1. Identification

1.1. Product identifier

Product Identity: 27 Aluminum Asphalt Coatings
Alternate Names: 27 Aluminum Asphalt Coatings

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use: See Technical Data Sheet.
Application Method: See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name: Karnak Corporation
330 Central Ave.
Clark, NJ 07066 USA

Emergency: www.karnakcorp.com
CHEMTREC (USA): (800) 424-9300
24 hour Emergency Telephone No.: OUTSIDE THE U.S AND CANADA 1-202-483-7616
Customer Service: Karnak Corporation: 1-800-526-4236

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Flam. Liq. 3;H226: Flammable liquid and vapor.
STOT RE 1;H372: Causes damage to organs through prolonged or repeated exposure. Specific Target Organs: (central nervous system )

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

H226 Flammable liquid and vapor.
H372 Causes damage to organs through prolonged or repeated exposure.
[Prevention]:
P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.
P235 Keep cool.
P240 Ground / bond container and receiving equipment.
P241 Use explosion-proof electrical / ventilating / light / equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves / eye protection / face protection.

[Response]:
P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
P314 Get Medical advice / attention if you feel unwell.
P331 Do NOT induce vomiting.
P370+378 In case of fire: Use extinguishing media listed in section 5 of SDS for extinction.

[Storage]:
P403+233 Store in a well ventilated place. Keep container tightly closed.

[Disposal]:
P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

<table>
<thead>
<tr>
<th>Ingredient/Chemical Designations</th>
<th>Weight %</th>
<th>GHS Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoddard solvent CAS Number:</td>
<td>25 - 50</td>
<td>STOT RE 1;H372 Asp. Tox. 1;H304</td>
<td>[1][2]</td>
</tr>
<tr>
<td>CAS Number:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bitumen (containing aromatic oils) CAS Number:</td>
<td>25 - 50</td>
<td>Not Classified</td>
<td>[1]</td>
</tr>
<tr>
<td>Calcium carbonate CAS Number:</td>
<td>10 - 25</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
<tr>
<td>Aluminum (Al) CAS Number:</td>
<td>10 - 25</td>
<td>Pyr. Sol. 1;H250 WaterReact. 2;H261</td>
<td>[1][2]</td>
</tr>
<tr>
<td>Cellulose CAS Number:</td>
<td>1.0 - 10</td>
<td>Not Classified</td>
<td>[1][2]</td>
</tr>
</tbody>
</table>
4. First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation

If respiratory discomfort occurs, remove to fresh air. If discomfort continues, administer oxygen and get medical attention.

Eyes

Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin

If this product comes in contact with skin, remove material with mineral oil, then wash with soap and plenty of water.

Ingestion

If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview

POTENTIAL HEALTH EFFECTS

Eye Contact: May cause tearing, stinging, redness, irritation, and burns.

Inhalation: Irritating to respiratory tract. Prolonged or repeated breathing of very high vapor concentrations cause euphoria, excitation, and dizziness, headaches, nausea, and vomiting, abdominal pain, fatigue, muscular weakness. Aspiration into the lungs can cause CNS (central nervous system) and subsequent aspiration into the lungs can cause pulmonary edema and chemical pneumonia depression. Chronic overexposure in high concentrations may produce CNS depression.

Ingestion: Irritation of the mouth, esophagus, and stomach can develop following ingestion. Symptoms include burning of the mouth, sore throat, vomiting, nausea, dizziness, loss of consciousness. Due to its light viscosity, there is danger of aspiration into the lungs during vomiting. Aspiration can result in severe lung damage or death.

Skin Contact: Prolonged or repeated skin contact may cause moderate to severe irritation including itching and redness of the skin, defatting, and/or dermatitis. This product can also be absorbed through the skin and produce CNS symptoms. Single prolonged exposure is not likely to result in the product being absorbed through the skin in harmful amounts.

Signs And Symptoms Of Exposure: Eye irritation, respiratory irritation, drying and cracking of skin, dizziness, fatigue, headache, unconsciousness or asphyxiation. Chronic effects of ingestion and subsequent aspiration into the lungs can cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Repeated breathing of vapors can cause effects to liver and kidneys.

Exposure to solvent vapor concentrations from the component solvents in excess of the
stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage. See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media
Use dry chemicals, carbon dioxide foam, water fog, or inert gas (nitrogen) for small fires. For large fires use foam, water fog, or water spray. Water fog and spray are effective in cooling containers and adjacent structures but might cause frothing and/or not achieve extinguishment. A water jet may be used to cool the container’s external walls to prevent pressure build-up, auto ignition, or explosion. NEVER use a water jet directly on the fire. Product will float and can be re-ignited on surface of water.

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: High temperatures and fires may produce such toxic substances as carbon monoxide and carbon dioxide.
Keep away from heat / sparks / open flames / hot surfaces - No smoking.
Keep cool.
Ground / bond container and receiving equipment.
Use explosion-proof electrical / ventilating / light / equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe mist / vapors / spray.
Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters
When heated above flash point, material will release flammable vapors which can burn or be explosive in confined spaces if ignited. Do not mix with strong oxidants such as liquid chlorine or concentrated oxygen. Minimize breathing vapors, gases or fumes of decomposition products. Do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

ERG Guide No. 130

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Eliminate sources of ignition, and ventilate the area. Add sand or earth or absorb spill with suitable absorbent material and place in a closed container. Keep product out of sewers and waterways by diking or impounding. Advise authorities if product has entered or may enter sewers or waterways. Assure conformity with applicable governmental regulations. Eliminate ignition sources. Soak up with noncombustible absorbent material. Remove absorbent material for proper disposal.

7. Handling and storage

7.1. Precautions for safe handling

The requirements of the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations apply if the flashpoint is between 21°C and 32°C. See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage. Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard. Incompatible materials: Strong acids, alkalis, and oxidizers such as liquid chlorine, halogens, hydrogen peroxide, oxygen.

Other Precautions: All labeled precautions must be observed when handling, storing and transporting empty containers due to product residues. Do not reuse containers. Empty containers may contain material residues which can ignite with explosive force. Cutting or welding of empty containers can cause fire, explosion, or release fumes from residues. Keep containers closed and drum bungs in place. Dispose of in a licensed facility. See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

8. Exposure controls and personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001317-65-3</td>
<td>Calcium carbonate</td>
<td>OSHA</td>
<td>TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)</td>
</tr>
</tbody>
</table>
### Carcinogen Data

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001317-65-3</td>
<td>Calcium carbonate</td>
<td>OSHA</td>
<td>Select Carcinogen: No&lt;br&gt;NTP Known: No; Suspected: No&lt;br&gt;IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0007429-90-5</td>
<td>Aluminum (Al)</td>
<td>OSHA</td>
<td>Select Carcinogen: No&lt;br&gt;NTP Known: No; Suspected: No&lt;br&gt;IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0008052-41-3</td>
<td>Stoddard solvent</td>
<td>OSHA</td>
<td>Select Carcinogen: No&lt;br&gt;NTP Known: No; Suspected: No&lt;br&gt;IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
<tr>
<td>0009004-34-6</td>
<td>Cellulose</td>
<td>OSHA</td>
<td>Select Carcinogen: No&lt;br&gt;NTP Known: No; Suspected: No&lt;br&gt;IARC Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;</td>
</tr>
</tbody>
</table>
8.2. Exposure controls

Respiratory
If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes
Safety glasses or face shield for liquid material.

Skin
Wear nitrile or similar chemical resistant gloves to keep skin contact to a minimum. Refer to the manufacturer's recommendations regarding the suitability of any gloves used.

Engineering Controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices
Long sleeves and impervious clothing to protect against splashing. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark Aluminum Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild Petroleum</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not Measured</td>
</tr>
<tr>
<td>pH</td>
<td>Not Measured</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>NA</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>300-350F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>(PMCC): 104F min.</td>
</tr>
<tr>
<td>Evaporation rate (Ether = 1)</td>
<td>(Butyl Acetate=1)@77F: 0.2</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Lower Explosive Limit: Not Measured</td>
</tr>
<tr>
<td></td>
<td>Upper Explosive Limit: Not Measured</td>
</tr>
</tbody>
</table>
Vapor pressure (Pa) 3
Vapor Density (Air=1): > 4
Specific Gravity (H2O=1): 0.8 - 1.2
Solubility in Water Insoluble
Partition coefficient n-octanol/water (Log Kow) Not Measured
Auto-ignition temperature Not Measured
Decomposition temperature Not Measured
Viscosity (cSt) Not Measured

9.2. Other information
No other relevant information.

10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.

10.2. Chemical stability
Stable under normal circumstances.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Excessive heat and open flame.

10.5. Incompatible materials
Strong acids, alkalis, and oxidizers such as liquid chlorine, halogens, hydrogen peroxide, oxygen.

10.6. Hazardous decomposition products
High temperatures and fires may produce such toxic substances as carbon monoxide and carbon dioxide.

11. Toxicological information

Acute toxicity

Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Based upon animal testing, the C9 aromatic hydrocarbon components (trimethylbenzenes and ethylmethylbenzenes) are presumed to cause fetal toxicity and/or decreased fetal and newborn weights if overexposure occurs during the
early gestation period.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Oral LD50, mg/kg</th>
<th>Skin LD50, mg/kg</th>
<th>Inhalation Vapor LC50, mg/L/4hr</th>
<th>Inhalation Dust/Mist LC50, mg/L/4hr</th>
<th>Inhalation Gas LC50, ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoddard solvent - (8052-41-3)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Bitumen(containing aromatic oils) - (64742-93-4)</td>
<td>5,000.00, Rat - Category: 5</td>
<td>2,000.00, Rabbit - Category: 4</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Calcium carbonate - (1317-65-3)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Aluminum (Al) - (7429-90-5)</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Cellulose - (9004-34-6)</td>
<td>5,000.00, Rat - Category: 5</td>
<td>2,000.00, Rabbit - Category: 4</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic - (64742-95-6)</td>
<td>6,800.00, Rat - Category: 5</td>
<td>3,400.00, Rabbit - Category: 5</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
<th>Hazard Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>1</td>
<td>Causes damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>---</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

12. Ecological information
12.1. Toxicity
The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and GHS and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

Aquatic Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoddard solvent - (8052-41-3)</td>
</tr>
<tr>
<td>Bitumen(containing aromatic oils) - (64742-93-4)</td>
</tr>
<tr>
<td>Calcium carbonate - (1317-65-3)</td>
</tr>
<tr>
<td>Aluminum (Al) - (7429-90-5)</td>
</tr>
<tr>
<td>Cellulose - (9004-34-6)</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic - (64742-95-6)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
There is no data available on the preparation itself.

12.3. Bioaccumulative potential
Not Measured

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects
No data available.

13. Disposal considerations
13.1. Waste treatment methods
Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

14.1. UN number
DOT (Domestic Ground Transportation) Exemption: 173.150(f)(2): FP >= 38 °C (100 °F), no other hazard class, reclassified as combustible liquid, non-bulk is not regulated
IMO / IMDG (Ocean Transportation)
UN1999
Air Class: 3
ICAO/IATA
UN1999
Tars, liquid including road oils and cutback bitumens

14.2. UN proper shipping name
Tars, liquid including road oils and cutback bitumens

14.3. Transport hazard class(es)
IMDG: 3

14.4. Packing group
IMO: III

14.5. Environmental hazards
EmS No. F-E, S-E

14.6. Special precautions for user
IMDG: Marine Pollutant: No ERG Guide 130

Page 10 of 12
15. Regulatory information

<table>
<thead>
<tr>
<th>Regulatory Overview</th>
<th>The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Substance</td>
<td>All components of this material are either listed or exempt from listing on the TSCA Inventory.</td>
</tr>
<tr>
<td>Control Act (TSCA)</td>
<td>WHMIS Classification B3 D2A</td>
</tr>
</tbody>
</table>
| US EPA Tier II Hazards | Fire: Yes  
                 Sudden Release of Pressure: No  
                 Reactive: No  
                 Immediate (Acute): No  
                 Delayed (Chronic): Yes |
| EPCRA 311/312 Chemicals and RQs: | To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. |
| EPCRA 302 Extremely Hazardous: | To the best of our knowledge, there are no chemicals at levels which require reporting under this statute. |
| EPCRA 313 Toxic Chemicals: | Aluminum (Al) |
| California Proposition 65 (>0.0%): | △ WARNING: This product can expose you to chemicals including asphalt, which is known to the State of California to cause cancer and/or reproductive hazards. For more information, go to www.P65Warnings.ca.gov. |
| New Jersey RTK Substances (>1%): | Aluminum (Al)  
                 Bitumen(containing aromatic oils)  
                 Cellulose  
                 Calcium carbonate  
                 Stoddard solvent |
| Pennsylvania RTK Substances (>1%): | Aluminum (Al) |
Cellulose
Calcium carbonate
Stoddard solvent

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:
H250 Catches fire spontaneously if exposed to air.
H261 In contact with water releases flammable gases.
H304 May be fatal if swallowed and enters airways.
H372 Causes damage to organs through prolonged or repeated exposure.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. The information has been completed to the best of our knowledge and is believed to be accurate and reliable as from the date indicated. However, no warranty is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy oneself as to the suitability and completeness of such information for his own particular use.

End of Document