1 Identification

· Product identifier: Coloured glaze
· Trade name:  
· Product ID#:  
· Product Use:  
Coloured glaze  
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:  
· American Hazard Description
  Based upon the components the following hazards may exist:  
Nickel, Titanium dioxide, Cobalt and Antimony are cancer hazards
  Target Organs - Lungs, Hair

(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>Name</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: 266-047-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8007-18-9</td>
<td>antimony nickel titanate yellow</td>
<td>10-25%</td>
</tr>
<tr>
<td>EINECS: 232-353-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65997-18-4</td>
<td>frits, chemicals</td>
<td>1-5%</td>
</tr>
<tr>
<td>EINECS: 266-047-6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Main components:

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<td>1-5%</td>
</tr>
<tr>
<td>EINECS: 266-047-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68187-11-1</td>
<td>cobalt chromite blue spinel</td>
<td>1-5%</td>
</tr>
<tr>
<td>EINECS: 269-072-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7778-18-9</td>
<td>chromium (III) compounds, n.o.s. (calculated as Cr2O3)</td>
<td>&lt; 0.5%</td>
</tr>
<tr>
<td>EINECS: 231-900-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7778-18-9</td>
<td>calcium sulphate, natural</td>
<td>&lt; 0.5%</td>
</tr>
<tr>
<td>EINECS: 231-900-3</td>
<td></td>
<td></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. Supply fresh air and to be sure call for a doctor.
    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: Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - 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
  No dangerous substances are released.
  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.

### Exposure controls/personal protection

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.

<table>
<thead>
<tr>
<th>CAS No. Designation of material</th>
<th>%</th>
<th>Type</th>
<th>Value Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term value: 15 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>as Ni</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term value: 0.015 mg/m³</td>
<td></td>
<td></td>
<td>as Ni; See Pocket Guide App. A</td>
</tr>
<tr>
<td>Long-term value: 0.2 mg/m³</td>
<td></td>
<td></td>
<td>as Ni; inhalable fraction</td>
</tr>
</tbody>
</table>

| **REL**                         |   |      |            |
| Long-term value: 0.5 mg/m³      |   |      |            |
| as Cr                           |   |      |            |
| Long-term value: 0.5 mg/m³      |   |      | as Cr; See Pocket Guide App. C |
| Long-term value: 0.5 mg/m³      |   |      | as Cr |

| **TLV**                         |   |      |            |
| Long-term value: 15 mg/m³       |   |      |            |
| recommended PEL for nuisance dust |
| Long-term value: 15 mg/m³       |   |      |            |
| recommended TLV for nuisance dust |
| Long-term value: 15 mg/m³       |   |      |            |
| PEL Long-term value: * 15 mg/m³  |   |      | * total dust |
| REL LFC (LOQ 0.2 mg/m3)         |   |      | USA |
**9 Physical and chemical properties**

*Information on basic physical and chemical properties*

- **General Information**
  - **Appearance:**
    - **Form:** Powder
    - **Color:** Green
  - **Odor:** Odorless
  - **Odour threshold:** Not determined.
  - **pH-value:** Not applicable.
  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
**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.
40. 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)
  - 8007-18-9 antimony nickel titanate yellow 1 (nickel compounds, antimony compounds)
  - 68187-11-1 cobalt chromite blue spinel cobalt compounds
- NTP (National Toxicology Program)
  - 8007-18-9 antimony nickel titanate yellow nickel compounds, antimony compounds
  - 68187-11-1 cobalt chromite blue spinel cobalt compounds
- OSHA-Ca (Occupational Safety & Health Administration)
  - 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
### 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):**
    
    | CAS Number  | Chemical Name                  | Remarks                              |
    |-------------|--------------------------------|--------------------------------------|
    | 8007-18-9   | antimony nickel titanate yellow | nickel compounds, antimony compounds |
    | 68187-11-1  | cobalt chromite blue spinel    | cobalt compounds, chromium compounds |

  - **TSCA (Toxic Substances Control Act):**
    All ingredients are listed.

  - **Proposition 65**
    This product contains a chemical known to the State of California to cause cancer
    
    | CAS Number  | Chemical Name                  | Remarks                              |
    |-------------|--------------------------------|--------------------------------------|
    | 8007-18-9   | antimony nickel titanate yellow | nickel compounds, antimony compounds |
    | 68187-11-1  | cobalt chromite blue spinel    | cobalt compounds                     |
**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.

- TLV (Threshold Limit Value established by ACGIH)
  8007-18-9 antimony nickel titanate yellow A4

- 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.

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**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 / 8

**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
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- 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.