1. Identification of the product and Company Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PANEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufactured/ supplied by</td>
<td>BME A division of the Omnia Group (Pty) Ltd P.O. Box 70040 Bryanston South Africa 2021 Tel: 27 11 7098791 Fax:27 11 4633023</td>
</tr>
</tbody>
</table>

**Product use:** Underground and surface blasting operations

**Synonyms:** ANFO

**Chemical Formula:** Not applicable

**Emergency telephone number:** +27 11 706-3398

2. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/preparation: Preparation</th>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substance/preparation:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chemical name</strong></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
</tr>
<tr>
<td>Ammonium Nitrate</td>
<td></td>
</tr>
<tr>
<td>Fuel additive</td>
<td></td>
</tr>
</tbody>
</table>

**CAS No**: 6484-52-2

**%**:
- > 90
- < 10

**EC Number**: 229-347-8

**Classification**:
- O; R8
- Xi; R36/38
- Carc. Cat. 3; R40

*See Section 16 for the full text of the R Phrases declared above*

3. Hazards identification

This substance is classified as dangerous according to Directive 1999/45/EC and its amendments

**Classification**:
- E; R2,
- O; R8,
- Carc. Cat. 3; R40
- Xi; R36/38

**Additional hazards**: None identified

**Effects and symptoms**: Hazardous in case of skin contact (irritant), in case of eye contact (irritant) of inhalation

**Aggravating conditions**: Repeated or continues exposure to any toxic substance may produce general deterioration of health by accumulation in human organs

See toxicological information (section 11)

4. First aid measures

**First aid measures**

**Inhalation**: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention. No additional remark

**Ingestion**: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear

**Skin contact**: Incase of skin contact - immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention

**Eye contact**: Check for and remove any contact lenses. In case of contact immediately flush eyes with plenty of water for at least 20 minutes. Cold water may be used. Get medical attention.

**Note to physician**: No specific treatment, treat symptomatically.

**Protection of first-aiders**: No additional remark
5. Fire-fighting measures

Extinguishing media
Suitable: DO NOT fight fire when it reaches material
Not suitable: No additional remark

Unusual fire/explosion hazards
Explodes when heated

Hazardous thermal decomposition products
Hazardous gases will result from fire or detonation (nitrogen oxides and carbon oxide).

Special fire fighting procedures
When fighting fire before explosives are involved, fire fighters should wear positive pressure self contained breathing apparatus (SCBA) and full turnout gear. Fire fighters’ protective clothing will provide limited protection. DO NOT ATTEMPT TO FIGHT FIRE WHEN IT REACHES EXPLOSIVES. Fire should be allowed to burn out – withdraw all personnel from the vicinity of the incident (out of line of sight and away from windows or glass panels).

Protection of fire fighters
Use an approved/certified respirator or equipment

6. Accidental release measures

Personal precautions
Do not touch spilled material or damaged vessels or containers. Evacuate surrounding areas

Environmental precautions
Dispose waste using a professional registered waste disposal company.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

7. Handling and storage

Handling
Keep locked away. Do not expose to sources of ignition, such as electrostatic discharge. Avoid contact with incompatible materials such as reducing agents and combustible materials. Suitable protective clothing should be worn. Avoid contact with skin and eyes and do not ingest and avoid inhaling dust. In case of ingestion seek medical advice. Wear suitable respiratory equipment in case of insufficient ventilation.

Storage
Storage must be in accordance with relevant explosive legislation. Keep separate from all organic materials, chemical sulphur, flammable liquids, chlorates, permanganates, finely divided metals, charcoals, coke, cork or sawdust.

Packaging materials
Recommended use: Store in original packaging
Not suitable: No additional remark

8. Exposure controls/personal protection

Engineering measures
Ensure sufficient ventilation, to remove dust and fumes and avoid electrostatic discharge

Hygiene measures
Wash hands after handling compounds and before eating, smoking, using ablution facilities and at the end of the day.

Occupational exposure limits:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>No additional information</td>
</tr>
</tbody>
</table>

Recommended monitoring procedures
No additional information

Personal protective equipment
Respiratory system: Approved or certified dust respirator
Skin and body: Overalls recommended
Hands: Gloves
Eyes: Safety glasses with side shields recommended

9. Physical and chemical properties

Physical state: Free flowing 2 to 3 mm diameter spherical granules
Colour: White / of white / pink / reddish-grey colour
Odour: Slight smell of hydrocarbon fuel
Odour threshold: Not available
Boiling point: Decomposition temperature approximately 240 °C
Melting point: Approximately 170 °C
Flash point: Not applicable
Flammability: Non-Flammable
Density: 0.85 – 1.08 g/ml
Vapor Density: Not available
Vapour pressure: Not available
Evaporation rate: Not available
Solubility - Water: Completely soluble
Solubility – Solvent: Water
Solubility - Coefficient: Not available
pH: Not available
Explosive properties: Explosive in presence of open flame, sparks or static discharge and heat.
Fire hazards in presence of various substances: Not applicable
Auto-ignition temperature: Not available (May explode at temperatures > 100 degrees C)
Viscosity: Not available
Neurotoxicity: Not available

10. Stability and reactivity
Stability: The product is stable
Conditions to avoid: IMPACT, HIGH TEMPERATURE, SPARKS AND SOURCES OF IGNITION MAY CAUSE EXPLOSION. May react with reducers and combustible materials
Hazardous decomposition product: Hazardous gases will result from fire or detonation (nitrogen oxides and carbon oxide).
Hazardous polymerisation: Will not occur
Incompatible materials: Keep separate from all organic materials, chemical sulphur, flammable liquids, chlorates, permanganates, finely divided metals, charcoals, detonators and all aerosols, coke, cork or sawdust

11. Toxicological information
Eyes: Hazardous in case of contact with eyes – irritant
Skin: Hazardous in case of contact with skin – irritant
Inhalation: Inhalation of dusts will produce irritation to respiratory track
Ingestion: Ingestion will produce irritation to gastro-intestinal tract
Target organs: Blood
Acute toxicity: None known
Carcinogenic: None known
Mutagenicity: None known
Reproductive hazards: None known

12. Ecological information
Mobility: No data available
Soil/water partition coefficient: No data available
Persistence/degradability: Biodegradable
Bio accumulative potential: Not expected

13. Disposal considerations
Methods of disposal: Disposal should be in accordance with the current applicable explosive legislation. Do not flush into natural water systems.
Packing must be disposed of by burning, as per applicable explosive regulations
Waste classification: Hazardous chemical waste

14. Transport information
Transport Regulations

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN Number</th>
<th>Name and description</th>
<th>Class</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID Class</td>
<td>0082</td>
<td>EXPLOSIVE, BLASTING, TYPE B</td>
<td>1.1D</td>
<td>Limited quantity LQ0 CEFIC Tremcard</td>
</tr>
<tr>
<td>ADN Class</td>
<td>0082</td>
<td>EXPLOSIVE, BLASTING, TYPE B</td>
<td>1.1D</td>
<td></td>
</tr>
<tr>
<td>IMDG Class</td>
<td>0082</td>
<td>EXPLOSIVE, BLASTING, TYPE B</td>
<td>1.1D</td>
<td>Emergency schedules (EMS) F-B, S-X Remarks Packaging instructions: P131</td>
</tr>
<tr>
<td>IATA-DGR Class</td>
<td>0082</td>
<td>EXPLOSIVE, BLASTING, TYPE B</td>
<td>1.1D</td>
<td>AIR: Product may not be transported by Air. RAIL: Applicable Hazchem and specific requirements of the relevant transport authority. Both Rail and Road must comply with: Hazardous Substance Act No 15 of 1973 and the OHSAct specifically the Regulations for Hazardous Chemical Substances SEA: As per UN recommendation and the International Maritime Code.</td>
</tr>
</tbody>
</table>
15. Regulatory Information

EU Regulation
Hazard symbols:

Risk phrases:
- R2 – Risk of explosion by shock, friction, fire or other source of ignition
- R40 – Limited evidence of a carcinogenic effect
- R8 – Contact with combustible material may cause fire
- R22 – Harmful if swallowed
- R36/38 – Irritating to eyes and skin

Safety phrases:
- S34 – Avoid shock and friction
- S16 – Keep away from sources of ignition
- S24/25 – Avoid contact with skin and eyes

Product use:
Classification and labeling have been performed according to EU directives 67/548/EEC, 1999/45/EC including amendments and the intended use.

16. Other information

Full text of R-Phrases with no:

<table>
<thead>
<tr>
<th>R2</th>
<th>Risk of explosion by shock, friction, fire or other source of ignition</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3</td>
<td>Extreme risk of explosion by shock, friction, fire or other sources of ignition</td>
</tr>
<tr>
<td>R5</td>
<td>Heating may cause an explosion</td>
</tr>
<tr>
<td>R8</td>
<td>Contact with combustible material may cause fire</td>
</tr>
<tr>
<td>R9</td>
<td>Explosive when mixed with combustible material</td>
</tr>
<tr>
<td>R10</td>
<td>Flammable</td>
</tr>
<tr>
<td>S15</td>
<td>Keep away from heat</td>
</tr>
<tr>
<td>S17</td>
<td>Keep away from combustibles</td>
</tr>
<tr>
<td>R61</td>
<td>May cause harm to the unborn child</td>
</tr>
<tr>
<td>R62</td>
<td>Possible risk of impaired fertility</td>
</tr>
<tr>
<td>R20/22</td>
<td>Harmful by inhalation and if swallowed</td>
</tr>
<tr>
<td>R22</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>R36/38</td>
<td>Irritating to eyes and skin</td>
</tr>
<tr>
<td>R33</td>
<td>Danger of cumulative effects</td>
</tr>
<tr>
<td>R40</td>
<td>Limited evidence of carcinogenic effect</td>
</tr>
<tr>
<td>R50/53</td>
<td>Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment</td>
</tr>
</tbody>
</table>

Text of classifications:
Appearing in Section 2

- E – Explosives
- O – Oxidising
- F – Highly flammable
- Repr. Cat. 1 – Toxic for reproduction Category 1
- Repr. Cat. 3 – Toxic for reproduction Category 3
- Xn – Harmful
- Xi – Irritant
- N – Dangerous for the environment

History

Date of printing: 02/03/2015
Date of issue: 02/03/2015
Date of previous issue: 06/03/2013
Recommended by: D Voogt – production manager
Authorised by: D Mynhardt – production and technical director

Remarks

This MSDS summarizes, at the date of issue, our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle the product in the workplace. As BME cannot control the use and handling of the product, each user must review the MSDS in the context of how the user intends to handle and use the product in the workplace.

Printed Date: Monday, 02 March 2015.

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