1. Product and Company Identification

Material name: INSBOARD 2300 LD; INSBOARD 2300 HD

Version #: 01
Issue date: 03-10-2015
CAS #: Mixture
Brand Code: 0579, 0580
Product use: For Industrial Use Only

Manufacturer information:
HarbisonWalker International
1305 Cherrington Parkway, Suite 100
Moon Township, Pennsylvania 15108
United States
www.thinkHWI.com

General Phone: 412-375-6600
CHEMTREC 24 HOUR EMERGENCY #: 1-800-424-9300

2. Hazards Identification

Emergency overview:
WARNING
Harmful in contact with eyes. Cancer hazard. Irritating to skin. Irritating to respiratory system.
Prolonged exposure may cause chronic effects. Crystalline silica (cristobalite) may be formed in RCF products following sustained high temperature (>1800 Deg F; 982 Deg C) use.

OSHA regulatory status:
This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects:
- Routes of exposure:
  - Inhalation: May cause cancer by inhalation. Irritating to respiratory system. Prolonged inhalation may be harmful. Avoid breathing dust.
  - Ingestion: Components of the product may be absorbed into the body by ingestion. Do not ingest.

- Target organs:
  - Eyes: Skin.

- Chronic effects:
  - Conjunctiva: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

- Signs and symptoms:
  - Conjunctivitis, Corneal damage. Defatting of the skin. Irritating to mouth, throat, and stomach. Skin irritation. Rash.

Potential environmental effects:
May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminosilicate Refractory Ceramic Fiber</td>
<td>142844-00-6</td>
<td>80 - 90</td>
</tr>
<tr>
<td>Starch</td>
<td>9005-25-8</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Silicon Dioxide</td>
<td>7631-86-9</td>
<td>2.5 - 10</td>
</tr>
</tbody>
</table>
Composition comments
This product contains Refractory Ceramic Fibers (RCF) or an RCF wrap or mat. IARC has classified RCFs as a possible human carcinogen, Group 2B. This classification was based on sufficient evidence of carcinogenicity in animals and no available data in humans. NTP classified respirable RCFs as reasonably anticipated carcinogens. Recent industry ongoing epidemiology studies show the general health of workers in the RCF industry was similar to that of workers in other dusty work environments. There have been no reports of mesothelioma, and the lung cancer rate appears similar to background rates, but the number of workers with a long latency period are too few for definitive conclusions. There was a small number of employees with an increased risk of developing pleural plaques (shadows along the inside of the chest wall). These plaques, however, are not known to cause symptoms or disability. ANH recommends that safe handling methods are followed, including air monitoring in areas wherever the potential exists for airborne fibers, minimizing airborne exposures through use of NIOSH approved respirators, and wearing protective clothing, gloves, and eye protection. For additional information please visit www.rcfc.net

Please review the workplace guidelines for additional handling information.

4. First Aid Measures
First aid procedures

**Inhalation**
Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if the victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.

**Skin contact**
Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**Ingestion**
Rinse mouth thoroughly. If ingestion of a large amount does occur, call a poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to physician**
In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General advice**
In case of shortness of breath, give oxygen. If concerned: Get medical advice. 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. Keep victim under observation. Keep victim warm.

5. Fire Fighting Measures

**Flammable properties**
The product is not flammable. No unusual fire or explosion hazards noted.

**Extinguishing media**

- **Suitable extinguishing media**

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers.

6. Accidental Release Measures

**Personal precautions**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods for containment**
Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up**
Avoid dust formation. Should not be released into the environment. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

**Handling**
Do not get this material in contact with eyes. Avoid breathing dust. Avoid contact with skin. Avoid prolonged exposure. Do not use in areas without adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Handle and open container with care.
8. Exposure Controls / Personal Protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starch (CAS 9005-25-8)</td>
<td>TWA</td>
<td>10 mg/m^3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starch (CAS 9005-25-8)</td>
<td>5 mg/m^3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td>15 mg/m^3</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. OSHA Table Z-3 (29 CFR 1910.1000) Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Dioxide (CAS 7631-86-9)</td>
<td>TWA</td>
<td>0.8 mg/m^3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mppcf</td>
</tr>
</tbody>
</table>

Biological limit values

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

Exposure guidelines

*Except for the state of California, where the PEL for RCF is 0.2 f/cc 8-hr TWA, there is no specific regulatory standard for RCF in the U.S. OSHA’s “Particulate Not Otherwise Regulated (PNOR)” standard (29 CFR 1910.1000, Subpart Z, Air Contaminants) applies generally - Total Dust 15 mg/m^3; Respirable Fraction 5 mg/m^3. **In the absence of an OSHA PEL, the HTIW Coalition has adopted a recommended exposure guideline (REG), as measured under NIOSH Method 7400 B. For further information on the history and development of the REG see “Rationale for the Recommended Exposure Guideline” at Attachment II of the HTIW Coalition Product Stewardship Program http://www.htiwcoalition.org/documents/PSP_2012.pdf. OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL) RCF-related occupational exposure limits vary internationally. Regulatory OEL examples include: California, 0.2 f/cc; Canadian provincial OELs ranging from 0.2 to 1.0 f/cc. The objectives and criteria underlying each of these OEL decisions also vary. The evaluation of occupational exposure limits and the determination of their applicability to the workplace are best performed, on a case-by-case basis, by a qualified Industrial Hygienist.

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. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

**Eye / face protection**
Wear safety glasses with side shields (or goggles). Do not get in eyes. Eye wash fountain is recommended.

**Skin protection**
Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves.

**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 protective gloves.

**General hygiene considerations**
Keep away from food and drink. 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 & Chemical Properties

**Appearance**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Solid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Vapor density  Not available.
Boiling point  Not available.
Melting point/Freezing point  Not available.
Solubility (water)  Not available.
Specific gravity  Not available.
Relative density  Not available.
Flash point  Not available.
Flammability limits in air, upper, % by volume  Not available.
Flammability limits in air, lower, % by volume  Not available.
Auto-ignition temperature  Not available.

10. Chemical Stability & Reactivity Information

Chemical stability  Material is stable under normal conditions.
Conditions to avoid  Contact with incompatible materials.
Incompatible materials  Acids. Fluorine. Chlorine. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.
Hazardous decomposition products  No hazardous decomposition products are known.

11. Toxicological Information

Local effects  Components of the product may be absorbed into the body through the skin. Irritating to respiratory system. Irritating to skin. Contact may irritate or burn eyes.
Chronic effects  Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Carcinogenicity  Hazardous by OSHA criteria. Risk of cancer cannot be excluded with prolonged exposure.

ACGIH Carcinogens

Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)  A2 Suspected human carcinogen.
Starch (CAS 9005-25-8)  A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)  2B Possibly carcinogenic to humans.
Silicon Dioxide (CAS 7631-86-9)  3 Not classifiable as to carcinogenicity to humans.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Skin corrosion/irritation  Irritating to skin.

12. Ecological Information

Ecotoxicity  Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects  An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability  Not available.

13. Disposal Considerations

Waste codes  The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal instructions  Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products  Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Not applicable.
Contaminated packaging  Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
14. Transport Information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Toxic Substances Control Act (TSCA) Section 12(b) - RCF has been assigned a CAS number; however, it is an "article" under TSCA and therefore exempt from listing on the TSCA inventory. 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 (Superfund) reportable quantity, lbs
None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
No

Inventory status

<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 (NDLS)</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>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>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>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).

State regulations
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. Massachusetts RTK - Substance List
Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)
Silicon Dioxide (CAS 7631-86-9)
Starch (CAS 9005-25-8)

US. New Jersey Worker and Community Right-to-Know Act
Aluminosilicate Refractory Ceramic Fiber (CAS 142844-00-6)
Silicon Dioxide (CAS 7631-86-9)
16. Other Information

Further information
HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2*
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 0
Instability: 0

Disclaimer
HarbisonWalker International cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.