Test Report

Report No.	: AGC03778241101-001

SAMPLE NAME	:	Sunglass with silver oval shape on, Sunglass with cork legs
MODEL NAME	:	MO7455-04, MO7455-05, MO7455-06, MO7455-08, MO7455-10, MO7455-21, MO7455-38, MO7455-48, MO6231-03
APPLICANT	:	MID OCEAN BRANDS B.V.
STANDARD(S)	:	Please refer to the following page(s).
DATE OF ISSUE	:	Nov. 18, 2024

Attestation of Global Compliance (Shenzhen) Std & Tech Co., Ltd.

Applicant	:	MID OCEAN BRANDS B.V.
Address	:	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Test Site	:	6/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China

Report on the submitted sample(s) said to be:

Sample Name	:	Sunglass with silver oval shape on, Sunglass with cork legs
Model	:	MO7455-04, MO7455-05, MO7455-06, MO7455-08, MO7455-10, MO7455-21, MO7455-38, MO7455-48, MO6231-03
Vendor code	:	101191
Age Grading	:	Adults
Cat. No.	:	Cat.2
Filter Type	:	Uniform Lenses
Frame Color	:	Purple
Lens Color	:	Blue
Country of Origin	:	CHINA
Country of Destination	:	EUROPE
Sample Received Date	:	Nov. 11, 2024
Testing Period	:	Nov. 11, 2024 to Nov. 18, 2024
Test Requested	:	Selected test(s) as requested by client.

Test Requested:	**Conclusion**
Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 63 - Lead(Pb) Content	Pass
Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 23 -Cadmium(Cd) Content	Pass
Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 51&52 - Phthalates Content	Pass
Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 50 - Polycyclic-aromatic Hydrocarbons (PAHs) Content	Pass
- EN ISO 12312-1: 2022 Eye and face protection — Sunglasses and related eyewear — Part 1: Sunglasses for general use	Pass
-UV400 (In-house test, and test method refer to attached pages for details)	Pass

Approved by:

Suhongliang, Leon

Technical Director

Report Revise Record

Report Version	Issued Date	Valid Version	Notes
/	Nov. 18, 2024	Valid	Initial release

The photo of the sample

The photo of AGC03778241101-001 is for use only with the original report.

Test Point Description

Test point	Test point description
1	Sunglass with silver oval shape on, Sunglass with cork legs
1-1	Purple mirror frame
1-2	Lens
1-3	Metal screw
1-4	Metal strip

Test Results:

Note: N.D.=Not Detected (less than method detection limit), MDL = Method Detection Limit, 1mg/kg=0.0001%

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019/CNAS-GL015:2022.

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 63

- Lead(Pb) Content

Test Methods and Equipment：IEC 62321-5:2013; ICP-OES

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Lead(Pb)	mg/kg	500	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-3	1-4
Lead(Pb)	mg/kg	500	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 23

-Cadmium(Cd) Content

Test Methods and Equipment：IEC 62321-5:2013; ICP-OES

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Cadmium(Cd)	mg/kg	100	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-3	1-4
Cadmium(Cd)	mg/kg	100	10	N.D.	N.D.
Conclusion				Conformity	Conformity

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 51&52

- Phthalates Content

Test Methods and Equipment：IEC 62321-8:2017; GC-MS

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Diisobutyl phthalate (DIBP) CAS:84-69-5	%	0.1	0.005	N.D.	N.D.
Dibutyl phthalate (DBP) CAS:84-74-2	%	0.1	0.005	N.D.	N.D.

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Butylbenzyl phthalate (BBP) CAS:85-68-7	%	0.1	0.005	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate (DEHP) CAS:117-81-7	%	0.1	0.005	N.D.	N.D.
Di-n-octyl phthalate (DNOP) CAS:117-84-0	%	/	0.005	N.D.	N.D.
Di-isononyl phthalate (DINP) CAS:28553-12-0, 68515-48-0	%	/	0.005	N.D.	N.D.
Di-isodecyl phthalate(DIDP) CAS:26761-40-0, 68515-49-1	%	/	0.005	N.D.	N.D.
Sum of DIBP +DBP+BBP+DEHP	%	0.1	/	N.D.	N.D.
Sum of DNOP+DINP+DIDP	%	0.1	/	N.D.	N.D.
Conclusion				Conformity	Conformity

Limit requirements of Phthalates

Toys and childcare articles	Each of DEHP, DBP, BBP, DIBP is less than 0.1% or the sum of DEHP+DBP+BBP+DIBP is less than 0.1%
Toys and childcare articles which can be placed in the mouth by children	The sum of DINP+DIDP+DNOP is less than 0.1%

Annex XVII of the REACH Regulation (EC) No 1907/2006, entry 50

- Polycyclic-aromatic Hydrocarbons (PAHs) Content

Test Methods and Equipment：Afps GS 2019:01 PAK; GC-MS

Test Item(s)	Unit	Limit	MDL	Test Result(s)	
				1-1	1-2
Benzo[a]pyrene(BaP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[e]pyrene(BeP)	mg/kg	1	0.1	N.D.	N.D.
Benzo[a]anthracene(BaA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[b]fluoranthene(BbF)	mg/kg	1	0.1	N.D.	N.D.
Benzo[j]fluoranthene(BjFA)	mg/kg	1	0.1	N.D.	N.D.
Benzo[k]fluoranthene(BkF)	mg/kg	1	0.1	N.D.	N.D.
Chrysene(CHR)	mg/kg	1	0.1	N.D.	N.D.
Dibenzo[a,h]anthracene(DBA)	mg/kg	1	0.1	N.D.	N.D.
Conclusion				Conformity	Conformity

Limit requirements of Polycyclic-aromatic Hydrocarbons (PAHs) (Unit: mg/kg)

Items	CAS No.	Extender oils or used for the production of tyres or parts of tyres	Any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity	Toys, including activity toys, and childcare articles, any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity
Benzo[a]pyrene(BaP)	50-32-8	≤ 1	≤ 1	≤ 0.5
Benzo[e]pyrene(BeP)	192-97-2	/	≤ 1	≤ 0.5
Benzo[a]anthracene(BaA)	56-55-3	/	≤ 1	≤ 0.5
Benzo[b]fluoranthene(BbF)	205-99-2	/	≤ 1	≤ 0.5
Benzo[j]fluoranthene(BjFA)	205-82-3	/	≤ 1	≤ 0.5
Benzo[k]fluoranthene(BkF)	207-08-9	/	≤ 1	≤ 0.5
Chrysene(CHR)	218-01-9	/	≤ 1	≤ 0.5
Dibenzo[a,h]anthracene(DBA)	53-70-3	/	≤ 1	≤ 0.5
Sum of BaP+ BeP+ BaA+ BbF+ BjFA+ BkF+ CHR+ DBA	/	≤ 10	/	/

Requirements for Sunglasses

Note: #1 The applicant's attention was drawn that the manufacturer should not use the frame materials which are known to cause irritation, allergic or toxic reaction during wear in a normal state of health against significant proportion of users. Sunglasses shall be designed, manufactured and packaged in such way that, when used under normal conditions, they will not compromise the health or safety of the wearer. The risks posed by substances leaking or evaporating from the sunglasses that can come into prolonged contact with the wearer shall be reduced by the manufacturer to within the limit of any applicable regulatory requirement.

Special attention shall be given to substances that are allergenic, carcinogenic, mutagenic or toxic to reproduction.

Substances recommended for cleaning, maintenance or disinfection shall be known to be unlikely to have any adverse effect upon the wearer, when applied in accordance with the instructions given in the information to be supplied by the manufacturer.

Manufacturers/suppliers shall perform an appropriate risk analysis on potentially harmful substances contained in the sunglasses that, when the sunglasses are used under normal conditions, the health (and safety) of the wearer shall not be compromised.

The following are examples of documents that represent the appropriate information:

a) specification of the material(s);

b) safety data sheets relating to the materials;

c) information relating to the suitability of the materials for use in medical devices, or other relevant applications;

d) information relating to toxicological, allergenic, carcinogenic, toxic to reproduction, or mutagenic investigations on the materials.

REQUIREMENTS (According to ISO 12312-1)				TESTING	RESULT
Test item(s)			According to Clause	According to Clause	
Construction and materials	Construction		4.1	ISO 18526-3:2020, 6.1	P
	Filter material and surface quality		4.2	ISO 18526-3:2020, 6.6	P
	Physiological compatibility		4.3	--	NA
	Head forms	For adult's sunglasses: 1-M	4.4	ISO 18526-4	P
		For children's: 1-C6 or 1-C12			NA
Transmittance	Transmittance and filter categories	Filter categories	5.2	ISO 18526-2:2020, 7	Cat.2
		UV requirements			P
		Enhanced infrared absorption (If claim)			NA

REQUIREMENTS (According to ISO 12312-1)				TESTING	RESULT
Test item(s)			According to Clause	According to Clause	
	Uniformity of luminous transmittance		5.3.1	ISO 18526-2:2020, 7	P
	Requirements for road use and driving	Filter categories	5.3.2.1	ISO 18526-2:2020, 7	P
		Spectral transmittance	5.3.2.1	ISO 18526-2:2020, 7	P
		Detection of signal lights	5.3.2.1	ISO 18526-2:2020, 11	P
		Road use (including driving) in twilight or at night	5.3.2.2	ISO 18526-2:2020, 16.3.2	NA
	Wide angle scattering		5.3.3	ISO 18526-2:2020, 14.1	P

General transmittance requirements	Additional transmittance requirements for specific filter types	Photochromic filters		5.3.4.1	ISO 18526-2:2020,	NA
		Polarizing filters		5.3.4.2	ISO 18526-2:2020, 15	NA
		Gradient filters		5.3.4.3	ISO 18526-2:2020, 7	NA
		Electro-optical sun glare filter, electro-optical sunglass filter	General	5.3.4.4.1	ISO 18526-2:2020, 17.11 and Annex E.	NA
			Default mode	5.3.4.4.2	--	NA
			Reaction time	5.3.4.4.3	ISO 18526-2:2020, 17.1	NA
			Photosensitive seizures	5.3.4.4.4	--	NA
			Combined uniformity and angular dependence of luminous transmittance	5.3.4.4.5	ISO 18526-2:2020	NA
			Narrow angle scatter	5.3.4.4.6	ISO 18526-2:2020, 14.2	NA
Claimed transmittance properties	Blue-light absorption/transmittance			5.3.5.1	ISO 18526-2:2020, 7	NA
	UV absorption/transmittance			5.3.5.2	ISO 18526-2:2020, 7	NA
	Antireflective coated sunglasses			5.3.5.3	ISO 18526-2:2020,13	NA
	Reduced reflection coated sunglasses			5.3.5.4	ISO 18526-2:2020,13	NA
	Enhanced infrared absorption			5.3.5.5	ISO 18526-2:2020, 7	NA

REQUIREMENTS (According to ISO 12312-1)			**TESTING**	**RESULT**
Test item(s)		**According to Clause**	**According to Clause**	
Refractive power	Spherical and astigmatic power	6.1	ISO 18526-1:2020, 6.1	P
	Spatial deviation(If during the measurements spherical and astigmatic power, a doubling or other aberration of the image is observed)	6.2	ISO 18526-1:2020, 6.3	NA
	Prism imbalance (relative prism error)	6.3	ISO 18526-2:2020, 6.2	P
	Minimum robustness of filters(remark: this test is not necessary if the sunglasses meet 7.3 or 7.6)	7.1	ISO 18526-3:2020, 7.2.1	P
	Frame deformation and retention of filters	7.2	ISO 12311, 6	P
	Impact resistance of sunglasses, strength level 1 (optional specification)	7.3	ISO 18526-3:2020, 7.3.1	NA

Robustness	Increased endurance of sunglasses (optional specification)	7.4	ISO 12311, 9.7	NA
	Resistance to perspiration(optional specification)	7.5	ISO 12311, 9.10	NA
	Impact resistance of sunglasses, strength level 2 (optional specification)	7.6	ISO 18526-3:2020, 7.3.1	NA
	Impact resistance of sunglasses, strength level 3 (optional specification)	7.6	ISO 18526-3:2020, 7.3.2	NA
Resistance to solar radiation		8	ISO 18526-3:2020, 6.8.2	P
Resistance to ignition		9	ISO 18526-3:2020, 6.10	P
Resistance to abrasion (Optional specification)		10	ISO 8980-5	NA
Protective requirements	Coverage area	11.1	--	P
	Temporal protective requirements(Apply for Cat.4)	11.2	--	NA
Information and labeling	Information to be supplied with each pair of sunglasses	12.1	--	NR
	Additional information	12.2	--	NR

Remark: P = Pass; F = Fail; NA = Not Applicable; NR=Not require; X=checked; Cat.=Category;

τ_V =luminous transmittance

Test Results

Construction — Clause 4.1 and Filter material and surface quality — Clause 4.2

Sample No.	Defects				Comment	Result(s)
	Construction		Filter Material and Surface Quality			
	Observed	Absent	Observed	Absent		
1		X		X	--	P

Requirements:

1. Construction: Areas of the sunglass, including the frame and, if in a rimless or semi-rimless style, the edges of the filters, that may come into contact with the wearer during intended use shall be smooth and without sharp projections.
2. Filter material and surface quality: Except in a marginal area 5 mm wide, sunglass filters shall have no material or machining defects within an area of 30 mm diameter centred on the reference point that could impair vision,e.g. bubbles, scratches, inclusions, dull spots, pitting, mould marks, notches, reinforced areas, specks, beads, water specks, pock marks, gas inclusions, splintering, cracks, polishing defects or undulations. If this 5 mm wide portion around the edge of the test sample intrudes into this circular area, then this intrusion shall be excluded from testing.

Transmittance and filter categories — Clause 5.2

Sample No.: 1

Test Items	Requirements	Left	Right	Result(s)
τ_V (380~780)nm (%)	For Cat. 0: 80.0~100	24.8	24.6	P
	For Cat. 1: 43.0~80.0			
	For Cat. 2: 18.0~43.0			
	For Cat. 3: 8.0~18.0			
	For Cat. 4: 3.0~8.0			
Filter Cat	Claimed Cat.: Cat.2	Cat.2	Cat.2	
τ_{SUVB}(280~315)nm (%)	☐For Cat. 0,1:≤0.05$\tau_{V_{D65}}$ ☒For Cat. 2:1.0% absolute or 0.05$\tau_{V_{D65}}$ whichever is greater; ☐For Cat. 3, 4: 1.0% absolute	0.0	0.1	P
τ_{SUVA}(315~380)nm (%)	☐For Cat. 0, 1: ≤$\tau_{V_{D65}}$; ☒For Cat. 2, 3: ≤0.5$\tau_{V_{D65}}$ ☐For Cat. 4:1.0% absolute or 0.25$\tau_{V_{D65}}$ whichever is greater	0.0	0.1	P

Measurement Uncertainty (if necessary):

Uniformity of luminous transmittance —Clause 5.3.1

Sample No.: 1				
Test Items	**Requirements**	**Left**	**Right**	**Result(s)**
Difference within filter (%) (relative to higher value)	The relative difference in the luminous transmittance value: ☒For Cat. 0, 1, 2, 3: ≤15% ☐For Cat. 4: ≤20%	1.2	3.9	P
Difference with mounted filters (relative to higher value)(%)	The relative difference between the luminous transmittance value of the visual center for right and left eye : ☐For gradient-tinted filters: ≦ 20% ☒ For all other types: ≦15%	0.8		P

Measurement Uncertainty (if necessary):

Requirements for road use and driving — Clause 5.3.2

Sample No.: 1				
Test Items	**Requirements**	**Left**	**Right**	**Result(s)**
Categories	Filters suitable for road use and driving shall be of categories 0, 1, 2 or 3.	Cat.2	Cat.2	P
Spectral transmittance (475~650)nm (%)	$\geq 0.2\tau_{v\ D65}$	$0.73\tau_{v\ D65}$	$0.74\tau_{v\ D65}$	P
Red Signal	≥0.80	0.92	0.92	P
Yellow Signal	≥0.60	0.90	0.91	P
Green Signal	≥0.60	1.05	1.05	P
Blue Signal	≥0.60	1.24	1.24	P
Road use (including driving) in twilight or at night (%)	≥75.0	24.8	24.6	NA

Measurement Uncertainty (if necessary):

Wide angle scattering — Clause 5.3.3

Sample No.	Wide Angle Scattering (%)		Result(s)
	Left	Right	
1	1.5	1.4	P

Requirements:

At the reference point, the wide-angle scatter of the filters in the condition as supplied by the manufacturer shall not exceed the value of 3 %.

Measurement Uncertainty (if necessary):

Spherical and astigmatic power— Clause 6.1

Sample No.:1

Test Items	Requirements	Left	Right	Result(s)
Spherical Power (D)	± 0.12D	-0.01	-0.02	P
	The difference between the spherical powers shall not exceed 0.18 D;	0.10		
Astigmatic Power (D)	≤0.12D	0.04	0.00	P

Measurement Uncertainty (if necessary):

Prism imbalance (Relative prism error) — Clause 6.3

Sample No.	Requirements		Prism imbalance(cm/m)	Result
1	Horizontal	☒Base Out: <1.00 cm/m	0.0.	P
		☐Base In: <0.25 cm/m		
	Vertical	<0.25 cm/m	0.00	

Measurement Uncertainty (if necessary):

Minimum robustness of filters — Clause 7.1

Sample No.	Defects		Comment	Result(s)
	Observed	Absent		
1		X	--	P

Requirements:

None of the following defects shall appear on filters :

a.Filter fracture;

b.Filter deformation;

Note:

1. For clip-ons neither a) nor b) are applicable.
2. This test is not necessary if the sunglasses meet Impact resistance of sunglasses, strength level 1, or level 2, or Level 3.

Frame deformation and retention of filters — Clause 7.2

Sample No.	Boxed Center Distance C (mm)	Residual Deformation *X* (mm)	Deformation Percentage Φ (%)	Structure		Lens Retention		Result(s)
				Pass	Fail	Pass	Fail	
1	73.00	0.00	0.0	X		X		P

Requirements:

1. Be permanently deformed from its original configuration by not more than 2% of the distance C,. Deformation percentage Φ; Calculation: Φ(%) =X/C*100
2. No fracture or crack at any point;
3. No filter shall be displaced from the frame.

Measurement Uncertainty (if necessary):

Resistance to Radiation — Clause 8

Sample No.: 1

Test Items	Requirements	Left	Right	Result(s)
The relative change of luminous transmittance(%)	☐For Cat.0: <±3% ☐For Cat.1: <±5% ☒ For Cat.2: <±8% ☐ For Cat.3&4: <±10%	0.4	0.0	P
Wide angle scattering(%)	After exposure, the value of wide angle scattering shall not exceed the limit value of 3%;	1.0	1.0	P
τ_{SUVB} (280~315)nm(%)	☐For Cat. 0,1:≤0.05$\tau_{V\ D65}$ ☒For Cat. 2:1.0% absolute or 0.05$\tau_{V\ D65}$ whichever is greater; ☐For Cat. 3, 4: 1.0% absolute	0.0	0.0	P
τ_{SUVA} (315~380)nm(%)	☐For Cat. 0, 1: ≤$\tau_{V\ D65}$; ☒For Cat. 2, 3: ≤0.5$\tau_{V\ D65}$ ☐For Cat. 4:1.0% absolute or 0.25$\tau_{V\ D65}$ whichever is greater	0.0	0.0	P

Measurement Uncertainty (if necessary):

Ignition — Clause 9

Sample No.	Continued Combustion		Comment	Result(s)
	Yes	No		
1		X	--	P

Requirements:

The filters and frame shall be no continued combustion after withdrawal of the test rod.

Coverage area — Clause 11.1

Sample No.: 1					
Test	**Requirement**		**Left**	**Right**	**Result**
Cover two ellipses	Sunglasses shall cover two ellipses, and symmetrically placed on each side of the centre of the bridge of the frame: ☒For Adults': - horizontal diameter: (40±1)mm - vertical diameter: (28±1) mm	☐For Children': - horizontal diameter: (34±1)mm - vertical diameter: (24±1) mm	Meet	Meet	P
*Prevent UVradiation	τ_{SUVB} (280~315) nm (%)	☐For Cat. 0,1: ≦0.05τv_{D65} ☒For Cat. 2:1.0% absolute or 0.05τv_{D65} whichever is greater ☐For Cat. 3, 4: 1.0% absolute	0.0	0.1	P
	τ_{SUVA} (315~380) nm (%)	☐For Cat. 0,1: ≦τv_{D65} ☒ For Cat. 2,3: ≦0.5τv_{D65} ☐For Cat. 4:1.0% absolute or 0.25τv_{D65} whichever is greater;	0.0	0.1	P
Note: 1. Adults' headform: ☒1-M, PD=64mm ☐As defined by the headform utilized, PD=( )mm 2. Children's headform: ☐1-C6, PD= 52 mm ☐1-C12, PD=58mm.					

Measurement Uncertainty (if necessary):

Remark: *Prevent UV radiation measured point: Any point within specified two elliptical regions.

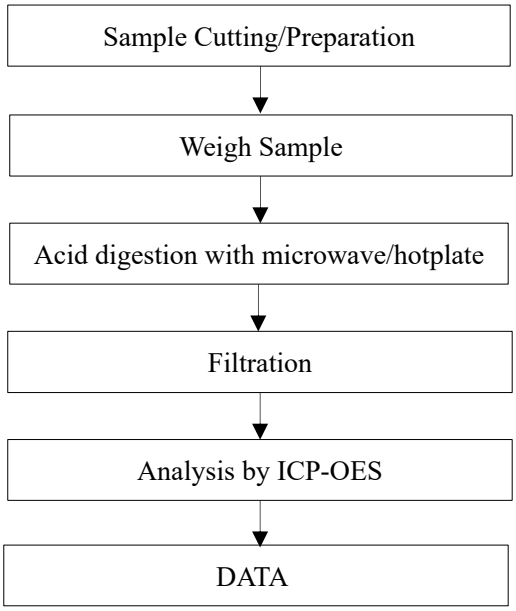
UV400 (In-house test, non- accredited test item)

Assessment was made against a level of 100% UV protection, in which the spectral transmittance was examined within a range of 280nm - 400nm.

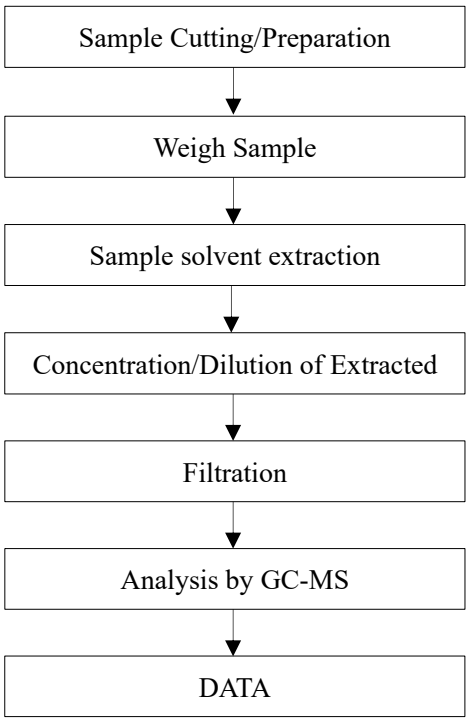
Sample Number	**Wavelength (nm)**	**Maximum Spectral transmittance (%)**		**Result**
		Left	**Right**	
1	280-400	0.3	0.4	P
Requirements: Maximum spectral transmittance shall not exceed 0.5%.				

Measurement Uncertainty (if necessary):

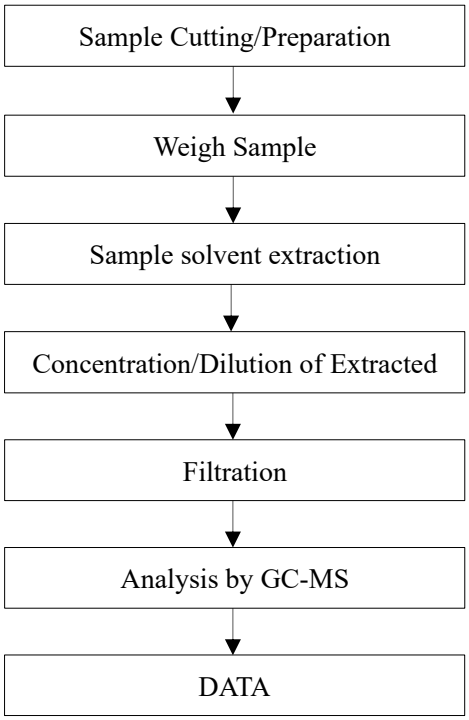
Test Flow Chart of Heavy Metal Content



Test Flow Chart of Phthalates



Test Flow Chart of Polycyclic-aromatic Hydrocarbons (PAHs)



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7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

*** End of Report ***

TEST REPORT

Applicant: MID OCEAN BRANDS B.V.
7/F KINGS TOWER
111 KING LAM STREET
CHEUNG SHA WAN
KLN

Attn: DEREK HUI

Number: HKGH03221517

Date: Feb 13, 2025

Sample and Information provided by customer :
Item Name : **Sunglasses with UV protection**
Item No. : **MO7455**
Quantity : 4 pairs
Vendor : 115663

****

For and on behalf of :
Intertek Testing Services HK Ltd.

Dorothy M.Y. Lau
Vice President

Intertek Testing Services Hong Kong Limited
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TEST REPORT

Number : HKGH03221517

Conclusion:
The submitted sample was tested under the following requirements requested by the applicant, subject to the information stated in the remark and attached page(s) for details :

	Requirement	Result0
(1)	UV-400	Pass
(2)	BS EN ISO 12312-1:2013+A1:2015 Eye and face protection – Sunglasses and related eyewear – Part 1: Sunglasses for general use, excluding: - Clause 4.3 - Physiological compatibility - Clause 12.2 - Additional Information	Pass

****

Decision Rule(s):
When a statement of conformity to a specification or standard is provided on test report, the decision rule shall be applied. For details, please refer to Intertek's "Decision Rule Document" and is available on Intertek's website. https://intertekhk.grd.by/decision-rule-doc..
If decision rule already inhered in the requested specification or standard, Intertek's "Decision Rule Document" is not applicable and indication of "∞" was shown as above table.
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TEST REPORT

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(1) UV-400

Test Method : Assessment was made against a level of 100% UV protection, in which the spectral transmittance was examined within a range of 280nm - 400nm to ensure that a transmittance value of 0.5% was not exceeded.

Number of sample tested : One (1) pair.

Result :

Wavelength (nm)	Transmittance (%)	
	Left ocular	Right ocular
280	<0.10	<0.10
285	<0.10	<0.10
290	<0.10	<0.10
295	<0.10	<0.10
300	<0.10	<0.10
305	<0.10	<0.10
310	<0.10	<0.10
315	<0.10	<0.10
320	<0.10	<0.10
325	<0.10	<0.10
330	<0.10	<0.10
335	<0.10	<0.10
340	<0.10	<0.10
345	<0.10	<0.10
350	<0.10	<0.10
355	<0.10	<0.10
360	<0.10	<0.10
365	<0.10	<0.10
370	<0.10	<0.10
375	<0.10	<0.10
380	<0.10	<0.10
385	<0.10	<0.10
390	<0.10	<0.10
395	<0.10	<0.10
400	0.43	0.43

Comment :The submitted sample was considered acceptable to make a claim of "UV 400" protection, the criteria of which was mentioned above.

Date sample received : Jan 28, 2025
Testing period : Jan 28, 2025 to Feb 10, 2025

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(2) Requirements for Sunglasses (Uniformly Tinted Lenses)

Test standard: BS EN ISO 12312-1:2013+A1:2015 – Eye and face protection – Sunglasses and related eyewear – Part 1: Sunglasses for general use

Test method refers ISO 12311:2013 Personal protective equipment - Test methods for sunglasses and related eyewear.

Number of samples tested: Four (4) pairs

Note :

(1) The submitted sunglasses were declared by applicant for adult use.

(2) Physiological compatibility
Note: Sunglasses shall be designed and manufactured in such a way that when used under the conditions and for the purposes intended, they will not compromise the health (and safety) of the wearer. The risks posed by substances leaking from the device that may come into prolonged contact with the skin shall be reduced by the manufacturer to below any regulatory limit. Special attention shall be given to substances which are allergenic, carcinogenic, mutagenic or toxic to reproduction.

(3) CE marking or UKCA marking is not specified in BS EN ISO 12312-1:2013+A1:2015. However, per Regulation (EU) 2016/425 or UK2019 SI696 Schedule 35 Regulation 38, the CE marking or UKCA marking shall be affixed visibly, legibly and indelibly to the sunglasses frame respectively.

It was found that both CE marking and UKCA marking were provided on the sunglasses frame.

Clause	Requirement	Result
4	Construction and materials	
4.1	Construction	P
4.2	Filter material and surface quality	P
4.3	Physiological compatibility	Note (2)
5	Transmittance	
5.2	Transmittance and filter categories	P
5.3	General transmittance requirements	
5.3.1	Uniformity of luminous transmittance	P
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	P
5.3.3	Wide angle scattering	P
5.3.4	Additional transmittance requirements for specific filter types	
5.3.4.1	Photochromic filters	NA
5.3.4.2	Polarizing filters	NA
5.3.4.3	Gradient filters	NA
5.3.5	Claimed transmittance properties	NA (No claim)
6	Refractive power	

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Clause	Requirement	Result
6.1	Spherical and astigmatic power	P
6.2	Local variations in refractive power	NA
6.3	Prism imbalance (relative prism error)	P
7	Robustness	
7.1	Minimum robustness of filters	P
7.2	Frame deformation and retention of filters	P
7.3	Impact resistance of the filter, strength level 1 (optional specification)	NA (No claim)
7.4	Increased endurance of sunglasses (optional specification)	NA (No claim)
7.5	Resistance to perspiration (optional specification)	NA (No claim)
7.6	Impact resistance of the filter, strength level 2 or 3 (optional specification)	NA (No claim)
8	Resistance to solar radiation	P
9	Resistance to ignition	P
10	Resistance to abrasion (optional specification)	NA (No claim)
11	Protective requirements	
11.1	Coverage area	P
11.2	Temporal protective requirements	NA
12	Information and labeling	
12.1	Information to be supplied with each pair of sunglasses	P
12.2	Additional information	#1

Abbreviation: P = Pass; NA = Not Applicable

Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (Tv)	27.65	27.82	2

Range	Maximum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (T_{SUVB})	< 0.10	< 0.10	≤ 0.05Tv (1.38)	≤ 0.05Tv (1.39)
315 - 380nm (T_{SUVA})	< 0.10	< 0.10	≤ 0.5Tv (13.83)	≤ 0.5Tv (13.91)

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Requirement:

Consumer label	Technical label	Requirements		
Descriptive label	Filter category	Ultraviolet spectral range		Visible spectral range
		Maximum value of solar UV-B transmittance T_{SUVB} 280 nm to 315 nm	Maximum value of solar UV-A transmittance T_{SUVA} 315 nm to 380 nm	Range of luminous transmittance (Tv) 380 nm to 780 nm
Light tint sunglasses	0	0.05 Tv	Tv	Tv > 80%
	1	0.05 Tv	Tv	43% < Tv ≤ 80%
General purpose sunglasses	2	1.0% absolute or 0.05 Tv, whichever is greater	0.5 Tv	18% < Tv ≤ 43%
	3	1.0% absolute	0.5 Tv	8% < Tv ≤ 18%
Very dark special purpose sunglasses	4	1.0% absolute	1.0% absolute or 0.25 Tv, whichever is greater	3% < Tv ≤ 8%

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit (%)
% variation within filter [relative to higher value]	1.30	1.97	≤ 10
% difference between filters [relative to lighter filter]	0.58		≤ 15

5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	25.69	25.70	≥ 0.2 Tv (5.53)	≥ 0.2 Tv (5.56)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Limit
	Left ocular	Right ocular	
Red	1.06	1.06	≥ 0.80
Yellow	0.99	0.99	≥ 0.60
Blue	1.06	1.06	≥ 0.60
Green	1.00	1.00	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	0.9	0.8	≤ 3

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6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power (m^{-1})	-0.09	-0.09	± 0.12
Astigmatic power (m^{-1})	0.03	0.01	≤ 0.12
Difference of spherical power between left and right filters (m^{-1})	0		≤ 0.18

6.3 Prism imbalance (relative prism error)

Prismatic power difference (cm/m)			Limit (cm/m)
Horizontal	Base out	- -	≤ 1.00
	Base in	0.05	≤ 0.25
Vertical		0.10	≤ 0.25

8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	-0.16	Requirement ± 3% for category 0 ± 5% for category 1 ± 8% for category 2 ± 10% for categories 3 & 4
Right ocular (%)	+0.22	

(b) Wide angle scattering after solar radiation

Left ocular (%)	Right ocular (%)	Requirement (%)
0.8	0.8	≤ 3

(c) After the solar radiation process, the submitted sample also met the requirement for the ultraviolet spectral range for Tv as given by table 1 of the standard.

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Remark:

#1 - The following information shall be available from the manufacturer on request.

a) An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.
b) The position of the reference point when different from the one defined in this part of ISO 12312.
c) The country of origin (e.g. "made in .. .. ").
d) The nominal value of luminous transmittance.
e) Transmission requirements applicable to this product.
f) Polarization efficiency in cases of polarizing filters.
g) The base material of filters and frame.

∞ - Decision rule required by the standard

If the measurement result plus or minus the uncertainty of measurement overlap the limit value of the test, the result shall be deemed to be a failure.

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End of report

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