

Section 1 - Identification of The Material and Supplier

SAMI Bitumen Technologies
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Chemical nature: Blend of bitumen, mineral filler and rubber with a small quantity of other ingredients.
Trade Name: SAMIfilla HM
Other Names: None.
Product Use: Preparation used in the spray sealing of roads.
Creation Date: September, 2006
This version issued: November, 2015

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: Not Hazardous - No criteria found.

Safety Phrases: Not Hazardous - No criteria found.

SUSMP Classification: None allocated.

ADG Classification: Class 9: Miscellaneous dangerous goods.

UN Number: 3257, ELEVATED TEMPERATURE LIQUID, N.O.S.

Note: this product is only a dangerous good when it is a heated liquid at above 100°C. At ambient temperatures, in a solid state this IS NOT A DANGEROUS GOOD.

Emergency Overview

Physical Description & Colour: At normal room temperatures, (and as supplied) this product is a black, rubbery solid. However, during use, product is heated to melting point and is a black liquid.

Odour: Odourless at normal room temperatures. However, when heated for use, has a characteristic bitumen odour.

Major Health Hazards: no significant risk factors have been found for this product at room temperatures. When heated to working temperatures, may cause severe thermal burns to skin and eyes, and mild inhalation irritation.

Potential Health Effects

Inhalation:

Short Term Exposure: Bitumen fumes may cause moderate to severe irritation of the nose, throat and respiratory tract. May cause headache, nausea, sore throat, nasal congestion, dizziness and nervousness. Confined spaces may accumulate hydrogen sulfide gas. Hydrogen sulfide may cause respiratory tract irritation, nausea, headache, dizziness, pulmonary oedema, loss of consciousness, brain damage and death.

Long Term Exposure: Prolonged exposure to bitumen fumes may cause inflammation of the lungs and mucous membranes of the nose and throat. May cause chronic bronchitis, pulmonary congestion, laryngitis, hoarseness, coughing, fatigue and atrophy and/or death of the epithelium. May aggravate existing respiratory conditions.

Skin Contact:

Short Term Exposure: Fumes from this product, when hot may cause moderate to severe irritation and the product itself will cause severe thermal burns. When cold, product may cause moderate irritation. Bitumen dust may cause irritation characterized by redness and occasional drying and peeling.

Long Term Exposure: Repeated exposure to hot bitumen or bitumen fumes may cause inflammation of the skin, acne like lesions, development of horny growths on the skin, darkening of the skin and sensitization of the skin to light. Bitumen may cause hair loss, dryness, scaling, and dermatitis. May aggravate existing skin conditions. Bitumen contains chemicals that may have a carcinogenic potential.

Eye Contact:

Short Term Exposure: This product, when hot may cause severe irritation and burns. When cold, it is unlikely to slight irritation. Bitumen dust may cause irritation characterized by burning, redness, swelling and watering.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. This product is unlikely to cause any irritation problems in the short or long term.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

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IARC: Bitumen is Class 3 - unclassifiable as to carcinogenicity to humans.
Styrene-butadiene Copolymer is Class 3 - unclassifiable as to carcinogenicity to humans.
See the IARC website for further details. A web address has not been provided as addresses frequently change.

Section 3 - Composition/Information on Ingredients

| Ingredients | CAS No | Conc, % | TWA (mg/m ³) | STEL (mg/m ³) |
|---------------------------------|-----------|---------|--------------------------|---------------------------|
| Bitumen | 8052-42-4 | >60 | 5 (fume) | not set |
| Mineral filler | | 10-30 | 10 | not set |
| Styrene-butadiene copolymer | 9003-55-8 | 10-30 | not set | not set |
| Other non hazardous ingredients | | <10 | not set | not set |

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 131 126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Contact or Poisoning: From the available evidence, this product would not usually appear to offer any significant health hazard by any exposure route. Consequently, First Aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

However, if molten material comes into contact with skin, do not attempt to remove it. Cool with cold running water until thoroughly cool. Wrap loosely with cold wet towel or bandage and take to hospital or doctor.

If processing fumes are inhaled, and adverse symptoms are experienced, move to fresh air. If patient is in discomfort or distressed or if symptoms persist more than about 15 minutes, seek medical advice.

If heated product comes into contact with eyes, seek immediate medical advice.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as a C2 combustible product. There is a slight risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and and breathing apparatus.

Flash point: >250°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: C2

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. As a minimum, wear heat resistant and insulating wear overalls, goggles and gloves. Suitable materials for protective clothing include cotton, leather, other heat resistant types. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material and allow to set. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved

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landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Although this is classed as a Dangerous Good, you may not need a license to store it. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

| SWA Exposure Limits | TWA (mg/m ³) | STEL (mg/m ³) |
|---------------------|--------------------------|---------------------------|
| Bitumen | 5 (fume) | not set |
| Mineral filler | 10 | not set |

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should never be used in enclosed spaces.

Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when skin contact is likely.

Protective Material Types: We suggest that protective clothing be made from the following materials: cotton, leather, other heat resistant types.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Section 9 - Physical and Chemical Properties:

| | |
|---|---|
| Physical Description & colour: | At normal room temperatures, these products are black, rubbery solids. However, during use, product is heated to melting point and is a black liquid. |
| Odour: | Odourless at normal room temperatures. However, when heated for use, has a characteristic bitumen odour. |
| Boiling Point: | Not available. |
| Freezing/Melting Point: | In the region of 50-95°C. |
| Volatiles: | No specific data. Expected to be low at 100°C. |
| Vapour Pressure: | No data. |
| Vapour Density: | No data. |
| Specific Gravity: | Approx 1 |
| Water Solubility: | Insoluble. |
| pH: | Not applicable. |
| Volatility: | No data. |
| Odour Threshold: | No data. |
| Evaporation Rate: | No data. |
| Coeff Oil/water Distribution: | No data. |
| Autoignition temp: | No data. |

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Containers should be kept dry. Keep containers and surrounding areas well ventilated.

Incompatibilities: No particular Incompatibilities.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

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Section 11 - Toxicological Information

Local Effects:

Target Organs: none found

Environmental monitoring of mutagenic/carcinogenic hazards associated with occupational exposure to bitumen fumes was performed during road paving operations. This may be found at http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?itool=abstractplus&db=pubmed&cmd=Retrieve&dopt=abstractplus&list_uids=3610339

Bitumen samples were collected and analysed for polycyclic aromatic hydrocarbons (PAH) content by HPLC and for mutagenicity by the Ames test. The exposure of sixteen road workers to bitumen fumes was studied. Time-weighted average values of bitumen fumes were determined by personal samplers. PAH concentration in the air and the mutagenicity of airborne particulates were also analysed. The results showed that bitumen samples contained low levels of total PAH (microgram/g) and were not mutagenic. Environmental monitoring showed a low level of exposure to bitumen fumes, which were found to contain only trace levels of PAH and not to be mutagenic. The authors suggest that these workers' exposure to mutagenic/carcinogenic agents is low.

Classification of Hazardous Ingredients

Ingredient

Risk Phrases

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

Section 12 - Ecological Information

This product is not biodegradable. However, it is insoluble and unreactive, so although it may accumulate in the soil or water, it will not cause any significant environmental impact.

Section 13 - Disposal Considerations

Disposal: There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. If neither of these options is suitable, consider controlled incineration, or landfill.

Section 14 - Transport Information

Note: this product is only a dangerous good when it is a heated liquid at above 100°C. At ambient temperatures, in a solid state this IS NOT A DANGEROUS GOOD.

ADG Code: 3257, ELEVATED TEMPERATURE LIQUID, N.O.S.

Hazchem Code: 2Y

Special Provisions: 232

Limited quantities: ADG 7 specifies a Limited Quantity value of NONE for this class of product.

Dangerous Goods Class: Class 9, Miscellaneous Dangerous Goods.

Packaging Group: III

Packaging Method: P099, IBC01

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 5.1 (Oxidising Agents where the Miscellaneous Dangerous Goods are Fire Risk Substances), 5.2 (Organic Peroxides where the Miscellaneous Dangerous Goods are Fire Risk Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 5.2 (Organic Peroxides except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 6 (Toxic Substances), 7 (Radioactive Substances), 8 (Corrosive Substances), Foodstuffs and foodstuff empties.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredient: Extracts (petroleum), residual oil solvent, (a liquid hydrocarbon) is mentioned in the SUSMP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition

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| | |
|---------------------|---|
| AICS | Australian Inventory of Chemical Substances |
| SWA | Safe Work Australia, formerly ASCC and NOHSC |
| CAS Number | Chemical Abstracts Service Registry Number |
| Hazchem Code | Emergency action code of numbers and letters that provide information to emergency services especially firefighters |
| IARC | International Agency for Research on Cancer |
| NOS | Not otherwise specified |
| NTP | National Toxicology Program (USA) |
| R-Phrase | Risk Phrase |
| SUSMP | Standard for the Uniform Scheduling of Medicines & Poisons |
| UN Number | United Nations Number |

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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