PermaBase® BRAND Cement Board is a rigid substrate made of Portland cement, aggregate and glass mesh. It has an exceptionally hard, durable surface that can withstand prolonged exposure to moisture. Use it as an underlayment or backing surface in a variety of interior and exterior applications, including (but not limited to) tub and shower surrounds, countertops, flooring, and for cement board stucco and masonry veneer wall systems. This HPD covers 5/8” and 1/2” PermaBase® BRAND Cement Board.

### 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.

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SUBSTANCE</th>
<th>RESIDUAL OR IMPURITY</th>
<th>GREENSCREEN SCORE</th>
<th>HAZARD TYPE</th>
</tr>
</thead>
</table>
| PERMABASE CEMENTITIOUS CORE | QUARTZ | CAN | LT-1 | CAN | FLY ASH | LT-1 | UNK | PORTLAND CEMENT | LT-P1 | CAN | END | HIGH-ALUMINA CEMENT | LT-1 | CAN | POLYSTYRENE | LT-UNK | CAN | CALCIUM HYDROXIDE | LT-P1 | 2-
| NAPHTHALENESULFONIC ACID, POLYMER WITH FORMALDEHYDE, SODIUM SALT | LT-P1 | PBT | FIBERGLASS SCRIM | CLASS / MINERAL FIBER | LT-UNK | CAN | PVC RELATED POLYMERS | NOCS | DIISONONYL PHTHALATE | DINP-1, MIXTURE OF ISOMERS AS MANUFACTURED | LT-1 | CAN | DEL | MUL | END | REP | BARIUM ZINC COMPLEX | NOCS | UNDISCLOSED | LT-UNK | CAN |

### VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

### CERTIFICATIONS AND COMPLIANCE

- VOC emissions: GREENGUARD Certified
- VOC emissions: GREENGUARD Gold Certified
- Other: UL Evaluation Report (UL ER22158-01)

### CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients, Option 1
### 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](http://www.hpd-collaborative.org/hpd-2-1-standard)

<table>
<thead>
<tr>
<th>Material</th>
<th>%:</th>
<th>HPD URL:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERMABASE CEMENTITIOUS CORE</strong></td>
<td><strong>97.5000 - 99.5000</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MATERIAL THRESHOLD:</strong></td>
<td>1000 ppm</td>
<td></td>
</tr>
<tr>
<td><strong>RESIDUALS AND IMPURITIES CONSIDERED:</strong></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>RESIDUALS AND IMPURITIES NOTES:</strong></td>
<td>No residuals or impurities are expected to be present at or above the Content Inventory Threshold indicated that have a GS score of BM-1, LT-1 or LT-P1 that are not otherwise disclosed as intentionally added ingredients (Quartz/Silica), based on batch testing and supplier SDS.</td>
<td></td>
</tr>
<tr>
<td><strong>OTHER MATERIAL NOTES:</strong></td>
<td>Percent by weight of substances reported as range to protect the proprietary nature of this formulation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>%:</th>
<th>GS:</th>
<th>RC:</th>
<th>NANO:</th>
<th>ROLE:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QUARTZ</strong></td>
<td><strong>50.0000 - 60.0000</strong></td>
<td>LT-1</td>
<td>None</td>
<td>No</td>
<td>Filler; Impurity/Residual</td>
</tr>
<tr>
<td><strong>HAZARDS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Occupational Carcinogen</td>
</tr>
<tr>
<td><strong>US CDC - Occupational Carcinogens</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Known to be Human Carcinogen (respirable size - occupational setting)</td>
</tr>
<tr>
<td><strong>US NIH - Report on Carcinogens</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carcinogen Group 1 - Substances that cause cancer in man</td>
</tr>
<tr>
<td><strong>MAK</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carcinogen - specific to chemical form or exposure route</td>
</tr>
<tr>
<td><strong>CA EPA - Prop 65</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources</td>
</tr>
<tr>
<td><strong>IARC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.7A - Known or presumed human carcinogens</td>
</tr>
<tr>
<td><strong>New Zealand - GHS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CANCER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H350 - May cause cancer</td>
</tr>
<tr>
<td><strong>Australia - GHS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBSTANCE NOTES:** Masonry sand; Crystallized silicon dioxide. Natural substance that is widely used in metal extraction, paints, polymers, cleaning agents, coloring agents, and fillers. Quartz is one of several compounds with warnings restricted to respirable forms (Pharos CML). Exposures to respirable crystalline silica are not expected during the recommended use of this product. Awaiting full GreenScreen Assessment for form specific hazards for this compound (http://ow.ly/Z5ken). May also represent impurity of other components of this material.

<table>
<thead>
<tr>
<th>Material</th>
<th>%:</th>
<th>GS:</th>
<th>RC:</th>
<th>NANO:</th>
<th>ROLE:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FLY ASH</strong></td>
<td><strong>25.0000 - 35.0000</strong></td>
<td>LT-UNK</td>
<td>PreC</td>
<td>No</td>
<td>Binder</td>
</tr>
<tr>
<td><strong>HAZARDS:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>None Found</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBSTANCE NOTES:** Type C fly ash. All fly ash added to the product is a Pre-Consumer (Post-Industrial) byproduct of coal generated power plants. The percentage of this ingredient may vary depending on plant and raw material availability. The sum of heavy metals tested (Cadmium, Lead,
Chromium, Mercury) was found to be <0.01% in the finished product.

### PORTLAND CEMENT

<table>
<thead>
<tr>
<th>%: 5.0000 - 15.0000</th>
<th>GS: LT-P1</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Binder</th>
</tr>
</thead>
</table>

**HAZARDS:**

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

**ENDOCRINE**

| TEDX - Potential Endocrine Disruptors | Potential Endocrine Disruptor |

**SUBSTANCE NOTES:** Type I/II Portland Cement. The National Institute of Standards and Technology lists the composition of Portland Cement as including: Calcium Oxide (CAS No. 1305-78-8), 64%; Silicon Dioxide (7631-86-9), 20%; Aluminum Oxide (1344-28-1), 5%; Iron III Oxide (1309-37-1), 4%; Sulfur Trioxide (7446-11-9), 3%; Magnesium Oxide (1309-48-4), 1% (Pharos CML). The percentage of this ingredient may vary depending on plant and raw material availability.

### HIGH-ALUMINA CEMENT

<table>
<thead>
<tr>
<th>%: 1.0000 - 10.0000</th>
<th>GS: LT-UNK</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Binder, Set Accelerator</th>
</tr>
</thead>
</table>

**HAZARDS:**

None Found | No warnings found on HPD Priority lists |

**SUBSTANCE NOTES:**

### POLYSTYRENE

<table>
<thead>
<tr>
<th>%: 0.1000 - 1.0000</th>
<th>GS: LT-UNK</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Filler, Reduces Board Weight</th>
</tr>
</thead>
</table>

**HAZARDS:**

None Found | No warnings found on HPD Priority lists |

**SUBSTANCE NOTES:**

### CALCIUM HYDROXIDE

<table>
<thead>
<tr>
<th>%: 0.1000 - 1.0000</th>
<th>GS: LT-P1</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Accelerator</th>
</tr>
</thead>
</table>

**HAZARDS:**

None Found | No warnings found on HPD Priority lists |

**SUBSTANCE NOTES:** Hydrated lime. Identified on US EPA Safer Chemical Ingredient List.

### 2-NAPHTHALENESULFONIC ACID, POLYMER WITH FORMALDEHYDE, SODIUM SALT

<table>
<thead>
<tr>
<th>ID: 36290-04-7</th>
<th>PermaBase Cement Boards</th>
<th><a href="http://www.hpd-collaborative.org">www.hpd-collaborative.org</a></th>
</tr>
</thead>
</table>

HPD v2.1 created via HPDC Builder Page 3 of 8
### FIBERGLASS SCRIM

- **%:** 0.5000 - 2.5000
- **Material Threshold:** 100 ppm
- **Residuals and Impurities Considered:** Yes
- **Residuals and Impurities Notes:** Supplier HPD claims Residuals Disclosure as "Measured 100 ppm".
- **Other Material Notes:** Material information based on supplier’s published HPD (v1.0; 08/16/2016).

### GLASS / MINERAL FIBER

- **ID:** 65997-17-3
- **%:** 38.0000 - 45.0000
- **GS:** LT-UNK
- **RC:** None
- **Nano:** No
- **Role:** Core Yarn
- **Hazards:**
  - **Cancer**
    - EU - R-phrases: R40 - Limited Evidence of Carcinogenic Effects
    - EU - GHS (H-Statements): H351 - Suspected of causing cancer
- **Substance Notes:**

### PVC RELATED POLYMERS

- **ID:** 9002-86-2
- **%:** 33.0000 - 38.0000
- **GS:** NoGS
- **RC:** None
- **Nano:** No
- **Role:** Polymer
- **Hazards:** None Found
- **Substance Notes:**

### DIISONONYL PHTHALATE (DINP-1, MIXTURE OF ISOMERS AS MANUFACTURED)

- **ID:** 68515-48-0
- **%:** 18.0000 - 21.0000
- **GS:** LT-1
- **RC:** None
- **Nano:** No
- **Role:** Plasticizer
- **Hazards:**
  - **Cancer**
    - CA EPA - Prop 65: Carcinogen
### 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

<table>
<thead>
<tr>
<th>CERTIFYING PARTY</th>
<th>Third Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICABLE FACILITIES</td>
<td>All</td>
</tr>
<tr>
<td>CERTIFICATE URL</td>
<td>certificates.ulenvironment.com/default.aspx?id=9433&amp;t=gg</td>
</tr>
</tbody>
</table>

**Certificate Number:** 9433-410

<table>
<thead>
<tr>
<th>GREENGUARD Certified</th>
<th>CERTIFIER OR LAB: UL Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSUE DATE: 2009-12-31</td>
<td>EXPIRY DATE: 2017-12-31</td>
</tr>
</tbody>
</table>

---

### BARIUM ZINC COMPLEX

**ID:** Not registered

<table>
<thead>
<tr>
<th>%: 1.0000 - 2.0000</th>
<th>GS: NoGS</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Heat Stabilizer</th>
</tr>
</thead>
</table>

**HAZARDS:**

None Found

**AGENCY(IES) WITH WARNINGS:**

No warnings found on HPD Priority lists

---

### UNDISCLOSED

<table>
<thead>
<tr>
<th>%: 1.0000 - 1.5000</th>
<th>GS: LT-UNK</th>
<th>RC: None</th>
<th>NANO: No</th>
<th>ROLE: Processing Aid</th>
</tr>
</thead>
</table>

**HHAZARDS:**

CANCER

MAK

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

**AGENCY(IES) WITH WARNINGS:**

CANCER

MAK

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

---

**SUBSTANCE NOTES:** Supplier HPD lists this as a "Proprietary Ingredient". All hazards disclosed in Supplier HPD have been included.
### 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.

#### FASTENERS

**HPD URL:** No HPD available

**CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:**
As referenced in UL Evaluation Report (UL ER22158-01).

#### STEEL FRAMING

**HPD URL:** No HPD available

**CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:**
As referenced in UL Evaluation Report (UL ER22158-01).

#### ALKALI-RESISTANT FIBERGLASS MESH TAPE

**HPD URL:** No HPD available

**CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:**
Used to treat joints and/or reinforce seams, edges, corners and all openings around fixtures, as per UL Evaluation Report (UL ER22158-01).

#### MORTAR OR ADHESIVE

**HPD URL:** No HPD available

**CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:**
Used to treat joints and/or reinforce seams, edges, corners and all openings around fixtures, as per UL Evaluation Report (UL ER22158-01).
MANUFACTURER INFORMATION

MANUFACTURER: National Gypsum Company
ADDRESS: 2001 Rexford Road
Charlotte NC 28211, USA
WEBSITE: www.nationalgypsum.com

CONTACT NAME: Warren Barber
TITLE: Manager - Technical Marketing
PHONE: 704-365-7494
EMAIL: WarrenB@nationalgypsum.com

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

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)
BM-3 Benchmark 3 (use but still opportunity for improvement)
BM-2 Benchmark 2 (use but search for safer substitutes)
BM-1 Benchmark 1 (avoid - chemical of high concern)
BM-U Benchmark Unspecified (insufficient data to benchmark)

LT-P1 List Translator Possible Benchmark 1
LT-1 List Translator Likely Benchmark 1
LT-UNK List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)
NoGS Unknown (no data on List Translator Lists)

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
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.