Section 1 – Chemical Product and Company Identification

Product Name: Basalt Textiles
Product Use: Thermal Insulation
Manufacturer Information: Design Engineering, Inc.
Design Engineering, Inc.
604 Moore Road
Avon Lake, OH 44012
(440) 930-7940
Emergency Contacts:
Prepared By

Preparation Date: April 26, 2014
Supercedes: July 26, 2013

Section 2 – Composition/Ingredient Information

2. Data on composition/ingredients
2.1 Description:
Roving of continuous basalt filaments with nominal diameter of filaments 10-17 micron and moisture content below 0.5%.

2.2 Hazardous ingredients: EINECS – No.: Content %: Hazard symbol: R-settings: Limit values, type:
N/A --- --- --- --- ---

2.3 Additional remarks:
Section 3 – Hazards Identification

3. Potential risks

3.1 Type of Risk: N/A
R-settings N/A

3.2 Special risks to individuals and environment: N/A

Section 4 – First Aid Measures

4. First-Aid

4.1 General: Providing instructions for use are complied with, there is no need for First-Aid. Please note the information disclosed in points 7 and 8.

4.2 After inhalation: Normally not applicable.
If necessary, take persons out in the open that they get some fresh air.

4.3 After skin contact: Normally not applicable.
If necessary, remove mechanically.

4.4 After eye contact: Normally not applicable.
If necessary, rinse with water for severral minutes.

4.5 After swallowing: Normally not applicable.
If necessary, wash mouth with water.

4.6 Information for physician: Normally not applicable.

Section 5 – Fire Fighting Measures

5. Fire fighting

5.1 Appropriate fire fighting media:
Adjust fire in the surroundings. The products are non-combustible.

5.2 Inappropriate fire fighting media (safety reasons): N/A

5.3 Particular risks specific to the product, its combustion products or developing gasses: N/A

5.4 Required fire fighting PPE: N/A
Section 6 – Actions on inadvertent release

6. Actions on inadvertent release
   Absorb by mechanical means and dispose of according to item 13. Avoid development of dust. See also item 8.

Section 7 – Handling and Storage

7. Handling and storage

7.1 Safe handling information including technical safeguarding:
   Increased mechanical stress of the basalt roving may generate dust and airborne fibers, which may cause discomfort. At skin contact, skin irritations are possible. Availability of a local suction is advised. The general hygiene rules and measures applying for the handling of chemicals must be employed.
   Fire and explosion related information:
   The products are non-combustible.

7.2 Safe storage conditions:
   Storage room/warehouse requirements:
   Storage rooms must be well ventilated. Do not store product in passage ways and staircases; also do always store it in original packing which should be intact.

   Incompatible materials/restrictions on combined storage: N/A
   Storage conditions:
   Storage at room temperature and dryly. Protect against humidity.
   Special requirements on electric systems and equipment: N/A
   Static charge prevention:  N/A
   Storage class: 13
Section 8 – Exposure Controls / Personal Protection

8. Exposure control and Personal Protective Equipment (PPE)

8.1 Additional information for the design of technical equipment: See item 7.1

8.2 Substances with workplace related limit values/classification subject to control:

<table>
<thead>
<tr>
<th>CAS-No., EINECS-No.</th>
<th>Substance:</th>
<th>Max. worksite concentration (MAK):</th>
<th>Peak value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>General dust limit value: Respirable content (E): Alveola related content (A):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional remarks:
The fibers processed in our products are uniform and are not subject to EC Guideline 97/69/EC. Furthermore, our products are not considered carcinogenic according to EC Guideline 1999/45/EC and TRGS 220 (Germany). The basalt fibers processed in our products are produced according to a defined process and have a nominal diameter of 10 - 19 micron.

Manmade mineral fibers categorized in appendix 7 HazMat Ordinance or TRGS 521 are subject to a TRK value of 250,000 fibers/m³ according to TRGS 900.

8.3 Personal Protective Equipment (PPE)

If the instructions of item 7.1 is complied with, PPE is not required.

Respiratory protection: At elevated airborne fiber and dust levels, we recommend to use a respiratory equipment (dust mask with fine filter according to EN 143), Filter P1 (EN 141).

Eye protection: In case of airborne fibers and dust, we recommend to wear safety glasses (EN 166).

Hand protection: We recommend safety gloves to avoid possible skin irritation (leather or cotton gloves).

Body protection: Long-sleeved safety clothing as well as normal personnel protective equipment (e.g. safety boots EN 344).

General protection and hygiene:
Before breaks and after the end of the work day, wash hands thoroughly. In case of sensitive skin, apply a rich, protective hand lotion/cream. To protect against skin irritation, avoid wearing tight-fitting garments.
Section 9 – Physical and Chemical Properties

9. Physical and chemical properties
9.1 Appearance
  Shape/State of aggregation: solid  Color: dark-olive  Odor: inodorous
9.2 pH-Value (2g in 100 ml of water, 20 °C): N/A (DIN 54276)
9.3 Boiling point/boiling range: N/A
9.4 Melting point/melting range: approx. 1050 °C (softening point of basalt)
9.5 Flash point: N/A
9.6 Flammability: The products are non-combustible.
9.7 Ignition temperature: N/A
9.8 Self-ignition: N/A
9.9 Danger of explosion: N/A
9.10 Explosion limits lower: N/A  upper: N/A
9.11 Fire promoting properties: Cannot be applied according to the laws of the European Community.
9.12 Vapor pressure: N/A
9.13 Density expressed as bulk density (20 °C): 2.67 g/cm³ (raw basalt)
9.14 Solubility in water: insoluble
9.15 Solubility in fat: insoluble
9.16 Distribution coefficient n-Octanol/water: N/A
9.17 Other:

Section 10 – Chemical Stability & Reactivity Information

10. Stability and reactivity
10.1 Conditions to be avoided: humidity
10.2 Substances to be avoided: When handled as instructed, none known.
10.3 Hazardous decomposition products: N/A
10.4 Other: These products are not reactive.
Section 11 – Toxicological Information

11. Toxicology data
11.1 Toxicological tests
   - Acute toxicity, e.g. LD50: no data available
   - Specific symptoms of animal tests: no data available
   - Primary irritant/caustic action: no data available
   - Sensitization: no data available
   - Effects after repeated or prolonged exposure: (sub-acute to chronic toxicity) no data available
   - Carcinogenic risks: no, 97/69/EC
   - Genotype and reproduction risks: no data available
   - Other: See item 8.2

11.2 Practical experience
   - Classification specific information: no data available
   - Other:

11.3 General remarks:

Section 12 – Ecological Information

12. Ecology data
12.1 Elimination data (Persistence and degradability): no data available

12.2 Environmental behavior
   - Mobility: no data available
   - Bio-accumulation potential: no data available

12.3 Eco-toxicological effects
   - Aqueous toxicity: no data available
   - Behavior in sewage plants: N/A

12.4 Other ecological data:
   - CSB-Value: - mg/g
   - BSB5-Value: - mg/g
   - AOX-note: N/A
   - General remarks:
Section 13 – Disposal Considerations

13. Disposal
13.1 Product:
   Waste Code No.: EWC-Code 101103
   Appropriate (waste) dump or garbage incinerating plant.
13.2 Impure packing/wrapping material:
   Remove basalt fiber remains from packing/wrapping material. Disposal/recycling according to Packing Material Ordinance.
   Waste code No.: Waste type: Accountability:

Section 14 – Transportation Information

14. Transport (national/international)
14.1 Overland: ADR/RID-, GGVS/GGVE-Class
14.2 Inland waterways: ADN/ADNR-Class
14.3 Overseas: IMDG/GGVSee-Class
14.4 Air: ICAO/IATA-Class
14.5 Transport/other info: Non-hazardous goods according to items 14.1 – 14.4.

Section 15 – Regulatory Information

15. Regulations
15.1 Identification according to EC Guidelines
   Risk designation and alphabetical code: N/A
   contains: N/A
   R-settings: N/A
   S-settings: N/A
   Specific identification of certain preparations: N/A
15.2 National regulations:
   Indications for employment limit: N/A
   Ordinance conc. disruptive events: N/A
   Operating safety ordinance: N/A
Technical instructions on maintaining air purity: N/A

Water hazard class: non-hazardous according to VvW\WwS dd. 17.05.1999
ID-No. according to catalogue of substances hazardous to water 765
(glass)

Section 16 – Other Information

16. Other

Further information:
N/A = not applicable

Please note:
Data quoted in this Safety Data Sheet relate exclusively to the basalt product described and not to a combination of this product with any other kind of substance, a different preparation, or a different material resp. process. The data describes issues relevant to safety according to the best of our knowledge as it is to date and are intended to protect human beings and the environment. They do not represent quality characteristics nor may they be construed as a release of responsibility when handling basalt roving nor from compliance with existing legal regulations and obligations. The data address wholesalers and are not intended for private users.

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