# MATERIAL SAFETY DATA SHEET (MSDS)
## TRIMETHYL BORATE AZEO

**DATE:** July 2013  
**Version:** 2  
**Ref. No.:** MS107

### 1 PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th><strong>Product Name</strong></th>
<th>Trimethyl Borate Azeo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical Formula</strong></td>
<td>B(OCH$_3$)$_3$/CH$_3$OH</td>
</tr>
<tr>
<td><strong>Trade Names</strong></td>
<td>GASFLUX M1T</td>
</tr>
<tr>
<td><strong>Company Identification</strong></td>
<td>African Oxygen Limited</td>
</tr>
</tbody>
</table>
|                      | 23 Webber Street, Johannesburg, 2001 Tel No: (011) 490-0400  
|                      | Fax No: (011) 490-0506          |

**EMERGENCY NUMBER** 0860 020202 or +27 (0)11 821 3000 (24 hours)

### 2 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th><strong>Chemical Name</strong></th>
<th><strong>CAS No.</strong></th>
<th><strong>%</strong></th>
<th><strong>CE No.</strong></th>
<th><strong>Symbol</strong></th>
<th><strong>R-Phrases</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethyl borate</td>
<td>121-43-7</td>
<td>53%</td>
<td>005-005-00-1</td>
<td>F, Xn</td>
<td>R11-21</td>
</tr>
<tr>
<td>Methanol; Methyl alcohol</td>
<td>67-56-1</td>
<td>22%</td>
<td>603-001-00-X</td>
<td>F, T</td>
<td>R11-23/24/25-39/23/24/25</td>
</tr>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>25%</td>
<td>606-001-00-8</td>
<td>F</td>
<td>R11</td>
</tr>
</tbody>
</table>

### 3 HAZARDS IDENTIFICATION

**Physical/Chemical Hazards**  
Highly flammable - May form flammable/explosive vapour-air mixture.

**Environmental Hazards**  
Not available.

**Human Health Hazards**  
Toxic by inhalation and if swallowed, irritating to eyes and skin & May be irritating to the respiratory system.

### 4 FIRST AID MEASURES

**EFFECTS & SYMPTOMS**

**Skin Contact**  
Irritating to skin. Prolonged/repeated skin contact result in dermatitis.

**Eye Contact**  
Irritating to eyes. May cause irreversible damage to eyes.

**Ingestion**  
Toxic if swallowed. May be irritating to mouth and throat. Exposure to high concentrations may result in vomiting, dizziness, nausea. May cause damage to central nervous system, may result in impaired vision/ blindness.

**Inhalation**  
May be irritating to nose/eyes. Exposure to high concentrations may result in dizziness, headache, nausea, gastrointestinal disorders.

**FIRST AID MEASURES**

**Skin Contact**  
Remove contaminated clothing. Wash off with plenty of water and soap. Immediately get medical attention.

**Eye Contact**  
Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Immediately get medical attention.

**Ingestion**  
Do not induce vomiting. Wash out mouth with water. Immediately get medical attention.

**Inhalation**  
Remove victim to fresh air. Keep victim at rest. Get medical attention.

### 5 FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**  
CO$_2$, dry chemical, alcohol-resistant foam, water spray.

**Special Fire Fighting Procedures**  
Keep container cool by spraying with water.

**Unusual Fire/Explosion Hazards**  
As vapours are heavier than air, they can travel back to sources of ignition hazards and flash back.

**Hazardous Thermal (de)composition products**  
Burning may produce: Irritating and toxic fumes.

**Protection of fire-fighters**  
Full protective clothing. Self-contained breathing apparatus.

### 6 ACCIDENTAL RELEASE MEASURES

**Personal Precautions**  
Use appropriate protection (see section 8). Keep away from sources of ignition - NO SMOKING.

**Environmental Precautions**  
Do not allow to enter sewerage system and other bodies of water.

**Methods for Cleaning Up**  
Seal leak if possible without risk. Absorb in sand or other inert material. Collect spilled material in sealable containers. Forward for disposal.

### 7 HANDLING AND STORAGE

**Handling**  
Do not breathe vapour. Keep away from sources of ignition - NO SMOKING. Avoid contact with skin and eyes.

**Storage**  
Keep container tightly closed in a cool, well-ventilated place. Keep away from sources of ignition, heat and direct sunlight.

**Packaging Materials**  
Keep in steel containers / plastic containers.

### 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Control Measures**  
Local exhaust recommended. Explosion protected electrical equipment.

**Hygienic Measures**  
When using do not eat, drink or smoke. Wash hands after working with the substance.

**Occupational Exposure Limits**

**CHEMICAL NAME:** TRIMETHYL BORATE  
**TLV (U.S.A.):** Not established.  
**VLE/VME (France):** Not established.  
**MAC (Netherlands):** Not established.  
**OEL (U.K):** Not established.

**CHEMICAL NAME:** METHANOL  
**TLV (U.S.A.):** TWA: 262 mg/m$^3$ (200ppm); STEL: 328 mg/m$^3$ (250ppm)  
**VLE/VME (France):** TWA: 260mg/m$^3$ (200ppm); STEL: 1300mg/m$^3$ (1000ppm)  
**MAC (Germany):** TWA: 280 mg/m$^3$ (200ppm)  
**MAC (Netherlands):** TWA: 260 mg/m$^3$ (200ppm); STEL: 310mg/m$^3$ (250ppm)  
**OEL (U.K):** TWA: 260 mg/m$^3$ (200ppm); STEL: 310mg/m$^3$ (250ppm)

**OTHER OCCUPATIONAL EXPOSURE LIMITS**

<table>
<thead>
<tr>
<th>Country</th>
<th>TWA: 260 mg/m$^3$ (200ppm)</th>
<th>STEL: 350 mg/m$^3$ (250ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Sweden</td>
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<td>[ ]</td>
</tr>
<tr>
<td>Finland</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Belgium</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Switzerland</td>
<td>[ ]</td>
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</tr>
</tbody>
</table>

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**Version 2**  
**Ref. No.: MS107**

**Personal Protection**

**RESPIRATORY SYSTEM**
In case of insufficient ventilation, wear suitable respiratory equipment (Air purifying respirator with organic vapour cartridge).

**SKIN AND BODY**
Impervious clothing

**HANDS**
Rubber gloves or neoprene gloves

**EYES**
Safety goggles or face shield

9 **PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL DATA**

- **Physical State:** Liquid
- **Colour:** Water-white
- **Odour:** Alcohol-like
- **Boiling Point:** 53-58°C
- **Melting Point:** Not applicable
- **Specific Gravity \([H2O=1]\):** 0.865
- **pH:** Not applicable
- **Solubility in water:** Miscible (reacts with water)
- **Vapour Pressure (Air=1):** env.990mbar (68°)
- **Vapour Density (Air=1):** > 1 (Methanol)
- **Flash point:** 12°C (methanol)
- **Auto-ignition Temperature:** 170°C (Methanol)
- **Lower Explosion Limit:** 5.5 volume % (Methanol)
- **Upper Explosion Limit:** 36.5 volume % (Methanol)

10 **STABILITY AND REACTIVITY**

**Stability**
Safe under normal conditions

**Conditions to avoid**
Keep away from: sources of ignition, heat and direct sunlight

**Materials to avoid**
Keep away from: oxidizing agents, water, moisture, etc.

**Hazardous Decomposition Products**
 Burning may produce: Irritating and toxic fumes

11 **TOXICOLOGICAL INFORMATION**

**No toxicological information is known on the product**

**Chemical Name:** Trimethyl borate azeo - Contains: Methanol and Acetone

**Acute Toxicity**
- **Oral:** LD\(_{50}\) (rat): 6140 mg/kg\(^1\)
- **Dermal:** LD\(_{50}\) (rabbit): 1980 mg/kg\(^1\)
- **Eye Irritation:** Moderately irritating to eyes (man)

**Chemical Name:** Methanol

**Acute Toxicity**
- **Oral:** LD\(_{50}\) (rat): 5628 mg/kg\(^1\)
- **Dermal:** LD\(_{50}\) (rabbit): 15800 mg/kg\(^1\)
- **Inhalation:** LD\(_{50}\) (rat 4 hours): 6400 p.p.m

**Skin Irritation**
Moderately irritating to skin (rabbit: 20 mg/24 hours)

**Eye Irritation**
Moderately irritating to eyes (rabbit: 100 mg/24 hours)

**Other Information**
Ingestion / Exposure to airborne concentrations above the occupational exposure limit may cause irreversible damage to eyes (e.g. blindness)

**12 ECOLOGICAL INFORMATION**

As far as known no threat is posed to environment by this material.

**13 DISPOSAL CONSIDERATIONS**

**Methods of Disposal**
Disposal according to the local legislation. Combustion in an incinerator for chemical waste.

**14 TRANSPORT INFORMATION**

**ROAD TRANSPORTATION**

- **Shipping Name:** FLAMMABLE LIQUID, TOXIC, N.O.S.
- **UN Number:** 1992
- **Packing Group:** II
- **Label:** SOLIDE INFLAMMABLE / TOXIQUE
- **ADR Class:** 3,19 B
- **CEFIC TREM Card No:** 30G32
- **Hazard Identification No:** 336
- **IMO Class:** 3.2
- **IMO Pag:** 3230
- **EMS No:** 3-07
- **MFAG No:** SUB.4.2
- **Maine Pollutant:** Not a Marine Pollutant
- **IATA Class:** 3

**15 REGULATORY INFORMATION**

**EC Regulations/EC Classification**

**Label Name:**
Trimethyl borate azeo - Contains: Methanol and Acetone

**Hazard Symbol:** F, XN

<table>
<thead>
<tr>
<th>Risk Phrase</th>
<th>Description</th>
<th>Safety Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11</td>
<td>Highly Flammable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R21</td>
<td>Harmful in contact with skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R39/23/24/25</td>
<td>Toxic, danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S23</td>
<td>Do not breath spray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S28</td>
<td>After contact with skin, wash immediately with plenty of water and soap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S36/37</td>
<td>Wear appropriated protective clothes and goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S45</td>
<td>In case of accident or sickness, see immediately a doctor (if possible show him the label)</td>
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<td></td>
</tr>
</tbody>
</table>

**National legislation:** None

Refer to SABS 0265 for explanation of the above.

**16 OTHER INFORMATION**

**Bibliography**
SABS 0265 - Labelling of Dangerous Substances

**17 EXCLUSION OF LIABILITY**

Information contained in this publication is accurate at the date of publication. The company does not accept liability arising from the use of this information, or the use, application, adaptation or process of any products described herein.

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