SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

<table>
<thead>
<tr>
<th>Material number</th>
<th>1400609</th>
</tr>
</thead>
</table>

| Trade name | PTCR HTL 1450-1750°C (3.5 mm), 1200/Box |

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

Use of the Substance/Mixture: Ceramic coating suited for firing, for glass and ceramics.

1.3 Details of the supplier of the safety data sheet

Company: Ferro GmbH
Gutleutstraße 215
60327 Frankfurt am Main

Telephone: +4969271160
Telefax: +496927116333
E-mail address: sdb@ferro.com
Responsible/issuing person

1.4 Emergency telephone number

CHEMTREC Global Number: +(1)-703-527-3887(Call Collect)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

This document has been developed with the exclusive purpose of complying with the obligation of informing the supply chain according to article 32 of the Reach regulation, because this material is not classified and does not require a material safety data sheet.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

**Chemical nature**: metal oxide/hydroxide

**Hazardous components**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Registration number</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide</td>
<td>1344-28-1</td>
<td>215-691-6 /</td>
<td></td>
<td></td>
<td>&gt;= 50 - &lt;= 100</td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>200-578-6 /</td>
<td>Flam. Liq. 2; H225</td>
<td></td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of first aid measures

**General advice**: Do not leave the victim unattended.

**If inhaled**: If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

**In case of skin contact**: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

**In case of eye contact**: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

**If swallowed**: Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

**Symptoms**: None known.

**Risks**: None known.
SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media
   Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

   Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture
   Hazardous combustion products : No hazardous combustion products are known

5.3 Advice for firefighters
   Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

   Further information : Standard procedure for chemical fires.
      Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
   Personal precautions : Use personal protective equipment.
      Ensure adequate ventilation.
      Evacuate personnel to safe areas.

6.2 Environmental precautions
   Environmental precautions : No special environmental precautions required.

6.3 Methods and material for containment and cleaning up
   Methods for cleaning up : Pick up and arrange disposal without creating dust.
      Sweep up and shovel.
      Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
   For personal protection see section 8.
SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: For personal protection see section 8. No special handling advice required. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures: General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage: No special restrictions on storage with other products. No materials to be especially mentioned.

Other data: No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s): Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Expressed as</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium oxide</td>
<td>1344-28-1</td>
<td>VLE-MP</td>
<td>10 mg/m3</td>
<td></td>
<td>PT OEL</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>VLE-MP</td>
<td>1,000 ppm</td>
<td></td>
<td>PT OEL</td>
</tr>
<tr>
<td>Further information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Engineering measures
No data available

Personal protective equipment
Eye protection: Safety glasses

Hand protection
Remarks: For prolonged or repeated contact use protective gloves.

Skin and body protection: Protective suit

Respiratory protection: No personal respiratory protective equipment normally required.

Protective measures: Wear suitable protective equipment.
When using do not eat, drink or smoke.

Environmental exposure controls
General advice: No special environmental precautions required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance: pellets

Colour: white

Odour: characteristic

Odour Threshold: No data available

pH: Not applicable

Melting point/range: No data available

Boiling point/boiling range: Not applicable

Flash point: Not applicable

Evaporation rate: Not applicable

Flammability (solid, gas): No data available

Burning rate: No data available

Auto-ignition temperature: No data available
Upper explosion limit : No data available
Lower explosion limit : Not applicable
Vapour pressure : No data available
Relative vapour density : Not applicable
Relative density : No data available
Bulk density : No data available
Solubility(ies)
  Water solubility : No data available
  Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Thermal decomposition : No data available
Viscosity
  Viscosity, kinematic : Not applicable
Explosive properties : No data available
Oxidizing properties : Not applicable

9.2 Other information
  Refractive index : Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
  Stable under recommended storage conditions.
  No decomposition if stored and applied as directed.

10.2 Chemical stability
  No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
  Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid
  Conditions to avoid : No data available
10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

Hazardous decomposition products : Stable under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity : Remarks: No data available
Acute inhalation toxicity : Remarks: No data available
Acute dermal toxicity : Remarks: No data available

Components:
ethanol:
Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg

Skin corrosion/irritation
Not classified based on available information.

Product:
Remarks: According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

Components:
ethanol:
Species: Rabbit
Exposure time: 24 h
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation
Not classified based on available information.

Product:
Remarks: According to the classification criteria of the European Union, the product is not
SAFETY DATA SHEET

considered as being an eye irritant.

Components:
ethanol:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Moderate eye irritation

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Product:
Remarks: No data available

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Product:
Remarks: No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Product:
Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.
Components:
ethanol:
Toxicity to daphnia and other aquatic invertebrates: LC50 (Daphnia (water flea)): 9,268 mg/l
Exposure time: 48 h

12.2 Persistence and degradability

Product:
Biodegradability: Remarks: No data available

Components:
aluminium oxide:
Biodegradability: Remarks: No data available

ethanol:
Biodegradability: Remarks: No data available

12.3 Bioaccumulative potential

Product:
Bioaccumulation: Remarks: No data available

Components:
aluminium oxide:
Bioaccumulation: Remarks: No data available

ethanol:
Bioaccumulation: Remarks: No data available

Partition coefficient: n-octanol/water: log Pow: -0.349 (24 °C)

12.4 Mobility in soil

Product:
Distribution among environmental compartments: Remarks: No data available

Components:
aluminium oxide:
Distribution among environmental compartments: Remarks: No data available

ethanol:
Distribution among environmental compartments: Remarks: No data available
12.5 Results of PBT and vPvB assessment

**Product:**

Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

**Product:**

Additional ecological information: Remarks: No data available

Remarks: There is no data available for this product.

---

**SECTION 13: DISPOSAL CONSIDERATIONS**

13.1 Waste treatment methods

**Product:**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging:**

Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

---

**SECTION 14: TRANSPORT INFORMATION**

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks: Not classified as dangerous in the meaning of transport regulations.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship type: N/A
Pollution category: N/A

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- International Chemical Weapons Convention (CWC): Neither banned nor restricted
- Schedules of Toxic Chemicals and Precursors: Neither banned nor restricted
- REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Neither banned nor restricted
- Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Neither banned nor restricted
- REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59.): This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
- REACH - List of substances subject to authorisation (Annex XIV): Neither banned nor restricted
- Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Neither banned nor restricted
- Regulation (EC) No 850/2004 on persistent organic pollutants: Neither banned nor restricted


The components of this product are reported in the following inventories:

- REACH: This mixture contains only ingredients which have been subject to a pre-registration according to Regulation (EC) No. 1907/2006 (REACH).
- CH INV: Not in compliance with the inventory
- TSCA: On TSCA Inventory
- DSL: All components of this product are on the Canadian DSL.
- AICS: On the inventory, or in compliance with the inventory
15.2 Chemical Safety Assessment

Not applicable

SECTION 16: OTHER INFORMATION

Full text of H-Statements
H225 : Highly flammable liquid and vapour.

Full text of other abbreviations
Flam. Liq. : Flammable liquids

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.