1 Identification

- **Product identifier**: Coloured glaze
- **Trade name**: Coloured glaze
- **Product ID#**: UNLEADED ONGLAZE BROWN 94R1005
- **Product Use**: Preparation of ceramic parts and coatings
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier**: Johnson Matthey Inc.
    498 Acorn Lane
    Downingtown, PA 19335
    tel. 1 610 873-3200
    fax. 1 610 873-3255
  - **Information department**: Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
  - **Emergency telephone number**: 1 856 384-7050

2 Hazard(s) identification

- **Classification of the substance or mixture**
  The product is not classified according to the Globally Harmonized System (GHS).
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**: Not applicable.
- **Information concerning particular hazards for human and environment**: The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system**: The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **Label elements**
  - **GHS label elements**: Void
  - **Hazard pictograms**: Void
  - **Signal word**: Void
  - **Hazard statements**: Void
  - **Hazard description**: Based upon the components the following hazards may exist:
    - **Target Organs - Lungs**
  - **Classification system**: 
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 0
    - Reactivity = 0

(Contd. on page 2)
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of frits and/or raw materials of natural origin and inorganic pigments in powder form

- Hazardous components:

<table>
<thead>
<tr>
<th>CAS:</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>65997-18-4</td>
<td>frits, chemicals</td>
<td>75-100%</td>
</tr>
<tr>
<td>EINECS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>266-047-6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Main components:

<table>
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<td>266-047-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68186-88-9</td>
<td>zinc iron chromite brown spinel</td>
<td>10-&lt;25%</td>
</tr>
<tr>
<td>EINECS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>269-050-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24623-77-6</td>
<td>aluminum oxide hydroxide</td>
<td>0.5-&lt;1%</td>
</tr>
</tbody>
</table>

- SVHC

- Additional information:
  For the wording of the listed risk phrases refer to section 16.
  This product is partly or entirely the result of a melting, calcining or sintering process at high temperatures. It therefore does not necessarily exhibit the properties of the abovementioned metallic constituents. The mentioned metals are present in a complex matrix and are expressed as their oxides; it is however highly unlikely that these oxides are actually present in the product, unless explicitly specified.

4 First-aid measures

- Description of first aid measures
- General information:
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
  If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. In case of unconsciousness place patient stably in side position for transportation.
- After skin contact:
  Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.
- After eye contact:
  Rinse opened eye for several minutes under running water.
- After swallowing:
  If symptoms persist consult doctor.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
40.0.7 · Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  · Special hazards arising from the substance or mixture: No further relevant information available.
· Advice for firefighters
  · Protective equipment: Wear full firefighting gear and SCBA

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures: Not required.
· Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up: Pick up mechanically.
· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Thorough dedusting.
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of dust.
    Provide suction extractors if dust is formed.
  · Information about protection against explosions and fires: No special measures required.
· Conditions for safe storage, including any incompatibilities
· Storage:
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions: Keep receptacle tightly sealed.
  · Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems:
  The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.
· Control parameters
  · Components with limit values that require monitoring at the workplace:
    There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.
65997-18-4 frits, chemicals

**PEL** Long-term value: 15 mg/m³
recommended PEL for nuisance dust

**TLV** Long-term value: 15 mg/m³
recommended TLV for nuisance dust

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Designation of material</th>
<th>%</th>
<th>Type</th>
<th>Value Unit</th>
</tr>
</thead>
</table>

Additional Occupational Exposure Limit Values for possible hazards during processing:

- **zinc compounds, n.o.s. (calculated as ZnO)**
  - PEL Long-term value: 15* 5** 5*** mg/m³
    - Dust only *total dust **respirable dust ***fume
  - REL Short-term value: C 15* 10*** mg/m³
    - Long-term value: 5**, 5*** mg/m³
      - *15-min dust only, **dust only, ***fume

- **chromium (III) compounds, n.o.s. (as Cr2O3)**
  - PEL Long-term value: 0.5 mg/m³
    - as Cr, inorganic compound
  - REL Long-term value: 0.5 mg/m³
    - as Cr, inorganic compound
  - TLV Long-term value: 0.5 mg/m³
    - as Cr(III), inorganic compound

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
- **Personal protective equipment:**
  - **General protective and hygienic measures:**
    - The usual precautionary measures for handling chemicals should be followed.
  - **Breathing equipment:** Not required.
  - **Protection of hands:**
    - **Material of gloves:**
      - Nitrile rubber, NBR
      - Chemical resistant gloves
    - **Eye protection:** Not required.

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance:**
      - **Form:** Powder
      - **Color:** Brown
      - **Odor:** Odorless
    - **pH-value:** Neutral
  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
    - **Boiling point/Boiling range:** Undetermined.
  - **Flash point:** Not applicable.
  - **Auto igniting:** Product is not selfigniting.
Product ID#: **UNLEADED ONGLAZE BROWN**

- **Danger of explosion:** Product does not present an explosion hazard.
- **Vapor pressure at 20 °C (68 °F):** 0 hPa
- **Density:** Not determined.
- **Solubility in / Miscibility with Water:** Insoluble.
- **Viscosity:***
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.
- **Solvent content:**
  - **Organic solvents:** 0.0 %
  - **Water:** 0.0 %
  - **Solvent (USA):** 0.0 %
- **Solids content:** 100.0 %
- **Other information:** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
  - **Primary irritant effect:**
    - **on the skin:** No irritant effect.
    - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - None of the ingredients is listed.
  - **NTP (National Toxicology Program)**
    - None of the ingredients is listed.
12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
- General notes:
  - Water hazard class 2 (Self-assessment): hazardous for water
  - Do not allow product to reach ground water, water course or sewage system.
  - Danger to drinking water if even small quantities leak into the ground.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendation:
  - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
- DOT, ADR, ADN, IMDG, IATA: Not regulated
- UN proper shipping name
- DOT, ADR, ADN, IMDG, IATA: Not regulated
- Transport hazard class(es)
- DOT, ADR, ADN, IMDG, IATA: Not regulated
- Class: Not regulated
- Packing group
- DOT, ADR, IMDG, IATA: Not regulated
- Environmental hazards:
  - Marine pollutant: No
- Special precautions for user
  - Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.
40. Transport/Additional information:
Not dangerous according to the above specifications.

· DOT
  · Remarks: Not regulated

· ADR
  · Remarks: Not regulated

· ADN
  · Remarks: Not regulated

· IMDG
  · Remarks: Not regulated

· IATA
  · Remarks: Not regulated

UN "Model Regulation": -

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
  · Sara
    · Section 355 (extremely hazardous substances):
      None of the ingredients is listed.
    · Section 313 (Specific toxic chemical listings):
      68186-88-9 zinc iron chromite brown spinel zinc compounds
    · TSCA (Toxic Substances Control Act):
      All ingredients are listed.
  · Proposition 65
    · Warning: This product contains a chemical known to the State of California to cause cancer
      None of the ingredients is listed.
    · Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.
      None of the ingredients is listed.
    · Warning: This product contains a chemical known to the State of California to cause male reproductive hazards
      None of the ingredients is listed.
    · Warning: This product contains a chemical known to the State of California to cause development toxicity
      None of the ingredients is listed.
  · Canadian Ingredient disclosure list
    · Limit 0,1%
      None of the ingredients is listed.
    · Limit 1%
      None of the ingredients is listed.
  · Cancerogenity categories
  · EPA (Environmental Protection Agency)
    None of the ingredients is listed.
40.0.7
· TLV (Threshold Limit Value established by ACGIH)
  None of the ingredients is listed.
· MAK (German Maximum Workplace Concentration)
  None of the ingredients is listed.
· NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.
· National regulations:
  The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Contact:
  J. Rose
  EHS Specialist
· Date of preparation / last revision 04/10/2015 / 5
· Abbreviations and acronyms:
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  ICAO: International Civil Aviation Organisation
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
· * Data compared to the previous version altered.