1. Identification

Product identifier: NARGON A-90

Other means of identification

Brand Code: 8255

Recommended use: For Industrial Use Only

Recommended restrictions: None known.

Manufacturer/Supplier 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

Emergency phone number:

CHEMTREC 24 HOUR EMERGENCY # 1-800-424-9300

2. Hazard(s) identification

Classified hazards

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per OSHA 29 CFR 1910.1200(c). However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

Label elements

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per OSHA 29 CFR 1910.1200(c). However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

Hazard(s) not otherwise classified (HNOC)

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.

This item is not hazardous per OSHA 29 CFR 1910.1200(c). However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves/protective clothing/eye protection. Dust may cause cancer.

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>Aluminium Oxide (Non-Fibrous)</td>
<td></td>
<td>1344-28-1</td>
<td>60 - 80</td>
</tr>
<tr>
<td>Mullite</td>
<td></td>
<td>1302-93-8</td>
<td>20 - 40</td>
</tr>
<tr>
<td>ALUMINIUM ORTHOPHOSPHATE</td>
<td></td>
<td>7784-30-7</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Silicon Dioxide</td>
<td></td>
<td>7631-86-9</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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: Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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. 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. 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: Avoid prolonged exposure. Observe good industrial hygiene practices.

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

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1) PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. OSHA Table Z-3 (29 CFR 1910.1000)</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon Dioxide (CAS 7631-86-9) TWA</td>
<td>0.8 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 mppcf</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALUMINIUM ORTHOPHOSPHATE (CAS 7784-30-7) TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
<td></td>
</tr>
<tr>
<td>Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1) TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
<td></td>
</tr>
<tr>
<td>Mullite (CAS 1302-93-8) TWA</td>
<td>1 mg/m³</td>
<td>Respirable fraction.</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Type</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Silicon Dioxide (CAS 7631-86-9)</td>
<td>TWA</td>
<td>6 mg/m³</td>
<td></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**
    Wear suitable protective clothing.
- **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**
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
- **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.
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
Acids, 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

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

Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

- Acute toxicity
  Not available.

- 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
  This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

  IARC Monographs. Overall Evaluation of Carcinogenicity
  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.

- 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
  Not classified.

- Aspiration hazard
  Not an aspiration hazard.

- Chronic effects
  Prolonged inhalation may be harmful.

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.

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
Not applicable.

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 not known to be 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.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
No

SARA 313 (TRI reporting)

Chemical name | CAS number | % by wt.
--- | --- | ---
Aluminium Oxide (Non-Fibrous) | 1344-28-1 | 60 - 80

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

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.
US. Massachusetts RTK - Substance List
   Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
   Silicon Dioxide (CAS 7631-86-9)

US. New Jersey Worker and Community Right-to-Know Act
   ALUMINIUM ORTHOPHOSPHATE (CAS 7784-30-7)
   Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
   Silicon Dioxide (CAS 7631-86-9)

US. Pennsylvania Worker and Community Right-to-Know Law
   Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)
   Silicon Dioxide (CAS 7631-86-9)

US. Rhode Island RTK
   Aluminium Oxide (Non-Fibrous) (CAS 1344-28-1)

US. California Proposition 65
   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.

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>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>Yes</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, including date of preparation or last revision

Issue date: 05-11-2015
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
Product and Company Identification: Material Attributes
Composition / Information on Ingredients: After Reaction Composition