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CERTIFICATION BODY No. 3065

ACCREDITED BY THE CZECH ACCREDITATION INSTITUTE O.P.S.

CERTIFICATION PROTOCOL

No. : CA – 6/2021

Applicant: Crystalex CZ, s.r.o.
Masarykovo nábřeží 236/30
110 00 Praha 1 – Nové Město, Czech Republic
Reg.No. : 285 42 673

Product name: Utility and beverage glass from crystal glass melt crystallin
(Cristallin), mechanically formed, smooth or decorated.
On the mouth edge - decorated with preparations of precious metals and
decorative materials free of harmful substances (lead and cadmium) only

Producer : CRYSTALEX CZ s.r.o.
Masarykovo nábřeží 236/30
110 00 Praha 1 – Nové Město, Czech Republic
plant Nový Bor, Bedřicha Eggermanna 634, 473 13 Nový Bor

Date of issue: 2021-12-07

Protocol was performed by: Lenka Stránská

Conformity assessment performed by: Lenka Stránská

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1. INTRODUCTION

Utility and beverage glass crystallin (Cristallin) colorless and colored, smooth or decorated is product used in households or in public consume in contact with consumables.

2. FOUNDATIONS FOR WORKING-OUT OF CERTIFICATION PROTOCOL

- Application for certification No. 6/2021 from 2021-11-24
- Test report No. 308/2021 from 2021-12-03 issued by Laboratory for glass and building products testing, laboratory (AZL) No.1139 testing, IKATES, s.r.o. Teplice, accredited by CIA, Test reports No. 21/0842 from 2021-08-17 and No. 21/1349, 21/1350 and 21/1351 from 2021-12-06, issued by Testing laboratory IKATES, s.r.o. Teplice, AZL 1139.2 (analytic laboratory), accredited by CIA
- Audit report of technical and organizational conditions in field of production quality assurance from 2021-12-01
- Technical documentation of the producer

3. NORMATIVE REFERENCES

ČSN 70 8005: 1993 Utility glass. General provision.

DIN 51 032:1986 Ceramic, glass, glass ceramics, enamel. Limit values for leach of lead and cadmium from consumer articles.

ISO 7086-2:2000 Glass hollow ware in contact with food – Release of lead and cadmium – Part 2: Permissible limits

BS 6748: 1986 Specification for limits of metal release from ceramic ware, glassware, glass ceramic ware and vitreous enamel ware

GOST 30407:1996 Glass tableware and decorative articles

Ordinance of Ministry of Health (MH) No. 38/2001 Coll., as amended by further legal acts, annex No. 9, Section 1

4. OBSERVED PROPERTIES

According to ČSN 70 8005 : - inner stress

- water resistance
- leach from product surface (content of lead and cadmium, harmless to health)

According to ČSN 70 8005, DIN 51 032, ISO 7086-2, BS 6748, GOST 30407, Ordinance of MH No. 38/2001 Coll., as amended by further legal acts, Annex No. 9, Section 1 - leach from product surface (content of lead and cadmium, harmless to health)



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5. TEST SAMPLES DATA

Following specimens of utility glass and beverage glass were supplied to testing inner stress (testing laboratory No. 1139):

- set No. 1 goblets BC Selb - Simply 40741/340 ml 6 pcs. (L9 - 2021-11-29)
- set No..2 goblets Spiegelau 40849/400 ml 10 pcs. (L3 - 2021-11-29)
- set No. 3 goblets Spiegelau 40848/380 ml 10 pcs. (L3 - 2021-11-29)

Following specimens were supplied to testing into laboratory AZL 1139.2 :

- for water resistance test:

- glass melt crystallin (Cristallin) V3 L9,

- for leach from product surface tests – 4 pcs. per article:

- goblet Viola with optics, gold rim + lister: 40729/22/350/M8743 (shihny gold 2 mm + edge, sprayed only the goblet into a lost paint lister 407L green undiluted)
- goblet Claudia 40149/200/43249, 2x gold rim, panto coated with platinum
- goblet Elisabeth 40760/200/Q9004 mouth edge area golden rim, under it a panto and another gold rim

6. TEST RESULTS AND EVALUATION

6.1 Inner stress (according to ČSN 70 8005)

Measured mean values of maximum specific path difference

set/No.	mean values of maximum specific path difference (inner stress) X [nm/cm]	
	Edge of sample	Body, bottom of sample
goblets BC Selb - Simply 40741/340 ml		
1/1	< 56	63
1/2	< 50	50
1/3	< 56	62
1/4	< 50	55
1/5	< 50	56
1/6	< 50	86

set/No.	mean values of maximum specific path difference (inner stress) X [nm/cm]	
	Edge of sample	Body, bottom of sample
goblets Spiegelau 40849/400 ml		
2/1	< 50	38
2/2	< 50	25
2/3	< 50	44
2/4	< 50	26
2/5	< 50	31
2/6	< 56	51
2/7	< 56	47
2/8	< 56	39
2/9	< 50	38
2/10	< 50	55



Inner stress

mean values of maximum specific path difference (inner stress) X [nm/cm]		
	Edge of sample	Body, bottom of sample
goblets Spiegelau 40848/380 ml		
3/1	< 50	33
3/2	< 50	48
3/3	< 56	41
3/4	< 56	36
3/5	< 56	53
3/6	< 50	54
3/7	< 56	56
3/8	< 56	64
3/9	< 45	42
3/10	< 56	39

Notes: Measurement uncertainty $u_{(x)} = 20$ nm/cm for measuring in mouth edge area or < 10 nm/cm at measuring of inner stress in body or on the bottom of glass is extended (total) uncertainty based on standard deviation 0,05 (unit) multiplied by coefficient $k=2$, which ensures confidence interval approximately 95%.

In accordance with requirements of the standard ČSN 70 8005, art. 4.1.4., including consideration of measurement uncertainty.

6.2 Water resistance (according to ČSN 70 8005)

Product tested : glass melt crystallin (Cristallin) V3 L9

Average of consumption of hydrochloric acid dilution $c(\text{HCl}) = 0,01$ mol/l per 1 g of crushed glass and uncertainty expression : $0,45 \text{ ml} \pm 0,02 \text{ ml}$ – water resistance classification of crushed glass : **HGB 3**

In accordance with requirements of the standard ČSN 70 8005, art. 4.1.1, including consideration of measurement uncertainty.

6.3. Leach from product surface (content of lead and cadmium, harmless to health)

(according to ČSN 70 8005, DIN 51 032, ISO 7086-2, BS 6748, GOST 30407, Ordinance of MH No. 38/2001 Coll., as amended by further legal acts., Annex No.9, Section 1)

6.3.1 – goblet Viola with optics, gold rim + lister: 40729/22/350/M8743 (shihny gold 2 mm + edge, sprayed only the goblet into a lost paint lister 407L green undiluted) – 4 pcs. tested in mouth edge area

Sample No.	Volume of test solution for leach in ml	concentration in leach of lead in mg Pb/article	concentration in leach of cadmium in mg Cd/article
1	120	<0,02	<0,002
2	120	<0,02	<0,002
3	120	<0,02	<0,002
4	120	<0,02	<0,002
average		<0,02	<0,002



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6.3.2 goblet Claudia 40149/200/43249, 2x gold rim, panto coated with platinum – 4 pcs.
– tested in mouth edge area

Sample No.	Volume of test solution for leach in ml	concentration in leach of lead in mg Pb/article	concentration in leach of cadmium in mg Cd/article
1	120	<0,02	<0,002
2	120	<0,02	<0,002
3	120	<0,02	<0,002
4	120	<0,02	<0,002
average		<0,02	<0,002

6.3.3 goblet Elisabeth 40760/200/Q9004 mouth edge area golden rim, under it a panto and another gold rim – 4 pcs.
– tested in mouth edge area

Sample No.	Volume of test solution for leach in ml	concentration in leach of lead in mg Pb/article	concentration in leach of cadmium in mg Cd/article
1	120	<0,02	<0,002
2	120	<0,02	<0,002
3	120	<0,02	<0,002
4	120	<0,02	<0,002
average		<0,02	<0,002

In accordance with requirements of the standards ČSN 70 8005, DIN 51 032, ISO 7086-2, BS 6748, GOST 30407 and Ordinance of MH No. 38/2001 Coll., as amended by further legal acts, Annex No.9, Section 1 – including consideration of measurement uncertainty.

7. QUALITY SYSTEM REVIEW

Fulfillment of the assumptions for continual quality assurance of certified products is documented:

- Audit report of technical and organizational conditions in the field of production quality assurance from 2021-12-01



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8. CONCLUSION

The products of the applicant Crystalex CZ, s.r.o., Masarykovo nábřeží 236/30, 110 00 Praha 1 – Nové Město, Czech Republic, plant Nový Bor

– Utility glass and beverage glass from crystal glass melt crystallin (Cristallin), mechanically formed, smooth or decorated.

On the mouth edge - decorated with preparations of precious metals and decorative materials free of harmful substances (lead and cadmium only) -

comply

in basic properties – inner stress, water resistance according to requirements of the standard ČSN 70 8005, in indicator leach from product surface (content of lead and cadmium, harmless to health) with requirements of the standards ČSN 70 8005, DIN 51 032, ISO 7086-2, BS 6748, GOST 30407 and Ordinance of MH No. 38/2001 Coll., as amended by further legal acts., Annex No.9, Section 1

Concurrently is submitted that the producer has ensured assumptions for continual quality assurance of certified products in the plant.

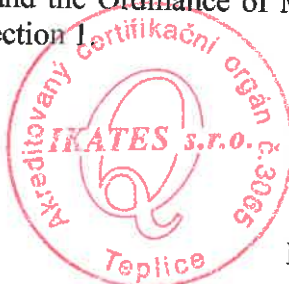
CERTIFICATION DECISION

Based on the results of Certification Protocol CA-6/2021, I decide

– to give certificate to the applicant Crystalex CZ, s.r.o., Masarykovo nábřeží 236/30, 110 00 Praha 1 – Nové Město, Czech Republic, plant Nový Bor for product – utility glass and beverage glass from crystal glass melt crystallin (Cristallin), mechanically formed, smooth or decorated. On the mouth edge - decorated with preparations of precious metals and decorative materials free of harmful substances (lead and cadmium) only

– the products agree with the requirements of the standards ČSN 70 8005, DIN 51 032, ISO 7086-2, BS 6748, GOST 30407 and the Ordinance of MH No. 38/2001 Coll., as amended by further legal acts., Annex No.9, Section 1

2021-12-07



[Signature]
 Lubomír Hnilička
 Manager of Certification Body