MSDS “APP modified bituminous waterproofing membrane”

**Product Name:** Plastoper, +Plastoper, Garden Stoper (Plastomeric type)

**1. Identification of the Material and Supplier**

**Product Name:** Plastoper, +Plastoper, Garden Stoper (Plastomeric type)

**Company Name:** Stoper Yapı ve Yalıtım Sistemleri AŞ

**Address:** Arslanbey OSB, Fabrikalar Sk. 11, 41285 Kocaeli

**Telephone/Fax no:** +90 262 351 32 32 / +90 262 351 33 33

**Recommended Use:** Applied on surfaces which are to be protected against water penetration. On terrace roofs, on sloped roofs under the tiles, tanking of the basins, protection of basements of structures against groundwater penetration, on bridges under the asphalt coat and for similar waterproofing purposes.

**Other Information:** This data and the health, safety and environmental information it contains, is considered to be accurate as of the date specified above. We have reviewed any information contained herein which we received from sources outside Stoper Yapı ve Yalıtım Sistemleri AŞ. However no warranty or representation, expressed or implied is made as to the accuracy and completeness of the data and information contained in this data sheet.

Health and safety precautions and environmental advice noted in this data sheet may not be accurate for all individuals and/or situations. It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission, recommendation and authorisation given or implied to practise any patented invention without a valid licence. Stoper Yapı ve Yalıtım Sistemleri AŞ shall not be responsible for any damage or injury resulting from abnormal use of the material, from accuracy and completeness of the information contained herein, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.
### 2. Composition/Information of Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>Cas #</th>
<th>%Weight</th>
<th>Exposure limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bituminous Blend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bitumen (160-220)</td>
<td>64741-56-6</td>
<td>30-70</td>
<td>0.5 mg/m³</td>
</tr>
<tr>
<td>Preventol B2(^1) (Garden membranes contain)</td>
<td>144768-02-5</td>
<td>0.3-0.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Calcium Carbonate(^1)</td>
<td>471-34-1</td>
<td>0-60</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Blend of Polypolyamine Copolymers and Homopolymers(^1)</td>
<td>9010-79-1 9003-07-0</td>
<td>0-20</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td><strong>Reinforcement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some products may contain fiberglass, polyester or a mix of glass grid and polyester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyester mat</td>
<td>N/A</td>
<td>1-8</td>
<td>N/A</td>
</tr>
<tr>
<td>Fiberglass mat(^1)</td>
<td>N/A</td>
<td>1-5</td>
<td>N/A</td>
</tr>
<tr>
<td>Fiberglass filament(^1)</td>
<td>65997-17-3</td>
<td>0.5-8</td>
<td>1 f/cc (for fibers longer than 5 µm and with a diameter of lower than 3 µm)</td>
</tr>
<tr>
<td><strong>UNDERFACE AND SURFACE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some membranes are protected by sand, talc, mineral granule, silicone paper, polyethylene or polypropylene film, aluminium, copper or stainless steel foil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silicone paper</td>
<td>N/A</td>
<td>6-20</td>
<td>N/A</td>
</tr>
<tr>
<td>Polyethylene film</td>
<td>9002-88-4</td>
<td>0.3-0.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Aluminium, Copper or Stainless steel foil</td>
<td>N/A</td>
<td>2-8</td>
<td>N/A</td>
</tr>
<tr>
<td>Sand</td>
<td>N/A</td>
<td>7-13</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>Coloured granules</td>
<td>N/A</td>
<td>15-50</td>
<td>N/A</td>
</tr>
<tr>
<td>Crystalline silica(^2)</td>
<td>14808-60-7</td>
<td>&lt;12</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

\(^1\) The exposure to the product above the limits of exposure is not likely to occur considering its form (incorporated in the mixture) and the provided use. The limit of exposure is given for reference only.

\(^2\) A proportion of crystalline silica can be present in the sand sprinkled on the top of some membranes. The crystalline silica contained in the sand is not likely to be found in the ambient air in concentration above the limit of exposure since the sand adheres to the surface of the membrane.
3. Hazards Identification

Effects of short term (acute) exposure

**Skin Contact:** The product can cause a mechanical irritation of the skin because of its rough surface. If the membrane is torch-applied, asphalt fumes can be emitted from the product. The asphalt fumes can cause an irritation of the skin. The contact with this product at high temperature can cause thermal burns.

**Eye Contact:** The product is not likely to cause effects to the eyes. If the membrane is torch-applied, asphalt fumes can be emitted from the product and cause irritations, redness and conjunctivitis to the eyes. The contact with this product at high temperature can cause thermal burns.

**Inhalation:** The product is not likely to cause effects on the respiratory system. If the membrane is torch-applied, asphalt fumes can be emitted from the product and cause irritations to the nose, the throat and the respiratory tracts, tiredness, headaches, dizziness, nauseas and insomnia. No data on chronic effects of the exposure to asphalt fumes on the lungs.

**Ingestion:** Exposure is not likely to occur by this route of entry under normal use of the product.

**Skin Contact:** The repeated and prolonged contact can cause irritation. If the membrane is torch-applied, the long term exposure to the asphalt fumes can cause changes of the pigmentation of the skin which can be worsened by the exposure to the sun.

**Carcinogenicity:** Due to the product form, exposure to hazardous dusts or fumes is not expected to occur. Information on carcinogenicity are given for reference only. This product is not classifiable as a carcinogen.

Asphalt: The International Agency for Research on Cancer (IARC) has concluded that this product is not classifiable as to its carcinogenicity to human beings. Epidemiological studies of roofers have generally demonstrated an excess of lung cancer in these workers. However it is unclear to what extent these cancers may be attributable to asphalt exposures during roofing operations, since in the past, roofers have been exposed to coal, tar and asbestos, which are known human lung carcinogens. Although strong epidemiological evidence exists of an association between lung cancer and working as a roofer, it is uncertain whether exposure to asphalt is related to this association. Trace amounts of polynuclear aromatic hydrocarbons (PAHs) may be present in some asphalts and can be released upon excessive heating. Some of these PAHs have been identified as having the potential to induce carcinogenic and reproductive health effects.

Crystalline Silica: Breathable crystalline silica from sand is not expected to be released, since sand is adhered to the product. Crystalline silica is considered a hazard by inhalation. The International Agency for Research on Cancer (IARC) classified crystalline silica in quartz form coming from professional exposure, carcinogenic for human beings.
Fiberglass filament: Fiberglass is not expected to be released during the use or application of the membranes. World Health Organization classifies fiberglass filaments dangerous to human beings which are smaller than 3 µm in length or in diameter. However the fiberglass filaments of the reinforcement of glassfiber reinforced type of Stoper membranes are 9 µm nominally, far over the diameter of 3 µm defined by the World Health Organization for respirable fibers.

In addition to the information given above; as to the teratogenicity, embriotoxicity, fetotoxicity, reproductive toxicity, mutagenicity, potential accumulation and toxicologically synergistic materials there is no information available.

4. First Aid Measures

Inhalation: If inhalation of mists, fumes or vapour causes irritation to the nose or throat, or coughing, remove to fresh air. If symptoms persists obtain medical advice.

Ingestion: If contamination of the mouth occurs, wash out thoroughly with water. Except as a deliberate act, the ingestion of large amounts of product is unlikely. If it should occur, DO NOT INDUCE VOMITING; obtain medical advice.

Skin: If there is presence of dust on the skin, wash gently with water and soap. In case of contact with melted product, where skin burns occur, the area should be immediately immersed in cold water until the bitumen is thoroughly cooled. Do not attempt to remove the bitumen from the skin as it provides an airtight sterile cover over the burn, which will eventually fall away with the scab as the wound heals. If, for any reason, the bitumen must be removed, this can be done using a slightly warmed medicinal liquid paraffin. Kerosene or other solvents should never be used to remove bitumen from skin or clothing.

All burns should receive medical attention. It should be noted that bitumen shrinks on cooling and where a limb is encased, care should be taken to avoid the development of a tourniquet effect.

If the skin becomes contaminated with product at ambient temperature which is more likely, wash the skin thoroughly with soap and water. Seek medical advice if irritation persists.

Eye: Cold product – Wash eye thoroughly with copious quantities of water, ensuring eyelids are held open. Obtain medical advice if any pain or redness develops or persists. Do not attempt to remove material from affected area without medical assistance.
5. Fire Fighting Measures

Flammability: N/A
Explosion data: N/A
Flash point: N/A
Auto-Ignition Temperature: N/A
Flammability levels in air (% in volume): N/A
Flash point (C.O.C): >271°C

Fire and explosion hazards: Asphalt fumes are flammable. Torches used to weld waterproofing membranes can produce temperatures beyond 1100°C. Avoid all contact with temperature sensitive materials as lead, plastic materials.

Do not work in an enclosed area where gas can accumulate. Shield air conditioning units and other protrusions on the roof with perlite panels or similar material when using the torch around them. Never use torches:
- When substrate(s) have been recently covered by solvent based products (wait until it is dry).
- Near any combustible materials
- Close to containers containing flammable liquids or materials (keep open flame at least 3m away).
- Directly on combustible substrate or insulation.

Voids, holes or gaps in substrate or located nearby can be protected as above against flame penetration. Particular precautions must be taken to keep combustible insulation away from the flame. If wood fiber panels must be installed, use fireproof panels. Avoid presence of combustible materials near open flame. At all times and especially when leaving job site, make sure that there is no smouldering or concealed fire. In that case, strictly follow the safety measures. Job planning must allow for employee presence on the roof at least one hour after torch application. Always have one ABC fire extinguisher per torch on hand, filled and in perfect working order near each torch.

Combustion products: Burning of this material will produce thick black smoke. Irritating and/or toxic gases including Hydrogen Sulphide and Sulphur Dioxide may be generated by thermal decomposition or combustion.

Fire fighting instructions: Evacuate the area. Wear self-contained breathing apparatus and appropriate protective clothing in accordance with standards. Approach fire from upwind and fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Always stay away from the containers at the time of the fire considering the high risk of explosion. Move the rolls of membrane from fire area if it can be done without risk. Cool the rolls of membrane with flooding quantities of water until well after fire is out.

Extinguishing media: Foam, CO₂ powder, sand, chemical powder.
6. Accidental Release Measures

If hot material is spilled, allow enough time to cool completely and remove to a container for disposal. Wear appropriate breathing apparatus (if applicable) and protective clothing. Notify appropriate environmental agencies. Wash spill area with soap and water. Prevent entry to waterways, sewers, basements or confined areas.

7. Handling And Storage

Stoper products must be applied by qualified applicators who have received an adequate training, for the prevention and the protection (in particular for the use of the extinguishers) against accidents caused by the combustible or flammable materials, of liquefied propane gas, open flame and their material of installation. Check the construction and the composition of the systems of roof and the walls before applying. Ensure the cleanliness of the places (debris).

Precautions for Safe Handling : Use only proper torching equipment in perfect working order certified by local standard organizations. Use only proper hoses suited for propane gas of less than 15m. Verify and tighten all the connections before the use of the equipment. Do not light the torch if a propane odour is present. Never seek a leak with a flame. Use soapy water. Use a torch whose gas output is adjustable with a stopping device. Follow the specifications, notices and documentations of the manufacturer and site authorities. The wearing of gloves, long sleeves, long trousers, safety boots, helmet and safety glasses is recommended. Do not wear synthetic fabrics. Remove clothing contaminated with solvents. Avoid skin contact. Good working practices, high standards of personal hygiene and plant cleanliness must be maintained at all times. Whilst using, do not eat, drink or smoke. In the event of any localised changes in appearance or texture of the skin being noticed, medical advice should be sought without delay.

Contact with hot product will cause burns. Ensure good ventilation and avoid, as far as reasonably practicable, the inhalation and contact with vapours, mists or fumes which may be generated during use. If such vapour, mists or fumes are generated, their concentration in the workplace air should be controlled to the lowest reasonably practicable level.

Avoid contact with eyes.

Highly toxic hydrogen sulphide gas may be emitted from hot product and accumulate in enclosed spaces or tanks. Extreme care must therefore be taken during venting of closed spaces which have, at any time contained hot product. Under no circumstances should entry be made in to small enclosures without taking full precautions.

Storage : Flashings must be stored in such a way to prevent any creasing, twisting, scratches and other damages of the roof. The materials will be protected adequately and stored permanently away from flames or welding sparks, protected from bad weather and any...
harmful substances. Store self-adhesive membranes away from the sun. Keep all membranes upright.

8. Exposure Controls/Personal Protection

**Hands**: Wear heat resistant gloves  
**Respiratory**: If the TLV for dust is exceeded, if use is performed in a poorly ventilated confined area, use an approved respirator in accordance with standards.  
**Eyes**: Wear chemical safety googles in accordance with standards.  
**Body**: Wear adequate protective clothes. Do not wear synthetic fabric.  
**Others**: Eye bath and safety shower

9. Physical and Chemical Properties

- **Physical state**: Solid  
- **Odour and appearance**: Black membrane with asphalt odour  
- **Odour Threshold**: N/A  
- **Vapour Pressure (20°C)**: N/A  
- **Vapour density (air=1)**: N/A  
- **Evaporation rate (Butyl acetate=1)**: N/A  
- **Boiling point (760 mm Hg)**: N/A  
- **Freezing point**: N/A  
- **Specific Gravity (H₂O=1)**: Variable  
- **Solubility in water**: none  
- **Volatile organic content (V.O.C.)**: N/A  
- **Viscosity**: N/A

10. Stability and Reactivity

**Chemical Stability**: This product is stable and unlikely to react in a hazardous manner under normal conditions of use.  
**Conditions of reactivity**: Avoid excessive heat.  
**Incompatibility**: Acid and strong basis and organic solvents and greasy substances  
**Hazardous polymerization**: Hazardous polymerisation reactions will not occur.

11. Toxicological Information

**Effects of short term (acute) exposure**

- **Inhalation**: No information available  
- **Eye irritation**: No information available  
- **Skin irritation**: No information available  

**Effects of long term (chronic) exposure**
Carcinogenicity :
Asphalt : Data from experimental studies in animals and cultured mammalian cells indicate that laboratory-generated roofing asphalt fume condensates are genotoxic and cause skin tumors in mice when applied dermally. The absence of data to indicate that laboratory-generated roofing asphalt fume condensates are representative of field generated fumes limits the usefulness of these data for determining the genotoxicity and potential carcinogenicity of field-generated roofing asphalt fume condensates.
Crystalline Silica : Several studies have shown an increased incidence of lung tumors in rats exposed to quartz by inhalation for up to 2 years. No increase in lung tumors was observed in female mice exposed to quartz for up to 570 days. However the ability of this study to detect carcinogenic effects was limited due to the small numbers of animals used. The international agency for research on cancer (IARC) has determined that there is sufficient evidence that quartz is carcinogenic to experimental animals.

Reproductive effects : No information available.

Teratogenicity, Embryotoxicity, Fetotoxicity : No information available.

Mutagenicity :
Crystalline Silica : Quartz did not induce micronuclei in mice in vivo. Largely positive and some negative results have been obtained in mammalian cells (including human cells) in in vivo experiments. Crystalline silica (form not specified) was not mutagenic to bacteria, with or without metabolic activation.

Synergistic materials : Tobacco smoke increases severity of the effects of silica dust on respiratory system. Simultaneous exposure to known carcinogens, for example benzopyrene can increase the carcinogenicity of crystalline silica.

12. Ecological Information

Environmental effects : Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.

Biodegradability : This product is not an environmental hazard. This product is not biodegradable, not bioaccumulative and presents no food chain concentration potential.

13. Disposal considerations

Disposal considerations : Dispose of via an authorised person / licensed waste disposal contractor in accordance with local regulations. Incineration may be carried out under controlled conditions provided that local regulations for emissions are met. Where possible, arrange for product to be recycled.
14. Transport Information

Not qualified as dangerous for transport of any type.

15. Regulatory Information

Poisons Schedule : not scheduled
Hazard category : Irritant

16. Other Information

Date of preparation or last version of MSDS : November 2008