

HPD UNIQUE IDENTIFIER: (to be provided)

CLASSIFICATION: 06 61 19 Quartz Surfacing Fabrication

PRODUCT DESCRIPTION: Radianz® Quartz Surfaces is comprised of natural quartz, unsaturated polyester resins, and mineral pigments fused together by a precision compression molding process to create a high-quality product. Natural quartz, with purity of 99.9%, is the main component that results in a non-porous and ultra-durable material that is ideal for countertops, kitchen systems, furniture, wallcladding and various other interior finishes for residential and commercial applications. Manufacturer of Radianz®, Lotte is committed to be the "Green Movement" and is constantly striving to improve the environment and keep our nature pristine.

Section 1: Summary

Basic 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
- Other

Residuals/Impurities

- Considered
- Partially Considered
- Not Considered

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

RADIANZ® QUARTZ SURFACES [QUARTZ LT-1 | CAN POLYESTER NoGS GRANITE NoGS GLASS / MINERAL FIBER (POST-CONSUMER RECYCLED) LT-UNK UNDISCLOSED LT-1 | RES | CAN | GEN | REP UNDISCLOSED LT-P1 | MUL UNDISCLOSED LT-UNK FERUMOXYTOL LT-UNK | CAN IRON OXIDE (FE2O3), HYDRATE NoGS NICKEL RUTILE YELLOW LT-1 | RES | CAN HYDRATED FERRIC OXIDE LT-UNK TITANIUM DIOXIDE LT-1 | CAN | END CARBON BLACK BM-1 | CAN]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... BM-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:
Substances percent weight are provided

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: GreenGuard - Gold (previously Children & Schools)
Other: ANSI/NSF 51-2012 Food equipment materials

CONSISTENCY WITH OTHER PROGRAMS

No pre-checks completed or disclosed.

Third Party Verified?

- Yes
- No

PREPARER: Self-Prepared

VERIFIER:

VERIFICATION #:

SCREENING DATE: 2020-06-02

PUBLISHED DATE: 2020-06-04

EXPIRY DATE: 2023-06-02



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 2.1.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-1-standard

RADIANZ® QUARTZ SURFACES

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: The material inputs for Radianz® product are reacted in the manufacturing process preventing any exposure of health hazards of the final product. Radianz® products have earned GREENGUARD® and GREENGUARD® GOLD certifications as low-emitting interior building products, which ensures that the products comply with strict chemical and particle emission criteria for indoor air quality.

OTHER PRODUCT NOTES: All suppliers of the raw materials used in the manufacture of Radianz® are supervised under a strict Lotte quality control programme. Materials are inspected by both internal/external examining bodies RoHS (Restricting the use of Hazardous Substances) and NSF (National Sanitation Foundation, USA) ensuring that Staron® manufacturing meets the environmental standards required.

QUARTZ

ID: 14808-60-7

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2020-06-02

#: 85.0000 - 95.0000

GS: LT-1

RC: None

NANO: No

SUBSTANCE ROLE: Filler

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources
CANCER	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CANCER	GHS - New Zealand	6.7A - Known or presumed human carcinogens
CANCER	GHS - Japan	Carcinogenicity - Category 1A [H350]
CANCER	GHS - Australia	H350i - May cause cancer by inhalation

SUBSTANCE NOTES: Inorganic reinforcing filler - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

POLYESTER

ID: 113669-95-7

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2020-06-02**%: **3.0000 - 10.0000**GS: **NoGS**RC: **None**NANO: **No**SUBSTANCE ROLE: **Binder**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Polymer - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

GRANITEID: **Not registered**HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2020-06-02**%: **0.0000 - 30.0000**GS: **NoGS**RC: **None**NANO: **No**SUBSTANCE ROLE: **Filler**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Inorganic reinforcing filler - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

GLASS / MINERAL FIBER (POST-CONSUMER RECYCLED)ID: **65997-17-3**HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2020-06-02**%: **0.0000 - 30.0000**GS: **LT-UNK**RC: **None**NANO: **No**SUBSTANCE ROLE: **Filler**

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Inorganic reinforcing filler - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

UNDISCLOSEDHAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**HAZARD SCREENING DATE: **2020-06-02**%: **0.0000 - 1.0000**GS: **LT-1**RC: **None**NANO: **No**SUBSTANCE ROLE: **Tensile strength additive**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
RESPIRATORY	AOEC - Asthmagens	Asthmagen (G) - generally accepted
CANCER	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
RESPIRATORY	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
GENE MUTATION	MAK	Germ Cell Mutagen 3a
CANCER	GHS - Australia	H350i - May cause cancer by inhalation
REPRODUCTIVE	GHS - Australia	H360Fd - May damage fertility. Suspected of damaging the unborn child

SUBSTANCE NOTES: Additive - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

UNDISCLOSED

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

HAZARD SCREENING DATE: **2020-06-02**

#: **0.0000 - 1.0000**

GS: **LT-P1**

RC: **None**

NANO: **No**

SUBSTANCE ROLE: **Curing agent**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
MULTIPLE	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters

SUBSTANCE NOTES: Curing agent - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

UNDISCLOSED

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

HAZARD SCREENING DATE: **2020-06-02**

#: **0.0000 - 1.0000**

GS: **LT-UNK**

RC: **None**

NANO: **No**

SUBSTANCE ROLE: **Curing agent**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Cross link agent - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

FERUMOXYTOL

ID: **1309-38-2**

%: **0.0000 - 1.0000**GS: **LT-UNK**RC: **None**NANO: **No**SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

IRON OXIDE (FE2O3), HYDRATEID: **12259-21-1**%: **0.0000 - 1.0000**GS: **NoGS**RC: **None**NANO: **No**SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

NICKEL RUTILE YELLOWID: **8007-18-9**%: **0.0000 - 1.0000**GS: **LT-1**RC: **None**NANO: **No**SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
RESPIRATORY	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
CANCER	US NIH - Report on Carcinogens	Known to be a human Carcinogen

SUBSTANCE NOTES: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

HYDRATED FERRIC OXIDEID: **20344-49-4**

%: 0.0000 - 1.0000

GS: LT-UNK

RC: None

NANO: No

SUBSTANCE ROLE: Pigment

HAZARD TYPE

AGENCY AND LIST TITLES

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

TITANIUM DIOXIDE

ID: 13463-67-7

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2020-06-02

%: 0.0000 - 1.0000

GS: LT-1

RC: None

NANO: No

SUBSTANCE ROLE: Pigment

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

ENDOCRINE

TEDX - Potential Endocrine Disruptors

Potential Endocrine Disruptor

CANCER

MAK

Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value

CANCER

MAK

Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels

SUBSTANCE NOTES: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

CARBON BLACK

ID: 1333-86-4

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2020-06-02

%: 0.0000 - 1.0000

GS: BM-1

RC: None

NANO: No

SUBSTANCE ROLE: Pigment

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: Colorant - percent range would slightly vary due to various colors available. The material inputs for Radianz® Quartz (agglomerated stone) product are comprised of reacted monomers and resins, inert mineral fillers, and colorants. The final product of Radianz® is nontoxic and non-allergic to humans. Quartz engineered stone, etc. have silicosis concerns during the production, therefore all of this type of materials is to be cut, fabricated, polished, etc. in the presence of water.

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

GreenGuard - Gold (previously Children & Schools)

CERTIFYING PARTY: **Third Party** ISSUE DATE: **2007-09-18** EXPIRY DATE: **2020-09-18** CERTIFIER OR LAB: **UL Environment**

APPLICABLE FACILITIES: **Building products and Interior finishes**

CERTIFICATE URL: https://spot.ul.com/main-app/products/detail/5ad1e81d55b0e82d946a0b6f?page_type=Products%20Catalog

CERTIFICATION AND COMPLIANCE NOTES: **Greenguard Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings**

OTHER

ANSI/NSF 51-2012 Food equipment materials

CERTIFYING PARTY: **Third Party** ISSUE DATE: **2009-08-25** EXPIRY DATE: **2021-08-25** CERTIFIER OR LAB: **NSF International**

APPLICABLE FACILITIES: **Most colors of Radianz® Quartz are NSF/ANSI 51 certified, which proves the product is safe for use in areas of contact with food, such as kitchens and restaurants.**

CERTIFICATE URL: <http://www.nsf.org/>

CERTIFICATION AND COMPLIANCE NOTES: **Most colors of Radianz® Quartz are NSF/ANSI 51 certified, which proves the product is safe for use in areas of contact with food, such as kitchens and restaurants.**

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

Radianz® is GREENGUARD Gold certified and is therefore scientifically proven to meet some of the world's most rigorous, third-party chemical emission standards – helping reduce indoor air pollution and the risk of chemical exposure while aiding in the creation of healthier indoor environments. GREENGUARD Gold certification standard includes health based criteria for additional chemicals and also requires lower total VOC (volatile organic compounds) emissions levels to ensure products are acceptable for use in environments such as schools and healthcare facilities.



MANUFACTURER INFORMATION

MANUFACTURER: **Lotte Chemical Corp.**
 ADDRESS: **6 Centerpointe Dr. Suite 100**
La Palma CA 90623, USA
 WEBSITE: **www.staron.com**

CONTACT NAME: **Daniel Hong**
 TITLE: **TS Manager**
 PHONE: **714-443-0962**
 EMAIL: **daniel.hong@lotte.net**

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

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

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-1 List Translator 1 (Likely Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-UNK List Translator Benchmark Unknown (the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LTP1 score.)
BM-2 Benchmark 2 (use but search for safer substitutes)	NoGS No GreenScreen.
BM-1 Benchmark 1 (avoid - chemical of high concern)	
BM-U Benchmark Unspecified (due to insufficient data)	
LT-P1 List Translator Possible 1 (Possible Benchmark-1)	

Recycled Types

PreC Pre-consumer recycled content
PostC Post-consumer recycled content
UNK Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms:

GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

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.