1. Chemical product and company identification

Product name: MIZZOU CASTABLE PLUS; MIZZOU CASTABLE PLUS W/F; MIZZOU CASTABLE PLUS H

Brand Code: 5976, 454B, 4622, 715C

Recommended use and Limitations on use

Recommended use: For Industrial Use Only

Limitations on use: DO NOT INGEST. KEEP MATERIAL AWAY FROM CHILDREN AND ANIMALS TO PREVENT ACCIDENTAL INGESTION. Avoid dry cutting, blasting, or dust generation. Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Supplier

HarbisonWalker International
1305 Cherrington Parkway, Suite 100
Moon Township, PA 15108, USA

Telephone: General Phone: 412-375-6600
CHEMTREC EMERGENCY 1-800-424-9300
US/CAN ONLY

E-mail: sds@thinkHWI.com

Contact person: Product Safety Specialist

Emergency telephone number: PT Harbison Walker International 62.254.398750-1

2. Hazards identification

GHS classification

Physical hazards: Not classified.

Health hazards: Carcinogenicity Category 1A
Specific target organ toxicity, repeated exposure Category 1

Environmental hazards: Not classified.

Label elements

Pictogram

Signal word: Danger

Hazard statement: May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards: None known.

Supplemental information: None.

3. Composition / information on ingredients

Substance or mixture: Mixture

Chemical property

Chemical name: Mullite
CAS Number: 1302-93-8
Concentration (%): 50 - < 60
4. First aid measures

First aid measures for different exposure routes

**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**
Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms and effects
Dusts may irritate the respiratory tract, skin and eyes. Prolonged exposure may cause chronic effects.

Personal protection for first-aid responders
If exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Notes to physician
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Extinguishing media to avoid
None.

Special fire fighting procedures
None.

Protection of fire-fighters
None.

6. Accidental release measures

Personal precautions
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

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

Spill clean-up methods
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Technical measures
No specific recommendations.

Local and general ventilation
Provide appropriate exhaust ventilation at places where dust is formed.

Precautions
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not breathe dust. When using, do not eat, drink or smoke.

Safe handling advice
Avoid prolonged exposure. Should be handled in closed systems, if possible. Wash hands thoroughly after handling. Do not breathe dust. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.

Storage

Technical measures
No specific recommendations.
Store locked up. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

Incompatible materials: Acids. Fluorine. Chlorine. For further information, please refer to section 10 of the SDS.

8. Exposure controls/personal protection

Exposure limits

Indonesia. OELs (Minister of Manpower and Transmigration Regulation No. Per.13/MEN/X/2011 concerning Threshold Limit Values, Annex II)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon (CAS 7440-44-0)</td>
<td>TWA</td>
<td>3 mg/m3</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Cristobalite (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m3</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td>Quartz (SiO2) (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.1 mg/m3</td>
<td>Respirable particles.</td>
</tr>
</tbody>
</table>

Occupational exposure limits

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>Cristobalite (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Quartz (SiO2) (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Engineering measures

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Personal protective equipment

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Hand protection

Wear appropriate chemical resistant gloves.

Eye protection

Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

Skin and body protection

Use of an impervious apron is recommended.

Hygiene measures

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: Powder.

Color: Not available.

Odor: Not available.

Odor threshold: Not available.

pH: Not available.

Melting point/freezing point: Not available.

Boiling point, initial boiling point, and boiling range: Not available.

Flash point: Not available.
Auto-ignition temperature  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.
Evaporation rate  Not available.
Relative density  Not available.
Density  Not available.
Solubility(ies)
  Solubility (water)  Not available.
  Solubility (other)  Not available.
Partition coefficient (n-octanol/water)  Not available.
Decomposition temperature  Not available.
Viscosity  Not available.
Other data
  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.
Stability  Material is stable under normal conditions.
Conditions to avoid  Contact with incompatible materials.
Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure.
Hazardous decomposition products  No hazardous decomposition products are known.
Possibility of hazardous reactions  No dangerous reaction known under conditions of normal use.

11. Toxicological information
Acute toxicity  Not known.
Routes of exposure  Inhalation. Skin contact. Eye contact.
Symptoms  Dusts may irritate the respiratory tract, skin and eyes.
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.
In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

**ACGIH Carcinogens**
- Cristobalite (CAS 14464-46-1) A2 Suspected human carcinogen.
- Quartz (SiO2) (CAS 14808-60-7) A2 Suspected human carcinogen.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- Cristobalite (CAS 14464-46-1) 1 Carcinogenic to humans.
- Quartz (SiO2) (CAS 14808-60-7) 1 Carcinogenic to humans.

**Toxic to reproduction**
- 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.

**Interactive effects**
- Not available.

**Other information**
- Not available.

**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 this product.

- **Bioaccumulation**
  - No data available.

- **Mobility in soil**
  - No data available for this product.

- **Other hazardous 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 methods/information**
  - Not available.

- **Local disposal regulations**
  - 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.

**14. Transport information**
- **ADR**
  - 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**
- **Applicable regulations**
  - CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon, March 10, 2008)
    - Not regulated.
Dangerous Substances that Must be Registered (Regulation of the Minister of Health of the Republic of Indonesia, No. 472/Menkes/Per/V/1996)
Not regulated.
Import and Distribution Control of Hazardous Materials (Minister of Trade Regulation No. 75/M-DAG/PER/10/2014, Annex I)
Not listed.
Precursor Chemicals (Ministry of Industry and Trade Decree No. 647/MPP/Kep/10/2004 concerning Regulation on Import of Precursors, Attachment 1, Oct. 18, 2004)
Not regulated.
Prohibited Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 1)
Not regulated.
Restricted Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 2)
Not regulated.
Not regulated.

Hazardous Substances Approved for Use (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment I)
Listed substances
Carbon (CAS 7440-44-0)
Listed substances / Allowed until 2040
Not regulated.

16. Other information

Issued by
Not available.

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.

Issue date
08-22-2017

Legend to abbreviations and acronyms used in the SDS
Not available.

References and sources for data used to compile the SDS
Not available.

Revision information