1. Identification

Product identifier: GREENLITE-45-L PLUS

Other means of identification

- Brand Code: 5469, 062A
- Recommended use: For Industrial Use Only
- Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

- Company name: HarbisonWalker International
- Address: 1305 Cherrington Parkway, Suite 100
  Moon Township
  Pennsylvania
  15108
  US
- Telephone: General Phone: 412-375-6600
- Website: www.thinkHWI.com
- Emergency phone number: CHEMTREC 24 HOUR EMERGENCY # 1-800-424-9300

Supplier: Not available.

2. Hazard identification

Physical hazards: Not classified.

Health hazards:

- Carcinogenicity: Category 1A
- Specific target organ toxicity, repeated exposure: Category 1

Environmental hazards: Not classified.

Label elements

Signal word: Danger

Hazard statement: May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF exposed or concerned: Get medical advice/attention.

Storage: Store in a manner to minimize airborne dust.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards: None known.

Supplemental information: Crystalline silica may be present at low concentrations; most of this is encapsulated in the coarse aggregate or as part of the clays or sands.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Material name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mullite</td>
<td></td>
<td>1302-93-8</td>
<td>20 - 40</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED</td>
<td></td>
<td>69012-64-2</td>
<td>2.5 - 10</td>
</tr>
</tbody>
</table>
Crystalline silica may be present at low concentrations; most of this is encapsulated in the coarse aggregate or as part of the clays or sands.

### 4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact**
Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Prolonged exposure may cause chronic effects. Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

**Indication of immediate medical attention and special treatment needed**
IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

**Suitable extinguishing media**
Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media**
Not available.

**Specific hazards arising from the chemical**
Not applicable.

**Special protective equipment and precautions for firefighters**
Not available.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation.

**Methods and materials for containment and cleaning up**
Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. Avoid discharge into drains, water courses or onto the ground.

**Environmental precautions**
Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Store in original tightly closed container.

### 8. Exposure controls/personal protection

#### Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mullite (CAS 1302-93-8)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Respirable fraction</td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

**Material name:** GREENLITE-45-L PLUS

**5469, 062A**  **Version #: 01**  **Issue date: 03-15-2019**
<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Canada. Alberta OELs (Occupational Health &amp; Safety Code, Schedule 1, Table 2)</td>
<td></td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Components</td>
<td></td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)</td>
<td></td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Mullite (CAS 1302-93-8)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 69012-64-2)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Total fume</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 7631-86-9)</td>
<td>TWA</td>
<td>4 mg/m³</td>
<td>Total</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 69012-64-2)</td>
<td>TWA</td>
<td>1.5 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>10 mg/m³</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Total dust</td>
</tr>
<tr>
<td>Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)</td>
<td></td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Mullite (CAS 1302-93-8)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)</td>
<td></td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>Mullite (CAS 1302-93-8)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 69012-64-2)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable</td>
</tr>
</tbody>
</table>
### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 7631-86-9)</td>
<td>TWA</td>
<td>6 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>SILICA, AMORPHOUS, FUMED (CAS 69012-64-2)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable dust and/or fume.</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>Titanium Dioxide (CAS 13463-67-7)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended.

**Skin protection**

**Hand protection**

Suitable gloves can be recommended by the glove supplier. Use of an impervious apron is recommended.

**Respiratory protection**

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 9. Physical and chemical properties

**Appearance**

- **Physical state**: Solid.
- **Form**: Solid.
- **Color**: Grey.
- **Odor**: Not available.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: Not available.
Initial boiling point and boiling range
Not available.
Flash point
Not available.
Evaporation rate
Not available.
Flammability (solid, gas)
Not available.
Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.
Flammability limit - upper (%)
Not available.
Explosive limit - lower (%)
Not available.
Explosive limit - upper (%)
Not available.
Vapor pressure
Not available.
Vapor density
Not available.
Relative density
Not available.
Solubility(ies)
Solubility (water)
Not available.
Partition coefficient (n-octanol/water)
Not available.
Auto-ignition temperature
Not available.
Decomposition temperature
Not available.
Viscosity
Not available.
Other information
Explosive properties
Not explosive.
Oxidizing properties
Not oxidizing.

10. Stability and reactivity
Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability
Material is stable under normal conditions.
Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.
Conditions to avoid
Contact with incompatible materials.
Incompatible materials
Powerful oxidizers. Chlorine.
Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.
Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information
Information on likely routes of exposure
Inhalation
Prolonged inhalation may be harmful.
Skin contact
No adverse effects due to skin contact are expected.
Eye contact
Direct contact with eyes may cause temporary irritation.
Ingestion
Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics
Direct contact with eyes may cause temporary irritation.
Information on toxicological effects
Acute toxicity
Not known.
Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation
Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization
Canada - Alberta OELs: Irritant
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) Irritant
Titanium Dioxide (CAS 13463-67-7) Irritant

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

ACGIH Carcinogens
Mullite (CAS 1302-93-8) A4 Not classifiable as a human carcinogen.
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) A2 Suspected human carcinogen.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) A2 Suspected human carcinogen.
Titanium Dioxide (CAS 13463-67-7) A4 Not classifiable as a human carcinogen.

Canada - Alberta OELs: Carcinogen category
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) Suspected human carcinogen.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity
Mullite (CAS 1302-93-8) Not classifiable as a human carcinogen.
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) Suspected human carcinogen.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) Suspected human carcinogen.
Titanium Dioxide (CAS 13463-67-7) Not classifiable as a human carcinogen.

Canada - Quebec OELs: Carcinogen category
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) Detected carcinogenic effect in animals.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) Suspected carcinogenic effect in humans.

IARC Monographs. Overall Evaluation of Carcinogenicity
SILICA, AMORPHOUS, FUMED (CAS 69012-64-2) 3 Not classifiable as to carcinogenicity to humans.
SILICA, AMORPHOUS, FUMED (CAS 7631-86-9) 3 Not classifiable as to carcinogenicity to humans.
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) 1 Carcinogenic to humans.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) 1 Carcinogenic to humans.
Titanium Dioxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens
SILICA, CRYSTALLINE, CRISTOBALITE (CAS 14464-46-1) Known To Be Human Carcinogen.
SILICA, CRYSTALLINE, QUARTZ (CAS 14808-60-7) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Developmental effects
SILICA, CRYSTALLINE, QUARTZ 0

Developmental effects - EU category
SILICA, CRYSTALLINE, QUARTZ 0
12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions
This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code
Since this product is used in several industries, no Waste Code can be provided by the supplier. The Waste Code should be determined in arrangement with your waste disposal partner or the responsible authority.

Waste from residues / unused products
Not available.

Contaminated packaging
Not available.

14. Transport information

TDG
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

15. Regulatory information

Canadian regulations
Controlled Drugs and Substances Act
Not regulated.

Export Control List (CEPA 1999, Schedule 3)
Not listed.

Greenhouse Gases
Not listed.

Precursor Control Regulations
Not regulated.

International regulations
Stockholm Convention
Not applicable.
Rotterdam Convention
Not applicable.
Kyoto protocol
Not applicable.
Montreal Protocol
Not applicable.
Basel Convention
Not applicable.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date
03-15-2019

Version #
01

Disclaimer
This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Revision information
Product and Company Identification: Product Codes