Mighty Fibre M-310
Safety Data Sheet

Date of issue: 11/17/2020  Revision date: 11/17/2020  Supersedes: 06/05/2017

SECTION 1: Identification

1.1. Identification
Product form: Article
Product name: Mighty Fibre M-310
Product code: 9944
Synonyms: Pre-Cast Refractory Shape

1.2. Recommended use and restrictions on use
Use of the substance/mixture: Refractory
Recommended use: Industrial use

1.3. Supplier
Manufacturer
Resco Products, Inc.
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA 15205 - United States
412-494-4491
SDS@RescoProducts.com - WWW.RescoProducts.com

1.4. Emergency telephone number
Emergency number: EMERGENCY ONLY (CHEMTREC) USA & Canada 1-800-424-9300
Outside USA & Canada +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements
This product meets the definition and criteria for an article according to OSHA 29 CFR 1910.1200 and the EU REACH 1907/2006 Article 3(3) regulations.
Other hazards not contributing to the classification: Pre-cast shape may be heavy and cause pinch and drop hazards, use of gloves and safety shoes should be considered. Note: This product contains metallic fiber, hand protection required.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures
<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous</td>
<td>(CAS-No.) 1344-28-1</td>
<td>20 – 50</td>
<td>Not classified</td>
</tr>
<tr>
<td>310 Stainless Steel Fibre</td>
<td>(CAS-No.) 65997-16-2</td>
<td>5 – 10</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2B, H320</td>
</tr>
<tr>
<td>Calcium Aluminate Cement</td>
<td>(CAS-No.) 409-21-2</td>
<td>1 – 5</td>
<td>Carc. 1B, H350</td>
</tr>
<tr>
<td>cristobalite</td>
<td>(CAS-No.) 14464-46-1</td>
<td>0.1 – 0.5</td>
<td>Carc. 1A, H350</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general: No hazards which require special first aid measures.
First-aid measures after inhalation: Inhalation unlikely. Allow affected person to breathe fresh air.
First-aid measures after skin contact: Not applicable.
First-aid measures after eye contact: Direct eye contact is unlikely. Rinse cautiously with water for several minutes.
First-aid measures after ingestion: Ingestion unlikely. Rinse mouth.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after inhalation: Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after eye contact: Eye irritation.
Symptoms/effects after ingestion: No data available.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical
Fire hazard: Non-flammable.
**Mighty Fibre M-310**

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th align="left">5.3.</th>
<th align="left">Special protective equipment and precautions for fire-fighters</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">Firefighting instructions</td>
<td align="left">No specific fire-fighting instructions required.</td>
</tr>
</tbody>
</table>

**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

**Protective equipment**

Gloves. Safety shoes.

6.1.2. For emergency responders

**Protective equipment**

Use personal protective equipment as required.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

**Methods for cleaning up**

Collect spillage.

6.4. Reference to other sections

No additional information available

**SECTION 7: Handling and storage**

7.1. Precautions for safe handling

**Precautions for safe handling**

Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Do not breathe dust.

**Hygiene measures**

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions**

Store this product in a dry location where it can be protected from the elements.

**SECTION 8: Exposure controls/personal protection**

8.1. Control parameters

<table>
<thead>
<tr>
<th align="left">Mighty Fibre M-310</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">No additional information available</td>
</tr>
</tbody>
</table>

**aluminium oxide, non-fibrous (1344-28-1)**

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 1 mg/m³ respirable dust |

**Calcium Aluminate Cement (65997-16-2)**

No additional information available

**cristobalite (14464-46-1)**

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 0.025 mg/m³ respirable dust |

**USA - OSHA - Occupational Exposure Limits**

| OSHA PEL (TWA) (mg/m³) | 0.05 mg/m³ respirable dust |

**silicon carbide (409-21-2)**

**USA - ACGIH - Occupational Exposure Limits**

| ACGIH TWA (mg/m³) | 3 mg/m³ (Silicon carbide, nonfibrous; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica. |

**310 Stainless Steel Fibre**

No additional information available

8.2. Appropriate engineering controls

**Appropriate engineering controls**

Dust when sawing or tear out; Provide adequate ventilation to minimize dust concentrations.

8.3. Individual protection measures/Personal protective equipment

**Hand protection:** protective gloves

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th align="left">Physical state</th>
<th align="left">Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">Appearance</td>
<td align="left">Shape.</td>
</tr>
<tr>
<td align="left">Color</td>
<td align="left">Gray</td>
</tr>
<tr>
<td align="left">Odor</td>
<td align="left">None</td>
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<tr>
<td align="left">Odor threshold</td>
<td align="left">No data available</td>
</tr>
<tr>
<td align="left">pH</td>
<td align="left">No data available</td>
</tr>
<tr>
<td align="left">Melting point</td>
<td align="left">&gt; 3000 °F</td>
</tr>
<tr>
<td align="left">Freezing point</td>
<td align="left">No data available</td>
</tr>
<tr>
<td align="left">Boiling point</td>
<td align="left">No data available</td>
</tr>
</tbody>
</table>

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Flash point: No data available
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): Non flammable.
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: ≈ 2.6
Solubility: Insoluble in water.
Partition coefficient n-octanol/water (Log Pow): No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2 Other information
No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity
None known.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
No additional information available

10.4 Conditions to avoid
No additional information available

10.5 Incompatible materials
No additional information available

10.6 Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

aluminium oxide, non-fibrous (1344-28-1)
LD50 oral rat: > 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LC50 Inhalation - Rat: 7.6 mg/l air (Equivalent or similar to OECD 403, 1 h, Rat, Male, Experimental value, Inhalation (aerosol))

silicon carbide (409-21-2)
LD50 oral rat: > 2000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral)
LD50 dermal rat: > 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Not classified
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified

Silicon carbide (409-21-2)
IARC group: 2A - Probably carcinogenic to humans
Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Viscosity, kinematic: No data available
Symptoms/effects after inhalation: Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after eye contact: Eye irritation.
Symptoms/effects after ingestion: No data available.
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SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Material</th>
<th>Persistence and degradability</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pers. &amp; Degrad.</td>
<td>Not applicable.</td>
<td></td>
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</tr>
<tr>
<td>Chem. Oxygen Demand (COD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ThOD</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>cristobalite (14464-46-1)</td>
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<tr>
<td>Chem. Oxygen Demand (COD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ThOD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>silicon carbide (409-21-2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pers. &amp; Degrad.</td>
<td>Biodegradability: not applicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chem. Oxygen Demand (COD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ThOD</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Material</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
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<tr>
<td>Bioaccumulative potential</td>
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<tr>
<td>cristobalite (14464-46-1)</td>
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</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>No data available.</td>
</tr>
<tr>
<td>silicon carbide (409-21-2)</td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Bioaccumulation: not applicable.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Material</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
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<tr>
<td>Ecology - soil</td>
<td>No data available.</td>
</tr>
<tr>
<td>cristobalite (14464-46-1)</td>
<td></td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not regulated
Transportation of Dangerous Goods
Not regulated
Transport by sea
Not regulated
Air transport
Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations
Mighty Fibre M-310
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS-No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>310 Stainless Steel Fibre</td>
<td>CAS-20-50%</td>
<td></td>
</tr>
</tbody>
</table>
### aluminium oxide, non-fibrous (1344-28-1)

Not subject to reporting requirements of the United States SARA Section 313

**Note**

Note: The section 313 chemical list contains "CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)"; the Aluminum oxide contained in this product is non-fibrous, and thus is not a section 313 material. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting.

### 15.2. International regulations

#### CANADA

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
<tr>
<td>Calcium Aluminate Cement (65997-16-2)</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
<tr>
<td>cristobalite (14464-46-1)</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
<tr>
<td>silicon carbide (409-21-2)</td>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
</tbody>
</table>

### EU-Regulations

No additional information available

### National regulations

#### silicon carbide (409-21-2)

Listed on IARC (International Agency for Research on Cancer)

### 15.3. US State regulations

#### Mighty Fibre M-310

**U.S. - California - Proposition 65 - Other information**

This product contains crystalline silica, a chemical known to the State of California to cause cancer.

#### cristobalite (14464-46-1)

<table>
<thead>
<tr>
<th>Component</th>
<th>U.S. - California - Proposition 65 - Other information</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
<th>Maximum allowable dose level (MADL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Component State or local regulations

<table>
<thead>
<tr>
<th>Chemical</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide, non-fibrous (1344-28-1)</td>
<td>U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
<tr>
<td>Cristobalite (14464-46-1)</td>
<td>U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
<tr>
<td>silicon carbide (409-21-2)</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
</tbody>
</table>

### SECTION 16: Other information

**Other information**

Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H320</td>
<td>Causes eye irritation</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein, however, Resco Products, Inc. makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.