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## Pastille Sulphur

### MATERIAL SAFETY DATA SHEET

#### SECTION 1 – STATEMENT OF HAZARDOUS NATURE CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

This product is classified as:

**Not Hazardous** according to criteria of the National Occupational Health and Safety Commission and **not a Dangerous Good** according to the Australian Dangerous Goods (ADG) Code.

Emergency Telephone Number: Poisons Information Centre (Australia): 13 1126

|                      |                                             |
|----------------------|---------------------------------------------|
| <b>Substance</b>     | Pastille Sulphur                            |
| <b>Other Names</b>   | Commercially Formed Solid Elemental Sulphur |
| <b>Product Use</b>   | Fertiliser                                  |
| <b>Creation Date</b> | February 2003                               |
| <b>Revision Date</b> | June 2009                                   |

#### SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredients       | CAS No.   | Proportion (% By Weight) |
|-------------------|-----------|--------------------------|
| Sulphur           | 7704-34-9 | 50 - 100                 |
| Hydrogen Sulphide | 7783-06-4 | 0 - 0.1                  |

#### SECTION 3 – HAZARDS IDENTIFICATION

|                                                      |                                                                                                                                                                            |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Approved Criteria Classification (Calculated)</b> | Not classified                                                                                                                                                             |
| <b>SUSDP Classification</b>                          | Not classified                                                                                                                                                             |
| <b>ADG Classification</b>                            | Not regulated. Pastille sulphur is exempt from Class 4.1.                                                                                                                  |
| <b>UN Number</b>                                     | Not regulated                                                                                                                                                              |
| <b>Emergency Overview</b>                            |                                                                                                                                                                            |
| <b>Colour</b>                                        | Bright yellow when 99.9 % pure. Colour very sensitive to impurities. Slight contamination can result in brown to black colour.                                             |
| <b>Physical Description</b>                          | Solid, generally spherical particles.                                                                                                                                      |
| <b>Odour</b>                                         | Odourless when pure but dust may generate slightly acidic odour/taste sensation. Odours when present are usually due to released hydrogen sulphide residues or impurities. |
| <b>Major Health Hazards</b>                          | Irritant                                                                                                                                                                   |

| <b>Potential Health Effects</b> |                                                                                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation:</b>              |                                                                                                                                                                            |
| <b>Short Term Exposure</b>      | Dust can irritate respiratory tract in concentrations greater than 5 mg/m <sup>3</sup> . Irritation of nose, throat and digestive tract, coughing and shortness of breath. |
| <b>Long Term Exposure</b>       | Prolonged and repeated inhalation of dust may cause lung damage such as bronchitis, emphysema, bronchiectosis and asthma.                                                  |
| <b>Skin Contact:</b>            |                                                                                                                                                                            |
| <b>Short Term Exposure</b>      | Irritant. May cause redness, burning and skin damage. Absorption may occur through fine particulates lodging in skin crevices and slowly assimilating.                     |
| <b>Long Term Exposure</b>       | Prolonged or repeated skin exposures to the dust may cause a persistent irritation and dermatitis.                                                                         |
| <b>Eye Contact:</b>             |                                                                                                                                                                            |
| <b>Short Term Exposure</b>      | Dust may cause irritation, discomfort and possible acidic damage. Can also cause temporary stinging, redness, blurring of vision due to watering and conjunctivitis.       |
| <b>Long Term Exposure</b>       | No data given.                                                                                                                                                             |
| <b>Ingestion:</b>               |                                                                                                                                                                            |
| <b>Short Term Exposure</b>      | May result in vomiting, diarrhea and irritation of digestive tract.                                                                                                        |
| <b>Long Term Exposure</b>       | No data given.                                                                                                                                                             |
| <b>Carcinogen Status</b>        |                                                                                                                                                                            |
| <b>NOHSC</b>                    | Not classified.                                                                                                                                                            |
| <b>NTP</b>                      | Not classified.                                                                                                                                                            |
| <b>IARC</b>                     | Not classified.                                                                                                                                                            |

| <b>SECTION 4 – FIRST AID MEASURES</b> |                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scheduled Poisons</b>              | Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons. Phone: Australia 13 1126.                                                                                                                                                                                                |
| <b>Inhalation</b>                     | If respiratory symptoms develop, move casualty away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If casualty is not breathing, begin artificial respiration immediately. If breathing difficulties develop, qualified personnel should administer oxygen. Seek immediate medical attention. |
| <b>Skin Contact</b>                   | Remove contaminated clothing and wash the affected area with soap and water. If irritation or redness develops, seek medical attention. Launder contaminated clothing before reuse.                                                                                                                                                     |
| <b>Eye Contact</b>                    | If irritation or redness develops, move casualty away from exposure and into fresh air. Flush with copious amounts of clean low-pressure water, ensuring eyelids are held open for at least 15 minutes. If symptoms persist, seek medical attention.                                                                                    |
| <b>Ingestion</b>                      | If symptoms develop, seek medical attention. Do not induce vomiting. If vomiting occurs, maintain open airway and prevent aspiration.                                                                                                                                                                                                   |

| <b>SECTION 5 – FIRE FIGHTING MEASURES</b>     |                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire and Explosion Hazards</b>             | Dust can form explosive mixtures with air. Can become molten and flow in a fire situation, which may give off flammable vapours creating an explosion hazard.                                                                                                                                                                             |
| <b>Extinguishing Media</b>                    | Water fog, foam, dry powder, carbon dioxide.                                                                                                                                                                                                                                                                                              |
| <b>Fire Fighting</b>                          | Use water spray to cool fire exposed surfaces and to protect personnel. Avoid spraying water directly into storage containers due to danger of boiling over. Remove all unauthorised personnel from area. Fire fighting personnel should wear appropriate protective equipment including fire retardant clothing and breathing apparatus. |
| <b>Flash Point</b>                            | > 180 °C as dust.                                                                                                                                                                                                                                                                                                                         |
| <b>Flammable Limits<br/>(% Volume in Air)</b> | Lower 3.3<br>Upper 46                                                                                                                                                                                                                                                                                                                     |

| <b>SECTION 6 – ACCIDENTAL RELEASE MEASURES</b> |                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Occupational Release</b>                    | Eliminate source of ignition. Prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewer, water courses or low areas. Contain spilled liquid with sand or earth. Avoid crushing and dust generation. Use dry clean-up procedures and place material in suitable containers for recycling or disposal. |

| <b>SECTION 7 – HANDLING AND STORAGE</b> |                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b>                         | Avoid all personal contact. Avoid generating dusts. Use with adequate ventilation.                                                                                                                                                                                                                                           |
| <b>Storage</b>                          | Store in a cool place out of direct sunlight. Store away from sources of heat and ignition. Store in a well ventilated area away from oxidising agents including chlorates, nitrates, perchlorates and permanganates. Keep containers closed at all times. Containers must be labelled in accordance with local regulations. |

| <b>SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION</b> |                                                                                                                                                                                                  |                                |                                |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|
| <b>Exposure Limits (NOHSC)</b>                               | <b>Ingredient</b>                                                                                                                                                                                | <b>TWA</b>                     | <b>STEL</b>                    |
|                                                              | Hydrogen Sulphide                                                                                                                                                                                | 10 ppm<br>14 mg/m <sup>3</sup> | 15 ppm<br>21 mg/m <sup>3</sup> |
| <b>Ventilation</b>                                           | Use with adequate ventilation.                                                                                                                                                                   |                                |                                |
| <b>Eye Protection</b>                                        | Chemical goggles or safety glasses with side shields to protect against dust. It is advised that persons do not wear contact lenses while handling this product as they may absorb the material. |                                |                                |
| <b>Skin Protection</b>                                       | Impervious protective clothing including gloves.                                                                                                                                                 |                                |                                |
| <b>Protective Material Types</b>                             | PVC or nitrile rubber.                                                                                                                                                                           |                                |                                |
| <b>Respirator</b>                                            | Dust mask recommended where exposure to dust may occur. If dust is likely to be generated, use a suitably approved respirator to protect against the inhalation of dust particles.               |                                |                                |

| <b>SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES</b> |                                                                                                                                |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Physical State</b>                               | Solid                                                                                                                          |
| <b>Colour</b>                                       | Bright yellow when 99.9 % pure. Colour very sensitive to impurities. Slight contamination can result in brown to black colour. |
| <b>Boiling Point</b>                                | 444 °C                                                                                                                         |
| <b>Melting Point</b>                                | 112 – 119 °C depending on purity and molecular/crystallographic form (changes with age).                                       |
| <b>Vapour Pressure (@ 184 °C)</b>                   | 0.133 kPa                                                                                                                      |
| <b>Evaporation</b>                                  | Negligible under atmospheric conditions.                                                                                       |
| <b>Specific Gravity (@ 20 °C)</b>                   | 1.04 – 1.44 g/cm <sup>3</sup>                                                                                                  |
| <b>Solubility in Water</b>                          | Insoluble but dust fines can form milky stable suspension in water.                                                            |

| <b>SECTION 10 – STABILITY AND REACTIVITY</b> |                                                                                     |
|----------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Reactivity</b>                            | Stable                                                                              |
| <b>Conditions to Avoid</b>                   | High temperatures                                                                   |
| <b>Materials to Avoid</b>                    | Strong oxidising agents such as chlorates, nitrates, perchlorates or permanganates. |
| <b>Hazardous Decomposition</b>               | Hydrogen sulphide and sulphur oxides.                                               |
| <b>Hazardous Polymerisation</b>              | Will not occur.                                                                     |

| <b>SECTION 11 – TOXICOLOGICAL INFORMATION</b>  |                                                                                                                                 |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Classification of Hazardous Ingredients</b> |                                                                                                                                 |
| <b>Ingredients</b>                             | <b>R Phrases</b>                                                                                                                |
| <b>Hydrogen Sulphide</b>                       | R12, R26, R50                                                                                                                   |
| <b>Individual Ingredient Information</b>       |                                                                                                                                 |
| <b>Sulphur</b>                                 |                                                                                                                                 |
| <b>Irritation Data</b>                         | 8 ppm eye human                                                                                                                 |
| <b>Toxicity Data</b>                           | LD rat oral: > 8 437 mg/kg<br>LDLo rabbit oral: 175 mg/kg<br>LC50 mammal – spp. unspecified inhalation: 1 660 mg/m <sup>3</sup> |
| <b>Hydrogen Sulphide</b>                       |                                                                                                                                 |
| <b>Toxicity Data</b>                           | LC50 mouse inhalation: 634 ppm/1 hr<br>LC50 rat inhalation: 444 ppm                                                             |
| <b>Target Organs</b>                           | Eyes, respiratory system, central nervous system.                                                                               |
| <b>Reproductive Data</b>                       | TCLo: rat inhalation: 20 ppm (6 – 22 D preg/21 D after birth)                                                                   |
| <b>Target Organs</b>                           | Eyes, skin, respiratory system and central nervous system.                                                                      |

| <b>SECTION 12 – ECOLOGICAL INFORMATION</b> |                                                                                                       |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------|
|                                            | Reactions with the environment minimal if kept dry and cool. No potential for bioaccumulation exists. |

**SECTION 13 – DISPOSAL CONSIDERATIONS**

|  |                                                                                                                                                                                                                                                  |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Suitable for processing by an approved recycling facility or can be disposed of at any licensed waste disposal site subject to compliance with applicable laws and regulations and consideration of product characteristics at time of disposal. |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**SECTION 14 – TRANSPORT INFORMATION**

|                                |                                                           |
|--------------------------------|-----------------------------------------------------------|
| <b>ADG Code</b>                | Not regulated. Pastille sulphur is exempt from Class 4.1. |
| <b>HAZCHEM Code</b>            | Not regulated                                             |
| <b>Subsidiary Risk</b>         | Not regulated                                             |
| <b>Packaging Group</b>         | Not regulated                                             |
| <b>Packaging Method</b>        | Not regulated                                             |
| <b>UN Proper Shipping Name</b> | Not regulated                                             |
| <b>UN Number</b>               | 1350                                                      |

**SECTION 15 – REGULATORY INFORMATION**

|             |                                  |
|-------------|----------------------------------|
| <b>AICS</b> | All ingredients present on AICS. |
|-------------|----------------------------------|

**SECTION 16 – OTHER INFORMATION**

|                 |                           |                                                                                               |
|-----------------|---------------------------|-----------------------------------------------------------------------------------------------|
| <b>Acronyms</b> | <b>SUSDP</b>              | Standard for the Uniform Scheduling of Drugs and Poisons                                      |
|                 | <b>ADG Code</b>           | Australian Code for the Transport of Dangerous Goods by Road and Rail                         |
|                 | <b>CAS Number</b>         | Chemical Abstracts Service Registry Number                                                    |
|                 | <b>UN Number</b>          | United Nations Number                                                                         |
|                 | <b>R-Phrases</b>          | Risk Phrases                                                                                  |
|                 | <b>HAZCHEM</b>            | An emergency action code of numbers and letters which gives information to emergency services |
|                 | <b>NOHSC</b>              | National Occupational Health and Safety Commission                                            |
|                 | <b>NTP</b>                | National Toxicology Program (USA)                                                             |
|                 | <b>IARC</b>               | International Agency for Research on Cancer                                                   |
|                 | <b>AICS</b>               | Australian Inventory of Chemical Substances                                                   |
|                 | <b>TWA</b>                | Time Weighted Average                                                                         |
| <b>STEL</b>     | Short Term Exposure Limit |                                                                                               |