Non-hazardous material safety data sheet for

FireCarb

This generic SDS is provided by LKAB Minerals to give information to assist with material handling of the products listed which are not classified as hazardous under the GHS and / or the CLP regulations.

SECTION 1: Identification of the substance/mixture of the company/undertaking

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>FireCarb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms / trade names</td>
<td>TEG, expandable graphite</td>
</tr>
<tr>
<td>REACH registration number</td>
<td>01-2119514421-54</td>
</tr>
<tr>
<td>CAS No</td>
<td>12777-87-6</td>
</tr>
<tr>
<td>EC No</td>
<td>235-819-4</td>
</tr>
</tbody>
</table>

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Intumescent

1.3 Details of the supplier of the safety data sheet

LKAB Minerals Ltd, Raynesway, Derby DE21 7BE UK

minerals.sds@lkab.com

1.4 Emergency telephone number of supplier

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>LKAB Minerals AB (Sweden)</td>
<td>+46 771 760 400</td>
</tr>
<tr>
<td>LKAB Minerals Asia Pacific Ltd (Hong Kong)</td>
<td>+852 2827 3000</td>
</tr>
<tr>
<td>LKAB Minerals BV (Netherlands)</td>
<td>+31 168 388500</td>
</tr>
<tr>
<td>LKAB Minerals Inc (USA)</td>
<td>+1 513 322 5530</td>
</tr>
<tr>
<td>LKAB Minerals GmbH (Germany)</td>
<td>+49 201 45060</td>
</tr>
<tr>
<td>LKAB Minerals Ltd (United Kingdom)</td>
<td>+44 1724 277411 or +44 1332 673131</td>
</tr>
<tr>
<td>LKAB Minerals Oy (Finland)</td>
<td>+358 17 2680160</td>
</tr>
<tr>
<td>LKAB Minerals Tianjin (China)</td>
<td>+86 22 2435 1706</td>
</tr>
</tbody>
</table>

Hours of operation: 09.00 – 16.00 (local business hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (EC 1272/2008):

| Physical and chemical hazards | not classified |
| Human health | not classified |
| Environment | not classified |

The full text for all R-phrases and hazard statements are displayed in section 16.

2.2 Label elements

| EC No | 235-819-4 |

Label in accordance with (EC) No. 1272/2008 No pictogram required.

2.3 Other hazards

This product does not contain any PBT or vPvB substances.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Product / ingredient name</th>
<th>%</th>
<th>CAS No</th>
<th>EC No</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>95</td>
<td>12777-87-6</td>
<td>235-819-4</td>
<td>Not classified</td>
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<tr>
<td>Crystalline graphite, intercalated</td>
<td></td>
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</tr>
</tbody>
</table>

The full text for all R phrases and hazard statements are displayed in section 16.

REACH Registration number: 01-2119514421-54
SECTION 4: First aid measures

4.1 Description of first aid measures
   Inhalation: Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
   Ingestion: Rinse mouth thoroughly. Get medical attention if any discomfort continues.
   Skin contact: Wash skin with soap and water. Get medical attention if irritation persists after washing.
   Eye contact: Make sure to remove any contact lenses from the eyes before rinsing. Rinse eye with water immediately. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed
   Inhalation: No specific symptoms noted.
   Ingestion: No specific symptoms noted.
   Skin contact: No specific symptoms noted.
   Eye contact: No specific symptoms noted.

4.3 Indication of any immediate medical attention and special treatment needed
   Treat symptomatically

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
   This product is not flammable. Use fire extinguishing media appropriate for surrounding materials.

5.2 Special hazards arising from the substance or mixture
   Hazardous combustion products: None under normal conditions

5.3 Advice for firefighters
   Special fire-fighting procedures: No specific fire-fighting procedures given

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   Follow precautions for safe handling described in this safety data sheet

6.2 Environmental precautions
   The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

6.3 Methods and material for containment and cleaning up
   Avoid dust formation. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Transfer to a container for disposal.

6.4 Reference to other sections
   For personal protection see section 8. For waste disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
   Avoid handling which leads to dust formation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimise the risk of inhalation of dust.

7.2 Conditions for safe storage, including any incompatibilities
   Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

7.3 Specific end use(s)
   The identified uses for this product are detailed in section 1.2
### 8.1 Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>STD</th>
<th>TWA - 8Hrs</th>
<th>STEL - 15Min</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Graphite</td>
<td></td>
<td>5.0 mg/m³</td>
<td>10.0 mg/m³</td>
<td>A</td>
</tr>
<tr>
<td>Belgium</td>
<td>Graphite</td>
<td>GVB / VLEP / AGW</td>
<td>2.0 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>Graphite</td>
<td></td>
<td>2.0 mg/m³</td>
<td></td>
<td></td>
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<tr>
<td>Czech Republic</td>
<td>Graphite</td>
<td>PEL</td>
<td>10.0 mg/m³</td>
<td></td>
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<tr>
<td>Denmark</td>
<td>Graphite</td>
<td>GRV</td>
<td>2.5 mg/m³</td>
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<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>Graphite</td>
<td></td>
<td>5.0 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>Graphite</td>
<td>HTP</td>
<td>2.0 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Graphite</td>
<td>VLEP</td>
<td>2.0 mg/m³</td>
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<td></td>
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<tr>
<td>Greece</td>
<td>Graphite</td>
<td>OTE</td>
<td>10.0 mg/m³</td>
<td></td>
<td></td>
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<tr>
<td>Italy</td>
<td>Graphite</td>
<td>ACGIH</td>
<td>2.0 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>Graphite</td>
<td></td>
<td>0.5 mg/m³</td>
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<tr>
<td>Poland</td>
<td>Graphite</td>
<td>NDS</td>
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<tr>
<td>Portugal</td>
<td>Graphite</td>
<td>VLE</td>
<td>2.0 mg/m³</td>
<td></td>
<td></td>
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<tr>
<td>Spain</td>
<td>Graphite</td>
<td>VLA</td>
<td>2.0 mg/m³</td>
<td></td>
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<tr>
<td>Sweden</td>
<td>Graphite</td>
<td>AFS</td>
<td>5.0 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>Graphite</td>
<td>WEL</td>
<td>10.0 mg/m³</td>
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</tr>
</tbody>
</table>

A = Aveolengängiger Anteil  
GVB = Grenswaarden voor blootstelling aan chemische agentia  
VLEP = Valeurs limites d'exposition professionnelle  
AGW = Arbeitsplatzgrenzwert  
PEL = Přípustné expoziční limity  
GRV = Grenseveærdier for stoffer og materialer  
HTP = Haitallisiksi tunnetut pitoisuudet  
OTE = Οριακή Τιμή Έκθεσης  
ACGIH = Amerikan Conference of Governmental industrial Hygenists  
NDS = Najwyższe Dopuszczalne Stężenie  
VLE = Valor limite de exposição  
VLA = Valor limite Ambiental  
AFS = Arbetsmiljöverkets Författningssamling  
WEL = Workplace exposure limit

**NOTE:** To request language / country specific SDS please email minerals.sds@lkab.com

### 8.2 Exposure controls

**Protective equipment**

- **Engineering measures:** Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of inhalation of dust.
- **Respiratory equipment:** No specific recommendation made, but respiratory protection must be used if the general level exceeds the recommended occupational exposure limit. Wear dust masks in dusty areas.
- **Hand protection:** No specific hand protection noted, but gloves may still be advisable.
- **Eye protection:** Wear dust resistant safety goggles where this is a danger of eye contact.
- **Other protection:** Provide eyewash station.
- **Hygiene measures:** Wash hands at the end of each work shift and before eating, smoking and using the toilet.
SECTION 9: Physical and chemical properties

9.1 Information on basic and physical and chemical properties

- **Appearance**: Flakes
- **Colour**: Black
- **Odour**: Odourless
- **Solubility**: Insoluble in water
- **Initial boiling point and range (°C)**: 4200
- **Melting point (°C)**: 3675
- **Relative density**: 2.8
- **pH-Value**: 4 to 7

9.2 Other information

Not relevant

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions.

10.3 Possibility of hazardous reactions

Not relevant

10.4 Conditions to avoid

No specific conditions are likely to result in a hazardous situation.

10.5 Incompatible materials

Materials to avoid: No specific, or groups of, materials are likely to react to produce a hazardous situation.

10.6 Hazardous decomposition products

None under normal circumstances

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Other health effects: This substance has no evidence of carcinogenic properties.

- **Acute toxicity**
  - Acute toxicity (Oral LD50): Not relevant
  - Acute toxicity (Dermal LD50): Not relevant
  - Acute toxicity (Inhalation LC50): Not relevant

- **Inhalation**: Dust in high concentrations may irritate the respiratory system.
- **Ingestion**: May cause discomfort if swallowed.
- **Skin contact**: Powder may irritate skin.
- **Eye contact**: Particles in the eyes may cause irritation and smarting.

SECTION 12: Ecological information

12.1 Acute fish toxicity:

Not considered toxic to fish.

12.2 Persistence and degradability

- **Degradability**: The product is not readily biodegradable.

12.3 Bioaccumulative potential:

The product is not bioaccumulating.

12.4 Mobility in soil:

Not relevant, due to the form of the product.

12.5 Results of PBT and vPvB assessment:

This product does not contain any PBT or vPvB substances.

12.6 Other adverse effects:

None known
SECTION 13: Disposal considerations

13.1 Waste treatment methods: Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: Transport considerations

Road transport notes: Not classified
Rail transport notes: Not classified
Sea transport notes: Not classified
Air transport notes: Not classified

14.1 UN Number: The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.2 UN proper shipping name: Not classified for transportation.

14.3 Transport and hazard class(es): Not classified for transportation.

14.4 Packing group: Not classified for transportation.

14.5 Environmental hazards: Environmentally hazardous substances / marine pollutant: no

14.6 Special precautions for user: Not classified for transportation.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture:
Approved code of practice: Classification and labelling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
Guidance notes: Workplace Exposure Limits EH40.

15.2 Chemical Safety Assessment: Not applicable. No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision date: 20/03/2019
Revision: 6
Document no: 12-061NT.19-06
Risk phrases in full: NC – not classified

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