SAFETY DATA SHEET

1. Identification

Product identifier: 'SAIRSET

Other means of identification:
- Brand Code: 5006, 421A, 114i, 141i

Recommended use of the chemical and restrictions on use:
- Recommended use: For Industrial Use Only
- Restrictions on use: 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:
PT Harbison Walker International
Jl. Australia II Kav N-1 KIEC Complex
Cilegon 42443, Banten - Indonesia
Indonesia
REACH@thinkHWI.com
www.thinkHWI.com

2. Hazard(s) identification

Classification of the hazardous chemical:
- Physical hazards: Not classified.
- Health hazards: Carcinogenicity - Category 1A
- Environmental hazards: Not classified.

Label elements, including precautionary statements:
- Hazard symbol(s): Health hazard
- Signal word: Danger
- Hazard Statement(s): May cause cancer.
- Precautionary Statement(s):
  - Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
  - 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 which do not result in classification: None known.

Supplemental information:
Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

3. Composition/information on ingredients

Mixture

<table>
<thead>
<tr>
<th>Identity of chemical ingredients</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration of ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mullite</td>
<td>1302-93-8</td>
<td>30 - &lt; 40</td>
</tr>
</tbody>
</table>
4. First-aid measures

Description of necessary 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.

**Personal protection for first-aid responders**
IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Symptoms caused by exposure**
Direct contact with eyes may cause temporary irritation.

**Medical attention and special treatment**
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.

**Suitable extinguishing media**
Not available.

**Unsuitable extinguishing media**
Not available.

**Specific hazards arising from the chemical**
Not available.

**Special protective equipment and precautions for fire fighters**
Not available.

**Hazchem Code**
None.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**
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. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**For emergency responders**
Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

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

**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.

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. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls and personal protection

**Control parameters**
Follow standard monitoring procedures.
occupational exposure limits

australia. national workplace oels (workplace exposure standards for airborne contaminants, appendix a)

<table>
<thead>
<tr>
<th>components</th>
<th>type</th>
<th>value</th>
<th>form</th>
</tr>
</thead>
<tbody>
<tr>
<td>cristobalite</td>
<td>twa</td>
<td>0.1 mg/m³</td>
<td>respirable dust.</td>
</tr>
<tr>
<td>quartz</td>
<td>twa</td>
<td>0.1 mg/m³</td>
<td>respirable dust.</td>
</tr>
</tbody>
</table>

australia. oels. (adopted national exposure standards for atmospheric contaminants in the occupational environment)

<table>
<thead>
<tr>
<th>components</th>
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<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>cristobalite</td>
<td>twa</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>quartz</td>
<td>twa</td>
<td>0.1 mg/m³</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>cristobalite</td>
<td>twa</td>
<td>0.025 mg/m³</td>
<td>respirable fraction.</td>
</tr>
<tr>
<td>quartz</td>
<td>twa</td>
<td>0.025 mg/m³</td>
<td>respirable fraction.</td>
</tr>
</tbody>
</table>

uk. eh40 workplace exposure limits (wels)

<table>
<thead>
<tr>
<th>components</th>
<th>type</th>
<th>value</th>
<th>form</th>
</tr>
</thead>
<tbody>
<tr>
<td>cristobalite</td>
<td>twa</td>
<td>1 fibers/mL</td>
<td>fiber.</td>
</tr>
<tr>
<td>quartz</td>
<td>twa</td>
<td>5 mg/m³</td>
<td>fiber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1 mg/m³</td>
<td>respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1 mg/m³</td>
<td>respirable.</td>
</tr>
</tbody>
</table>

biological limit values

no biological exposure limits noted for the ingredient(s).

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. occupational exposure limits are not relevant to the current physical form of the product.

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, for example personal protective equipment (ppe)

eye/face protection

if contact is likely, safety glasses with side shields are recommended.

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.

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: Solid. Paste.
Colour: Not available.
Odour: Not available.
Odour threshold: Not available.
\( p \mathcal{H} \): 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.

Vapour pressure: Not available.
Vapour 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 physical and chemical parameters
Explosive properties: Not explosive.
Oxidising properties: Not oxidising.

10. Stability and reactivity
Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Contact with incompatible materials.
Incompatible materials: Powerful oxidizers, Chlorine. 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.

11. Toxicological information

Information on possible routes of exposure

- Inhalation: No adverse effects due to inhalation are expected.
- 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 exposure
Direct contact with eyes may cause temporary irritation.

Acute toxicity
Not known.

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation
Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitisation

Respiratory sensitisation
Not a respiratory sensitizer.

Skin sensitisation
This product is not expected to cause skin sensitisation.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
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.

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

Developmental effects
Quartz (SiO2) 0

Developmental effects - EU category
Quartz (SiO2) 0

Embryotoxicity
Quartz (SiO2) 0

Reproductivity
Quartz (SiO2) 0

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
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 this product.

Bioaccumulative potential
No data available.

Mobility in soil
No data available for this product.

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 methods
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. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

14. Transport information

ADG
Not regulated as dangerous goods.

RID
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

15. Regulatory information

Safety, health and environmental regulations

National regulations
This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

Australia Medicines & Poisons Appendix A
GLASS (INCLUDING CRYSTAL WARE) (CAS 14464-46-1)
Cristobalite (CAS 14464-46-1) 10000 - 99999 TONNES See the regulation for additional information.
Quartz (SiO2) (CAS 14808-60-7) 100000 - 999999 TONNES See the regulation for additional information.

Importation of Ozone Deleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)
Not listed.

National Pollutant Inventory (NPI) substance reporting list
Not listed.

Prohibited Carcinogenic Substances
Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)
Not listed.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)
Not listed.

Restricted Carcinogenic Substances
Not regulated.

International regulations

Stockholm Convention
Not applicable.

Rotterdam Convention
Not applicable.

Kyoto protocol
Not applicable.

Montreal Protocol
Not applicable.

Basel Convention
Not applicable.
### 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>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</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>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</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>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</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

**Issue date**

07-May-2017

**Disclaimer**

This information is based on our present knowledge on creation date. However, this shall no constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Revision information**

- Composition / Information on Ingredients: Ingredients
- Ecological Information: Ecotoxicity
- Transport Information: Material Transportation Information
- GHS: Classification