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

Product identifier

Material number : 1400604

Trade name : 1400604
PTCR LTH 970-1250°C (7 mm), 600/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

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.

Additional Labelling:
EUH210 .Safety data sheet available on request.
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. Prolonged inhalation of fine quartz dust may cause silicosis when the maximum admissible concentration at the work place is exceeded. Symptoms of a silicosis may be cough and chronic inflammation of the respiratory system. There is some evidence of increased risk of lung cancer in people who suffer from silicosis.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature : inorganic salt
                   silicatic material

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration (%)</th>
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<tbody>
<tr>
<td>barium carbonate</td>
<td>513-77-9 /</td>
<td>Acute Tox. 4; H302</td>
<td>&lt; 10</td>
</tr>
<tr>
<td></td>
<td>208-167-3 /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>quartz</td>
<td>14808-60-7 /</td>
<td></td>
<td>&lt; 10</td>
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<td></td>
<td>238-878-4 /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5 /</td>
<td>Flam. Liq. 2; H225</td>
<td>&lt; 10</td>
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<tr>
<td></td>
<td>200-578-6 /</td>
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<td></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.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

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
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.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

9.1 Information on basic physical and chemical properties
Appearance : pellets
Colour : red
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
SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

<table>
<thead>
<tr>
<th>1400604</th>
<th>PTCR LTH 970-1250°C (7 mm), 600/Box</th>
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<td>RS_FP_304384</td>
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<td>06/29/2016</td>
</tr>
<tr>
<td>Page</td>
<td>Page 7 of 14</td>
</tr>
</tbody>
</table>

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 toxicity estimate : > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available
Components:
quartz:

Acute oral toxicity: LD50 Oral (Rat): 500 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

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:
barium carbonate:
Species: human skin
Assessment: No skin irritation
Method: EPISKIN Human Skin Model Test
Result: No skin irritation
GLP: yes
Test substance: anhydrous substance
Remarks: According to the classification criteria of the European Union, the product is not considered as being a skin irritant.

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 considered as being an eye irritant.

Components:
barium carbonate:
Species: Rabbit
Exposure time: 1 h
Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: According to the classification criteria of the European Union, the product is not considered as being an eye irritant.

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

Components:
barium carbonate:
Exposure routes: dermal
Species: Mouse
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 429
Result: Did not cause sensitisation on laboratory animals.
GLP: yes
Test substance: anhdyrous substance

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

Components:
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:**
**barium carbonate:**
Toxicity to fish: LC50 (Gambusia affinis (Mosquito fish)): 6,950 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

**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:**
**barium carbonate:**
Biodegradability: Remarks: No data available

**quartz:**
Biodegradability: Remarks: No data available

**ethanol:**
Biodegradability: Remarks: No data available

12.3 Bioaccumulative potential

**Product:**
Bioaccumulation: Remarks: No data available
Components:
barium carbonate:
  Bioaccumulation : Remarks: No data available

quartz:
  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:
barium carbonate:
  Distribution among environmental compartments : Remarks: No data available

quartz:
  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
  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
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances: Neither banned nor restricted
preparations and articles (Annex XVII)

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

NZIoC: On the inventory, or in compliance with the inventory

ENCS: Not in compliance with the inventory

ISHL: Not in compliance with the inventory

KECI: On the inventory, or in compliance with the inventory

PICCS: On the inventory, or in compliance with the inventory

IECSC: On the inventory, or in compliance with the inventory

Inventories
15.2 Chemical Safety Assessment
   Not applicable

SECTION 16: OTHER INFORMATION

Full text of H-Statements

H225 : Highly flammable liquid and vapour.
H302 : Harmful if swallowed.

Full text of other abbreviations

Acute Tox. : Acute toxicity
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.