SAFETY DATA SHEET

1. Identification

Product identifier: TAMAX; TAMAX 70 SC
Other means of identification
   Brand Code: 8541, 173D
Recommended use: For Industrial Use Only
Recommended restrictions: Avoid dry cutting, blasting, or dust generation.

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

2. Hazard(s) identification

Classified hazards
   This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

   This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

Label elements
   This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

   This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

Hazard(s) not otherwise classified (HNOC)
   This item is defined as an article per OSHA, REACH, and WHMIS and is therefore exempt from labeling. A Safety Data Sheet is available.

   This item is not Classified as hazardous. However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. Wear protective gloves/protective clothing/eye protection.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical 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>80 - 100</td>
</tr>
<tr>
<td>Aluminium Oxide (Non-Fibrous)</td>
<td></td>
<td>1344-28-1</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>

Other components below reportable levels

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt; 0.5</td>
</tr>
</tbody>
</table>

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
   Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed
   Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed
   Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
If you feel unwell, seek medical advice (show the label where possible).

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. For personal protection, see section 8 of the SDS.

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. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mppcf</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mppcf</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Mullite (CAS 1302-93-8)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

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

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**  
Wear safety glasses with side shields (or goggles).

**Skin protection**  
**Hand protection**  
Wear appropriate chemical resistant gloves.

**Other**  
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**: Brick or Cast Shape
- **Color**: Not available.
- **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.
Material is stable under normal conditions.

No dangerous reaction known under conditions of normal use.

Contact with incompatible materials.

Strong oxidizing agents. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.

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
- **Inhalation**
  - Prolonged inhalation may be harmful.
- **Skin contact**
  - Prolonged skin contact may cause temporary irritation.
- **Eye contact**
  - 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
- **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
- **IARC Monographs. Overall Evaluation of Carcinogenicity**
  - Not listed.
  - Not regulated.
- **US. National Toxicology Program (NTP) Report on Carcinogens**
  - Not listed.

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

#### Specific target organ toxicity - single exposure
- Not classified.

#### Specific target organ toxicity - repeated exposure
- Causes damage to organs through prolonged or repeated exposure.

#### Aspiration hazard
- Not an aspiration hazard.

#### Chronic effects
- Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

### 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 any ingredients in the mixture.

#### 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

**DOT**

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

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.


Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical**

No (Exempt)

**SARA 313 (TRI reporting)**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1344-28-1</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)**

Not regulated.

**US state regulations**

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Glass, Oxide, Chemicals (CAS 65997-17-3) Listed: July 1, 1990
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>No</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>No</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>No</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>No</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, including date of preparation or last revision

Issue date 10-24-2019
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 This document has undergone significant changes and should be reviewed in its entirety.