1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAMES: OEQF Ceramic Disc Brake Pads

OTHER NAMES: True Ceramic, Low Copper Ceramic

PRODUCT TYPE: Molded Friction Product

PRODUCT USE: Braking Systems on Automotives and Light Trucks.

MANUFACTURER: OE Quality Friction Inc.
6315 Kestrel Road
Mississauga, ON L5T 1S8
CANADA

FOR MORE INFORMATION CALL:
Monday-Friday, 8:00am - 5:00pm
OE Quality Friction Inc.
David Dawkins
(905) 564-9500

2. HAZARDS IDENTIFICATION

The product meets the OSHA definition of an article and is exempt from the Hazard Communication Standard when used as intended. See CFR1910.1200(b)(6)(v).

EMERGENCY OVERVIEW: Friction materials are not considered hazardous materials. The components in this product are bound in a resin matrix and are not released during normal handling. Handling of the supplied product is therefore unlikely to require the need for protective clothing. Friction materials will not support combustion but may release irritating and potentially toxic combustion products should they be exposed to high temperatures as in a fire. When used for its intended purpose, the product requires no machining. Exposure to dust created during grinding, sanding, machining or use, may cause eye and respiratory tract irritation.

POTENTIAL HEALTH HAZARDS

SKIN: None expected under normal use conditions. Contact with dust may cause mild irritation.

EYES: None expected under normal use conditions. Exposure to dust may cause eye irritation.

INHALATION: None expected under normal use conditions. Inhalation of dust may cause irritation or soreness in throat, nose and respiratory tract.

INGESTION: May cause feelings of nausea.

DELAYED EFFECTS: Ingredients of this product are associated with lung irritation and possible lung injury from prolonged overexposure. However, the potential for exposure from this product is low because the ingredients in friction materials are physically bonded together by a resin polymer matrix.
No ingredients of this friction material are found on any of the OSHA designated carcinogen lists.
3. COMPOSITION/INFORMATION ON INGREDIENTS

In accordance with paragraph (i) of CFR1910.1200, the proportions of all ingredients in the friction material product are withheld because this information is considered to be a trade secret of the manufacturer.

4. FIRST AID MEASURES

Contact with dust from the friction product may cause eye, skin and/or respiratory tract irritation.

**If any of the symptoms persist, seek medical attention immediately.**

SKIN: Wash skin with soap and water after handling parts. Seek medical attention for persistent irritation.

EYES: Flush eyes with cool running water if dust becomes embedded. Seek medical attention if reddening persists.

INHALATION: Remove affected person to fresh air. Seek medical attention if irritation persists.

INGESTION: If swallowed, dilute with lots of water. Do not induce vomiting.

ADVICE TO PHYSICIAN: No specialized first aid or medical treatment procedures are required. Treat according to symptoms present.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use extinguishing media appropriate for the surrounding area.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Toxic and irritating materials may be released in a fire. This friction material product, as shipped, is not considered hazardous, but machining (grinding, drilling, or chamfering) may create dusts that are combustible and should be considered hazardous.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:
Self Contained Breathing Apparatus (SCBA) and Structural Firefighter Suits are recommended if articles are involved in a fire.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, oxides of nitrogen, phenols, aldehydes, hydrocarbons and soot.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: Always wear recommended personal protective equipment. No special precautions are required for intact packaging containing this product. If product is crushed, use respiratory protection equipment. Do not dry sweep product or use compressed air to clean up any residues. Use a wet method or vacuums equipped with High Efficiency Particulate (HEPA) filters to clean up any residues from this product. Wastes should be placed in dust tight containers or sealed plastic bags for disposal. Label Properly. Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.
7. HANDLING AND STORAGE

NORMAL HANDLING: Always wear recommended personal protective equipment including respiratory protection if dust is generated. Avoid breathing or creating dust. Although these products do not contain asbestos, it is recommended to follow the OSHA Appendix F to 1910.1001 “Work Practices and Engineering Controls for Automotive Brake and Clutch Inspection, Disassembly, Repair and Assembly - Mandatory”.

STORAGE RECOMMENDATIONS: No special requirements.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: This friction material product, as shipped, is not considered hazardous, but machining (grinding, drilling or chamfering) may create dusts or airborne fibers in excess of the OSHA Permissible Exposure Limits (PEL’s) for the respective ingredients and should be considered hazardous.

Standard industrial hygiene practices, including housekeeping and vacuuming with High Efficiency Particulate (HEPA) filters or wet cleaning work surfaces to prevent dusts from becoming airborne should be implemented and maintained.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: None needed for normal use. In situations where prolonged contact is likely, wear impervious gloves such as rubber.

EYE PROTECTION: None needed for normal use. In situations where prolonged contact is likely, chemical safety goggles are recommended.

RESPIRATORY PROTECTION: None needed for normal use. In situations where dust is likely and the exposure limits are exceeded, a NIOSH approved particulate respirator (N95 or better filters) may be worn. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

Other: None needed for normal use. In situations where prolonged contact is likely, wear impervious clothing as needed to prevent contact. A safety shower and eyewash should be available in the immediate work area.

EXPOSURE GUIDELINE

Dust produced from this product by any means is unlikely to have the composition of a single component, but instead will be a mixture of all the components. It should therefore be regarded as a nuisance dust. The following general exposure guidelines should be observed.

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>OTHER LIMIT (NIOSH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuisance dust</td>
<td>2 mg/m³ TWA respirable fraction</td>
<td>15 mg/m³ TWA total dust</td>
<td>10 mg/m³ TWA total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ TWA respirable fraction</td>
<td>5 mg/m³ TWA respirable fraction</td>
</tr>
</tbody>
</table>
### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark gray solid brake part.</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Mixture</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>Mixture</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Specific Gravity (water = 1.0)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility in Water (weight %)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor Density (air = 1.0)</td>
<td>No volatiles in product.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>None</td>
</tr>
<tr>
<td><strong>Flammable Properties</strong></td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>None</td>
</tr>
<tr>
<td>Flash Point Method</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not established.</td>
</tr>
<tr>
<td>Upper Flame Limit (volume % in air)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower Flame Limit (volume % in air)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flame Propagation Rate (solids)</td>
<td>Not established.</td>
</tr>
<tr>
<td>OSHA Flammability Class</td>
<td>Not classified as flammable material by OSHA.</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Normally Stable? (Conditions to Avoid):** Product is stable.

**Incompatibilities:** None known.

**Hazardous Decomposition Products:** Toxic and irritating materials may be released in a fire. At >300°C thermal decomposition may occur generating carbon monoxide, carbon dioxide, oxides of nitrogen, phenols, aldehydes, hydrocarbons and soot.

**Hazardous Polymerization:** None.
11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS: Skin and eye irritation may occur on repeated contact to dusts. Inhalation of dust may cause respiratory, nose, and throat irritation.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: Prolonged inhalation of dust can cause lung injury. These lung injuries may not be recognized until many years after exposure. The potential for such exposure from this product is low because the ingredients are physically bonded together by a resin polymer matrix.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None expected under normal use conditions. Employees with pre-existing respiratory disease may be at increased risk from exposure to dust.

OTHER DATA: None

12. ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not anticipated to have an adverse effect on the environment.

13. DISPOSAL CONSIDERATIONS

RCRA

The unused product is NOT considered to be a RCRA hazardous waste if discarded.

OTHER DISPOSAL CONSIDERATIONS:

Dispose in accordance with all applicable federal, state and local regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: Not Regulated

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Manufactured articles are not subject to TSCA.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>SARA/CERCLA RQ (LB)</th>
<th>SARA EHS TPQ (LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.
SECTION 311 HAZARD CLASS:  Product as shipped – None

SARA 313 TOXIC CHEMICALS:
The following ingredients are SARA 313 “Toxic Chemicals”.

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper   CAS # 7440-50-8</td>
<td>10 to 16% of composition (normal)</td>
</tr>
<tr>
<td></td>
<td>2 to 4% of composition (low copper)</td>
</tr>
<tr>
<td></td>
<td>Percentages as elemental Cu.</td>
</tr>
<tr>
<td>Antimony compounds   CAS # 1345-04-6</td>
<td>&lt;4% of composition as elemental Sb.</td>
</tr>
<tr>
<td>Manganese (ingredient in steel fiber) CAS # 7439-96-5</td>
<td>De Minimus concentration for section 313 is 1.0% (Manganese).</td>
</tr>
</tbody>
</table>

ADDITIONAL REGULATORY INFORMATION: The finished product contains a mixture of chemical ingredients that are encapsulated in a polymer resin. Subsequent processing (grinding, drilling or chamfering) may create a potential for the release of the ingredients to the atmosphere (e.g. from a dust collection system) or to a landfill (e.g. if you dispose of wetted or pelletized grinding dust or drill chips). If they are of sufficient quantities, you may be required to report such “Releases” on EPA Form “R”.

WHMIS CLASSIFICATION (CANADA): Not a controlled product as shipped. Certain processes (e.g., grinding) may cause this article to be considered as a controlled product. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

FOREIGN INVENTORY STATUS: As manufactured articles, these products are not subject to chemical notification requirements.

16. OTHER INFORMATION

CURRENT ISSUE DATE:  July 23, 2013
PREVIOUS ISSUE DATE:  June 27, 2013

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
To remove the words “in use”.

DISCLAIMER:
Although the information contained in this MSDS has been compiled based upon sources believed to be reliable on the date of preparation, there is no warranty expressed or implied as to the completeness or accuracy thereof. OE Quality Friction Inc. will accept no responsibility for damages of any nature arising from the publication, use or reliance upon the data in this MSDS. Since the conditions of storage, handling and disposal of this product are beyond the control of the manufacturer, OE Quality Friction Inc. will not be responsible for any loss, damage or injury arising from improper use of the product. No warranties of any kind, expressed or inferred, regarding the product described in this MSDS and its merchantability, or fitness for a particular purpose, are made with the information provided in this MSDS.