1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: TAMKO Shingle Products


USE & DESCRIPTION: Oxidized Asphalt Shingles used for roofing

CHEMICAL FAMILY: Mixture

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Danger

GHS CLASSIFICATION:
- Carcinogenicity – Category 1A
- Skin Irritation – Category 2
- Sensitization (Skin) – Category 1B
- Eye Irritation – Category 2B
- Specific Target Organ Toxicity, Repeated Exposure – Category 1

HAZARD STATEMENTS:
- May cause cancer.
- Causes skin and eye irritation.
- May cause an allergic skin reaction.
- Causes damage to organs through prolonged or repeated exposure.

Additional hazard information: Can cause silicosis and other permanent lung damage.

PRECAUTIONARY STATEMENTS:

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

Response
- If on skin: Wash with plenty of water. Get medical advice/attention: If exposed or concerned or you feel unwell, if eye and or skin irritation persists.
- Specific treatment: See section 4-First Aid
- In case of fire: See Section 5.
- Take off contaminated clothing, and wash before reuse.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage
- Store locked up.

Disposal
- Dispose in accordance with Federal, State, and Local regulations. (See section 13 for additional information).

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone*</td>
<td>1317-65-3</td>
<td>60-70</td>
</tr>
<tr>
<td>Oxidized Asphalt</td>
<td>64742-93-4</td>
<td>20-30</td>
</tr>
<tr>
<td>Mineral Granules*</td>
<td>NE</td>
<td>30-40</td>
</tr>
<tr>
<td>Fiberglass Mat**</td>
<td>NE</td>
<td>5-8</td>
</tr>
<tr>
<td>**Contains Fiberglass</td>
<td>65997-17-3</td>
<td>4-7</td>
</tr>
<tr>
<td>**Contains Urea Formaldehyde Binder</td>
<td>9011-05-6</td>
<td>0.5-1.5</td>
</tr>
<tr>
<td>**Contains Formaldehyde</td>
<td>50-00-0</td>
<td>0.01-0.2</td>
</tr>
<tr>
<td>Sand*</td>
<td>14808-60-7</td>
<td>0-10</td>
</tr>
<tr>
<td>Headlap*</td>
<td>NE</td>
<td>0-30</td>
</tr>
<tr>
<td>Polyester Mat</td>
<td>NE</td>
<td>0-8</td>
</tr>
<tr>
<td>*Contains Crystalline Silica (Quartz)</td>
<td>14808-60-7</td>
<td>0.1-5</td>
</tr>
</tbody>
</table>

*NE = Not established

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of cool water for at least 20 minutes, occasionally lifting the eye lids to ensure thorough rinsing. Get medical attention if irritation persists.

SKIN CONTACT: Clean any exposed skin with warm soapy water if possible. If not, and a waterless hand cleaner is used, it should be without pumice. Do not use solvents or thinners to remove material from skin. Get medical attention if irritation persists or develops.

INGESTION: If swallowed, do not induce vomiting. If vomiting occurs, keep head lower than hips to avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis. Call poison control center or get immediate medical attention.

INHALATION: If inhalation of dust occurs, remove person to fresh air. Drink water to clear throat or blow nose to clear. If not breathing, give artificial respiration or give oxygen by trained personnel and get immediate medical attention.

NOTES TO PHYSICIAN: Treatment should be based on removing the source of irritation with treatment of symptoms as necessary.
5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, CO₂, or foam fire extinguisher should be used for controlling small fires. Avoid use of straight-stream water.

SPECIAL FIRE FIGHTING PROCEDURES: Avoid breathing fumes. Firefighters should not enter confined spaces without wearing NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE OR EXPLOSION HAZARDS: When heated, fumes may burn if ignition source is provided. Petroleum asphalt fumes can explode if emitted in an enclosed environment and supplied with an ignition source. Burning product will cause thick black smoke.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.

6. ACCIDENTAL RELEASE MEASURES

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED: Pick up large pieces. Leather or cotton gloves must be worn when handling. Do not dry sweep dusts or blow with air in confined area.

WASTE DISPOSAL METHODS: Dispose in accordance with applicable Federal, State, and Local regulations. Do not burn.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: Store away from heat and all ignition sources and open flames in accordance with applicable laws and regulations. PRODUCT SHOULD NOT BE BURNED OR HEATED USING A DIRECT FLAME DEVICE.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Follow recommended work practices and use recommended personal protective clothing and equipment. See Section 8 of this SDS.

8. EXPOSURE CONTROLS/PERSO NAL PROTECTION

EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Products</td>
<td></td>
<td>TWA</td>
<td>STEL</td>
</tr>
<tr>
<td>Oxidized Asphalt</td>
<td>64742-93-4</td>
<td>NE</td>
<td>NE 0.5*</td>
</tr>
<tr>
<td>Limestone†</td>
<td>1317-65-3</td>
<td>15/5*</td>
<td>10/3**</td>
</tr>
<tr>
<td>Sand†</td>
<td>1408-60-7</td>
<td>15/5**</td>
<td>NE 10/3**</td>
</tr>
<tr>
<td>Headlap†</td>
<td>68476-96-0</td>
<td>15/5**</td>
<td>NE 10/3**</td>
</tr>
<tr>
<td>Fiberglass††</td>
<td>65997-17-3</td>
<td>15/5**</td>
<td>NE 5**</td>
</tr>
<tr>
<td>††Contains Formaldehyde</td>
<td>50-00-0</td>
<td>0.75</td>
<td>2</td>
</tr>
<tr>
<td>†††Contains Crystalline Silica Quartz</td>
<td>1408-60-7</td>
<td>0.05</td>
<td>NE 0.025</td>
</tr>
</tbody>
</table>

NE = Not established.
Note: Due to the form of the product, hazardous exposures from this product are not expected to occur under normal conditions of use. Gloves must be worn when handling and adequate ventilation must be provided during roofing related activities.

RESPIRATORY PROTECTION: Normally not needed in well-ventilated areas. If applicable exposure standards are exceeded or can be exceeded introduce ventilation to remove dust. If increased ventilation is not possible, use a NIOSH approved air-purifying respirator. If concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator/SCBA use, fitting, and training standards and regulations.

VENTILATION: Use only with adequate ventilation to maintain exposures below applicable exposure limits.

EYE PROTECTION: Safety glasses with side shields must be used if eye contact is possible.

SKIN: Must wear leather or cotton gloves during application and/or tear off activities.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance and Odor: Granular surface on oxidized asphalt coated mat. | Upper/Lower Flammability or Explosive Limits: Not Applicable |
| Odor Threshold: Not Applicable | Vapor Pressure: Not Applicable |
| pH: Not Applicable | Vapor Density (Air = 1): Not Applicable |
| Boiling Point: >700 °F | Specific Gravity/Relative Density: Variable |
| Melting Point: >200 °F | Solubility (IES): No data available |
| Flash Point: Not Applicable | Initial Boiling Point and Boiling Range: Not Applicable |
| Autoignition Temperature: >460°C/860°F | Evaporation Rate (Butyl Acetate = 1): <0.1 |
| Viscosity: Not Applicable | Flammability (Solid and Gas): Not Applicable |
| Decomposition Temperature: Not Applicable | Partition Coefficient: N-Octanol/Water: Not Applicable |

10. STABILITY AND REACTIVITY

STABILITY: Stable

REACTIVITY: Reactivity will not occur.

CONDITIONS TO AVOID: Keep from heat, sparks, open flame and other sources of ignition. Avoid contact with strong oxidizing agents.

PRODUCT SHOULD NOT BE BURNED OR HEATED USING A DIRECT FLAME DEVICE.

HAZARDOUS REACTION: Polymerization will not occur.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong acids or bases, oxidizing agents and selected amines.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.
11. TOXICOLOGICAL INFORMATION

EYE – May cause eye irritation.
SKIN – May cause skin irritation.
INHALATION – Dust may cause upper respiratory irritation.
INGESTION – May cause harmful effects if swallowed.

THE FOLLOWING COMPONENT DATA IS PROVIDED FOR USER INFORMATION:

FORMALDEHYDE
Cancer - This product may contain formaldehyde. IARC and NTP have classified formaldehyde as a human carcinogen based on sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, limited evidence for cancer of the nasal cavity and paranasal sinuses, and "strong but not sufficient evidence" for leukemia. The finding for leukemia reflects the epidemiologists' finding of strong evidence in human studies coupled with an inability to identify a mechanism for induction of leukemia. The physical nature of this product may help limit any inhalation hazard from formaldehyde during application and in its hardened state.

Acute Effects - The major acute toxic effects caused by formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Ingestion exposure to formaldehyde in humans has resulted in corrosion of the gastrointestinal tract and inflammation and ulceration of the mouth, esophagus, and stomach.

Chronic Effects - In addition to cancer, exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and eye, nose, and throat irritation. Repeated contact with liquid solutions of formaldehyde has resulted in skin irritation and allergic contact dermatitis in humans.

SILICA
Cancer - This product contains crystalline silica (quartz). IARC has determined that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1). IARC concluded that there was sufficient evidence in humans and animals for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational sources. The NTP has classified silica as known to be a human carcinogen. The physical nature of this product may help limit any inhalation hazard from crystalline silica during application and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on this product may liberate crystalline silica dust.

Acute Effects - Exposure to silica dust can cause irritation of the eyes, nose and throat. Exposure to high concentrations can also cause Accelerated Silicosis causing progressive shortness of breath, fever, coughing, and weight loss.

Chronic Effects - In addition to cancer, breathing of silica over a period of time can cause damage to the lung tissue and silicosis after long exposure at low concentrations causing shortness of breath, fever, coughing, and weight loss. Prolonged and repeated exposure to respirable silica-containing dust may also cause autoimmune disease, kidney disease, tuberculosis, nonmalignant respiratory disease, and bronchitis.

OXIDIZED ASPHALT
Cancer - This product contains oxidized asphalt. Occupational exposures to oxidized asphalt and its emissions during roofing activities have been classified by the International Agency for Research on Cancer (IARC) as "probably carcinogenic to humans" (Group 2A). IARC based this classification on its finding that available data from studies in humans points to an association between exposures to oxidized asphalts during roofing and cancers of the lung and upper aerodigestive tract. IARC also determined that there was sufficient evidence of carcinogenicity of extracts and condensates of oxidized asphalts in experimental animals. The oxidized asphalt in this product may contain small amounts of Polycyclic Aromatic Hydrocarbons (PAH’s) some of which are recognized carcinogens in humans or experimental animals. Oxidized asphalt may also cause irritation of the respiratory tract. The physical nature of this product may help limit any inhalation hazard from oxidized asphalt during application in its hardened state. However, physical forces such as grinding, drilling and other demolition work on this product may liberate dust containing oxidized asphalt. Burning or heating of the product may cause fumes, vapors or mists.

Acute Effects - Inhalation of dust may cause nose, throat, respiratory tract, and mucous membrane irritation. Eye contact may cause severe irritation, redness, tearing, and blurred vision. If ingested, may cause mouth, throat and gastrointestinal tract irritation and upset with possible nausea, vomiting and diarrhea. See Section 8 for exposure controls.

Chronic Effects - In addition to cancer, prolonged or repeated skin contact may result in dryness and irritation of the skin. Long term skin exposure to asphalt can increase sensitivity to the sun and may cause discoloration. Oxidized asphalt may also cause irritation of the upper respiratory tract.

12. ECOLOGICAL INFORMATION

Ecotoxicity – No data available
Persistence and degradability – No data available
Bioaccumulative potential – No data available
Mobility in Soil – No data available
Other adverse effects (GHG, Ozone) - No data available

13. DISPOSAL CONSIDERATIONS

This product has not been regulated as a hazardous waste by the USEPA. Dispose in accordance with Federal, State, and Local regulations. Do not burn. Do not dispose as sewage.

14. TRANSPORT INFORMATION

This product is not regulated as a hazardous material for transport under 49 CFR or for vessel transport under the IMDG Code.

UN number: Not applicable
UN Proper Shipping Name: Not applicable
Packing Group, if applicable: Not applicable
Environmental Hazards: Not applicable
Transport in bulk: Not applicable
Special Precautions: Not applicable
15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA): Some components in this product are listed on the TSCA Inventory.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA): None

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), TITLE III:
- Section 302 Extremely Hazardous Substances: None
- Section 311/312 Hazard Categories: See Section 2 of the SDS.
- Section 313 Reportable Ingredients: This material contains the following chemicals which are subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Concentration (% by Wt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>0.01-0.2</td>
</tr>
</tbody>
</table>


16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Rating</th>
<th>NFPA Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health - 1</td>
<td>Health - 1</td>
</tr>
<tr>
<td>Flammability 1</td>
<td>Flammability - 1</td>
</tr>
<tr>
<td>Reactivity - 0</td>
<td>Reactivity - 0</td>
</tr>
</tbody>
</table>

Preparation Date: April 2015
Revision Date: August 2016
Revisions: Added TAMKO Perforated Starter to label.
          Updated Sections 3 and 8.
Revision Date: February 2017
Revisions: Updated ingredients and % by weight in Section 3.
          Corrected typos in Section 7.
          Updated raw products table footnotes and changed OSHA TWA for crystalline silica quartz in Section 8.
          Updated California Proposition 65 warning language in Section 15.
Revision Date: February 2019
Revisions: Updated Header (Date and T code).
          Added TAMKO Heritage IR and 12 ¼ x 12 Heritage Hip & Ridge IR to label in Section 1.
          Updated ingredients and % by weight in Section 3.
          Updated raw products table in Section 8.
          Updated Section 311 / 312 Hazard Categories in Section 15.

Disclaimer of Liability

The information and recommendations contained herein are to the best of TAMKO Building Products, Inc.’s knowledge and belief, accurate and reliable as of the date issued. TAMKO Building Products, Inc. does not warrant or guarantee their accuracy or reliability, and TAMKO Building Products, Inc. shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user’s consideration and examination, and it is the user’s responsibility to satisfy his or herself that they are suitable and complete for the user’s particular use.