +5µm BOPP	45	37	50	300
50 g/m ² +5µm BOPP	55	45	55	300
55 g/m ² +5µm BOPP	60	49	57	400
60 g/m ² +5µm BOPP	65	53	60	500
70 g/m ² +5µm BOPP	75	61	70	600
80 g/m ² +5µm BOPP	85	69	75	800
90 g/m ² +5µm BOPP	95	72	80	1.000

- **Printability:** suitable for flexo and gravure printing at the Glassine Paper side, at the Film side only in combination with corona treatment.
- **Reliability:** ECHOPePP® quality is in common with the regulations (EG) 1935/2004, the Glassine Paper part is approved according to German regulation XXXVI, the laminate is heat resistant up to 150°C.



ECHOPePP® as a washable table cover



ECHOPePP® for all kind of packaging

ECHOPePP[®] met*

Glassine laminated against 5µm metallized BOPP Film

Glassine Paper / Film	standards	tolerances
substance	ISO 536	± 6 %
thickness	ISO 534	± 6 %
gloss (60°) (Papier/Film)	REFO 60	> = 20/mirror gloss
smoothness (Bekk) Paper side	ISO 5627	> = 1000 sec.
WVTR (23°C, 85% r.h.) (Paper/Film)	ISO 15106-3	<= 0,1 / 0,4 g/m ² d
OTR(23°C, 50% r.h.) (Paper/Film)	ISO 1510613	<= 1,5 ml/m ² d bar

	standard substances g/m ²	thickness µm	tensile strength lengthwise > = N/15mm	tear growth mN-m/m
			ISO 1924	DIN 53115
30 g/m ² +5µm BOPP	35	29	38	210
40 g/m ² +5µm BOPP	45	37	50	300
50 g/m ² +5µm BOPP	55	45	55	300
60 g/m ² +5µm BOPP	65	53	60	500

* ECHOPePP[®] met has very good twist properties

- Printability: suitable for flexo and gravure printing at the Glassine Paper side, at the Film side (metallized side) only in combination with corona treatment.

Tolerances :

Roll widths	Tolerances
= 10 mm	+/- 0,2 mm
>11 mm - = 20 mm	+/- 0,3 mm
> 21 mm - = 50 mm	+/- 0,4 mm
>51 mm - = 100 mm	+/- 0,5 mm
>101 mm - = 200 mm	+/- 1,0 mm
>201 mm - = 400 mm	+/- 1,5 mm
>401 mm - = 700 mm	+/- 2,0 mm
>701 mm - = 1200 mm	+/- 2,5 mm
>1201 mm	+/- 3,0 mm

For sheet products applies:
DIN EN 644

Storage and Handling Condition

- dry and hygienic storage (avoid strong smell)
- protect against humidity
- transport only in closed, hygienic and clean lorry or container (no air condition)
- secure cargo from shift
- temperature equalisation prior to converting essential to protect the Glassine from humidity caused by condensation
- do not pile sheets – especially embossed Glassine

We recommend a storage period of 1year but only if the following conditions are respected:

- ➔ storage only in original packaging
- ➔ storage at room temperature (recommendation: 18° - 25° C)
- ➔ storage at indoor climate (recommendation: 45 – 55 % humidity)
- ➔ protect from thermal fluctuation, direct sunlight and damage

After 1 year storage we recommend to measure all relevant paper properties prior to processing