

CLASSIFICATION: 08 56 00 Special Function Windows

PRODUCT DESCRIPTION: Halio is smart-tinting glass that features a variable light transmission rate and solar heat gain coefficient. Based on electrochromic technologies, Halio looks like ordinary clear glass until it tints to block unwanted solar heat and reduce glare, achieving its darkest shade within 3 minutes. Managing daylight with Halio improves occupant comfort while achieving the highest levels of energy efficiency. The materials named in this document are applicable to all Halio and Halio Black insulated glass unit configurations; the ranges provided are to accommodate the available dimensions.

Section 1: Summary

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format

- Nested Materials Method
- Basic Method

Threshold Disclosed Per

- Material
- Product

Threshold level

- 100 ppm
- 1,000 ppm
- Per GHS SDS
- Per OSHA MSDS
- Other

Residuals/Impurities

Residuals/Impurities Considered in 7 of 7 Materials

Explanation(s) provided for Residuals/Impurities?
 Yes No

All Substances Above the Threshold Indicated Are:

Characterized Yes Ex/SC Yes No
% weight and role provided for all substances.

Screened Yes Ex/SC Yes No
All substances screened using Priority Hazard Lists with results disclosed.

Identified Yes Ex/SC Yes No
One or more substances not disclosed by Name (Specific or Generic) and Identifier and/ or one or more Special Condition did not follow guidance.

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | SUBSTANCE | RESIDUAL OR IMPURITY
GREENSCREEN SCORE | HAZARD TYPE

GLASS [FLOAT GLASS LT-UNK | CAN] PVB [ACETIC ACID ETHENYL ESTER, POLYMER WITH 1,1-BIS(ETHENYLOXY)BUTANE AND ETENOL (POLYVINYL BUTYRAL) LT-UNK 2,2'-ETHYLENEDIOXYDIETHYL BIS(2-ETHYLHEXANOATE) LT-UNK CALCIUM CARBONATE BM-3]
UNDISCLOSED [FSOLV LT-UNK TOTAL SALT LT-P1 | MAM | SKI | REP POLYMER LT-P1 | REP] METAL SPACER [ALUMINUM LT-P1 | END | PHY | RES] THERMOPLASTIC SPACER [1-PROPENE, 2-METHYL-, HOMOPOLYMER (POLYISOBUTYLENE POLYMER) LT-UNK CARBON BLACK LT-1 | CAN] SEALANT [SILOXANES AND SILICONES, DI-ME, HYDROXY-TERMINATED BM-2 CALCIUM CARBONATE BM-3]
DESICCANT [ZEOLITE LT-UNK]

Number of Greenscreen BM-4/BM3 contents ... 2

Contents highest concern GreenScreen Benchmark or List translator Score ... LT-1
Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Not all substances are "Identified", as several proprietary substances are designated as "undisclosed" to protect confidential information. These materials were fully screened using the HPD Builder. Residuals were considered for all materials and added where they were present above the stated disclosure threshold. The scope of this HPD is all Halio and Halio Black insulated glass unit products produced by Kinestral Technologies, Inc.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE *See Section 3 for additional listings.*

VOC emissions: VOC Emissions

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients, Option 1

Third Party Verified?

- Yes

PREPARER: Self-Prepared

VERIFIER:

VERIFICATION #:

SCREENING DATE: 2019-05-17

PUBLISHED DATE: 2019-05-17

EXPIRY DATE: 2022-05-17



Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- Basic Inventory method with Product-level threshold.
- Nested Material Inventory method with Product-level threshold
- Nested Material Inventory method with individual Material-level thresholds

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-standard

GLASS

#: 92.00 - 97.00

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals were considered following the HPD Collaborative Emerging Best Practices. No residuals were determined to be present above the 1000ppm threshold.

OTHER MATERIAL NOTES: The material percent range varies depending on product dimensions and configuration.

FLOAT GLASS

ID: 65997-17-3

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2019-05-17

#: 100.00 - 100.00

GS: LT-UNK

RC: UNK

NANO: No

ROLE: Structural Glass

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	EU - GHS (H-Statements)	H351 - Suspected of causing cancer

SUBSTANCE NOTES:

PVB

#: 2.00 - 5.00

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals were considered following the HPD Collaborative Emerging Best Practices. No residuals were determined to be present above the 1000ppm threshold.

OTHER MATERIAL NOTES: The material percent range varies depending on product dimensions and configuration.

ACETIC ACID ETHENYL ESTER, POLYMER WITH 1,1-BIS(ETHENYLOXY)BUTANE AND ETHENOL (POLYVINYL BUTYRAL)

ID: 27360-07-2

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2019-05-17**

#: **70.00 - 80.00**

GS: **LT-UNK**

RC: **None**

NANO: **No**

ROLE: **Film**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

2,2'-ETHYLENEDIOXYDIETHYL BIS(2-ETHYLHEXANOATE)

ID: 94-28-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2019-05-17**

#: **15.00 - 30.00**

GS: **LT-UNK**

RC: **None**

NANO: **No**

ROLE: **Additive**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

CALCIUM CARBONATE

ID: 471-34-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2019-05-17**

#: **0.00 - 5.00**

GS: **BM-3**

RC: **None**

NANO: **No**

ROLE: **Filler**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

UNDISCLOSED

#: **0.10 - 5.00**

PRODUCT THRESHOLD: **1000 ppm**

RESIDUALS AND IMPURITIES CONSIDERED: **Yes**

RESIDUALS AND IMPURITIES NOTES: **All residuals are considered and are below the 1000 ppm reporting threshold.**

OTHER MATERIAL NOTES: **Range varies due to product size and configuration**

FSOLVID: **Undisclosed**HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **55.00 - 70.00**GS: **LT-UNK**RC: **None**NANO: **No**ROLE: **Solvent**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found**No warnings found on HPD Priority Hazard Lists**SUBSTANCE NOTES: **This substance is undisclosed to protect confidential information****TOTAL SALT**ID: **Undisclosed**HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **10.00 - 25.00**GS: **LT-P1**RC: **None**NANO: **No**ROLE: **Salt**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

MAMMALIAN**EU - GHS (H-Statements)****H301 - Toxic if swallowed****MAMMALIAN****EU - GHS (H-Statements)****H311 - Toxic in contact with skin****SKIN IRRITATION****EU - GHS (H-Statements)****H314 - Causes severe skin burns and eye damage****REPRODUCTIVE****Japan - GHS****Toxic to reproduction - Category 1**SUBSTANCE NOTES: **This substance is undisclosed to protect confidential information****POLYMER**ID: **Undisclosed**HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **10.00 - 25.00**GS: **LT-P1**RC: **None**NANO: **No**ROLE: **Polymer**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

REPRODUCTIVE**New Zealand - GHS****6.8A - Known or presumed human reproductive or developmental toxicants**SUBSTANCE NOTES: **This substance is undisclosed to protect confidential information****METAL SPACER**%: **0.00 - 1.00**PRODUCT THRESHOLD: **1000 ppm**RESIDUALS AND IMPURITIES CONSIDERED: **Yes**RESIDUALS AND IMPURITIES NOTES: **Residuals were considered following the HPD Collaborative Emerging Best Practices. No residuals were determined to be present above the 1000ppm threshold**

OTHER MATERIAL NOTES: The material percent range varies depending on product dimensions and configuration.

ALUMINUM

ID: 7429-90-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2019-05-17**

#: **100.00 - 100.00**

GS: **LT-P1**

RC: **None**

NANO: **No**

ROLE: **Metal Alloy**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H228 - Flammable solid
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air
PHYSICAL HAZARD (REACTIVE)	EU - GHS (H-Statements)	H261 - In contact with water releases flammable gases
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced

SUBSTANCE NOTES:

THERMOPLASTIC SPACER

#: **0.00 - 1.00**

PRODUCT THRESHOLD: **1000 ppm**

RESIDUALS AND IMPURITIES CONSIDERED: **Yes**

RESIDUALS AND IMPURITIES NOTES: **Residuals are considered and are below the 1000ppm reporting threshold.**

OTHER MATERIAL NOTES: **The material percent range varies depending on product dimensions and configuration.**

1-PROPENE, 2-METHYL-, HOMOPOLYMER (POLYISOBUTYLENE POLYMER)

ID: 9003-27-4

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **45.00 - 65.00**GS: **LT-UNK**RC: **None**NANO: **No**ROLE: **Polymer**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES:

CARBON BLACK

ID: 1333-86-4

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **25.00 - 45.00**GS: **LT-1**RC: **None**NANO: **No**ROLE: **Filler**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

CANCER

US CDC - Occupational Carcinogens

Occupational Carcinogen

CANCER

CA EPA - Prop 65

Carcinogen - specific to chemical form or exposure route

CANCER

IARC

Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources

CANCER

MAK

Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES:

SEALANT%: **0.00 - 1.00**PRODUCT THRESHOLD: **1000 ppm**RESIDUALS AND IMPURITIES CONSIDERED: **Yes**RESIDUALS AND IMPURITIES NOTES: **Residuals were considered following the HPD Collaborative Emerging Best Practices. No residuals were determined to be present above the 1000ppm threshold.**OTHER MATERIAL NOTES: **The material percent range varies depending on product dimensions and configuration.**

SILOXANES AND SILICONES, DI-ME, HYDROXY-TERMINATED

ID: 70131-67-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **50.00 - 60.00**GS: **BM-2**RC: **None**NANO: **No**ROLE: **Base**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found**No warnings found on HPD Priority Hazard Lists**

SUBSTANCE NOTES:

CALCIUM CARBONATE

ID: 471-34-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **40.00 - 50.00**GS: **BM-3**RC: **None**NANO: **No**ROLE: **Filler**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found**No warnings found on HPD Priority Hazard Lists**

SUBSTANCE NOTES:

DESICCANT%: **0.00 - 0.50**PRODUCT THRESHOLD: **1000 ppm**RESIDUALS AND IMPURITIES CONSIDERED: **Yes**

RESIDUALS AND IMPURITIES NOTES: Residuals were considered following the HPD Collaborative Emerging Best Practices. No residuals were determined to be present above the 1000ppm threshold.

OTHER MATERIAL NOTES: The material percent range varies depending on product dimensions and configuration.

ZEOLITE

ID: 1318-02-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2019-05-17**%: **100.00 - 100.00**GS: **LT-UNK**RC: **None**NANO: **No**ROLE: **Desiccant**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found**No warnings found on HPD Priority Hazard Lists**

SUBSTANCE NOTES:

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS

VOC Emissions

CERTIFYING PARTY: **Self-declared**

ISSUE DATE: **0000-**

EXPIRY DATE:

CERTIFIER OR LAB: **None**

APPLICABLE FACILITIES: **All Facilities**

01-01

CERTIFICATE URL:

CERTIFICATION AND COMPLIANCE NOTES: **n/a**

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

No accessories are required for this product.

Section 5: General Notes

This Health Product Declaration was developed by Sustainable Solutions Corporation of Royersford, PA.



MANUFACTURER INFORMATION

MANUFACTURER: **Kinestral Technologies**
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KEY

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Hazard Types

AQU Aquatic toxicity	GLO Global warming	PHY Physical Hazard (reactive)
CAN Cancer	MAM Mammalian/systemic/organ toxicity	REP Reproductive toxicity
DEV Developmental toxicity	MUL Multiple hazards	RES Respiratory sensitization
END Endocrine activity	NEU Neurotoxicity	SKI Skin sensitization/irritation/corrosivity
EYE Eye irritation/corrosivity	OZO Ozone depletion	LAN Land Toxicity
GEN Gene mutation	PBT Persistent Bioaccumulative Toxic	NF Not found on Priority Hazard Lists

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible Benchmark 1
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator Likely Benchmark 1
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS Unknown (no data on List Translator Lists)
BM-U Benchmark Unspecified (insufficient data to benchmark)	

Recycled Types

PreC Preconsumer (Post-Industrial)
PostC Postconsumer
Both Both Preconsumer and Postconsumer
Unk Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- a method for the assessment of exposure or risk associated with product handling or use,
- a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.