

Ceramics
When tradition builds a future



Roof Tiles & Bricks



Wall & Floor Tiles



Refractories



Abrasives



Refractories



Wall & Floor Tiles



Roof Tiles & Bricks

LIII CONGRESO DE LA SOCIEDAD ESPANOLA DE CERAMICA Y VIDRIO

Raw materials for refractories – the European perspective

Astrid Volckaert
24 October 2013



Refractories in Europe



PRE, the European Refractories Producers Association, was founded in 1953

PRE membership:

12 National associations

representing 16 countries,

160 companies, half of which are SMEs

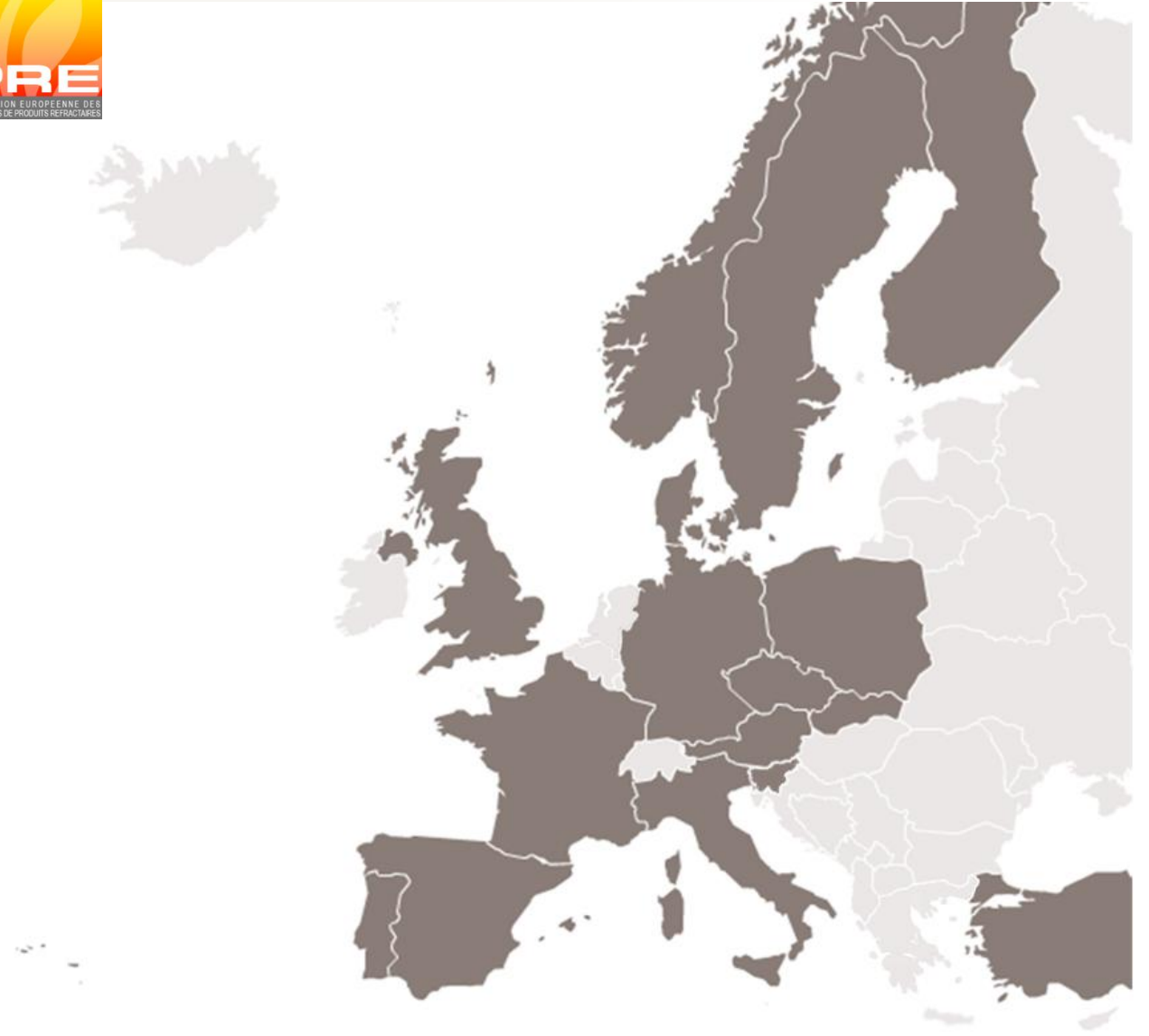
Four multinational direct members:

Calderys

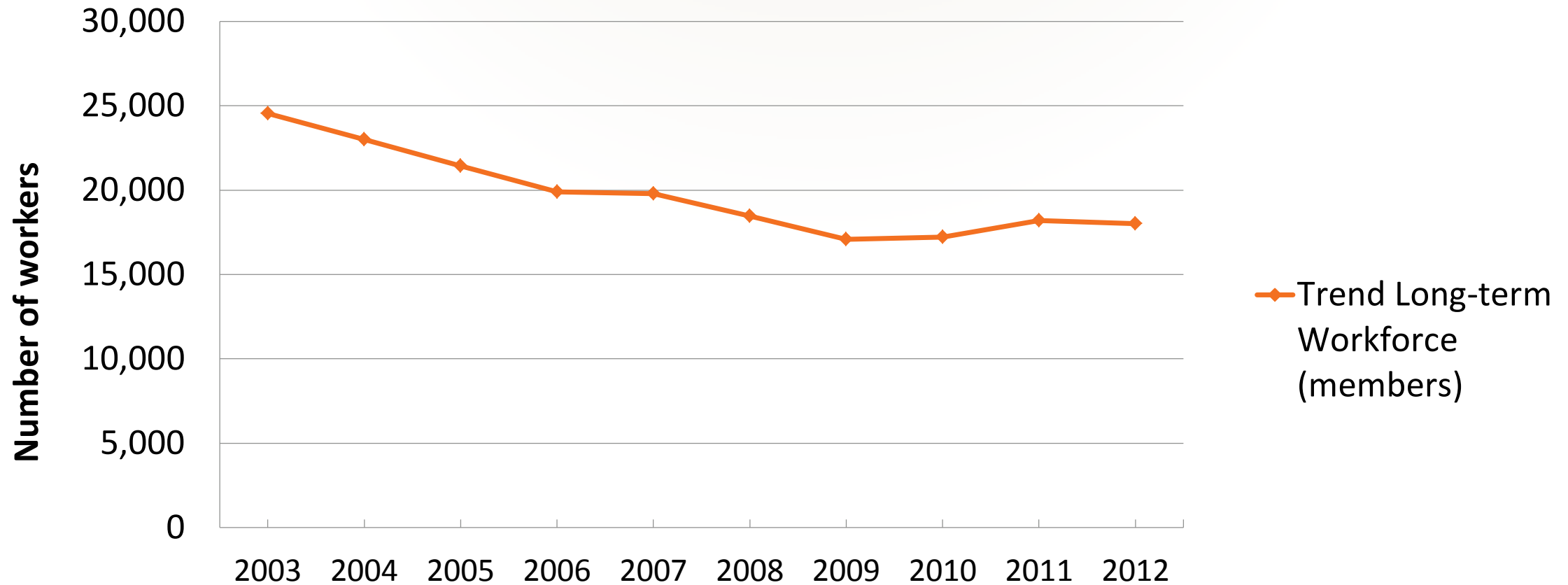
Magnesita

Refratechnik

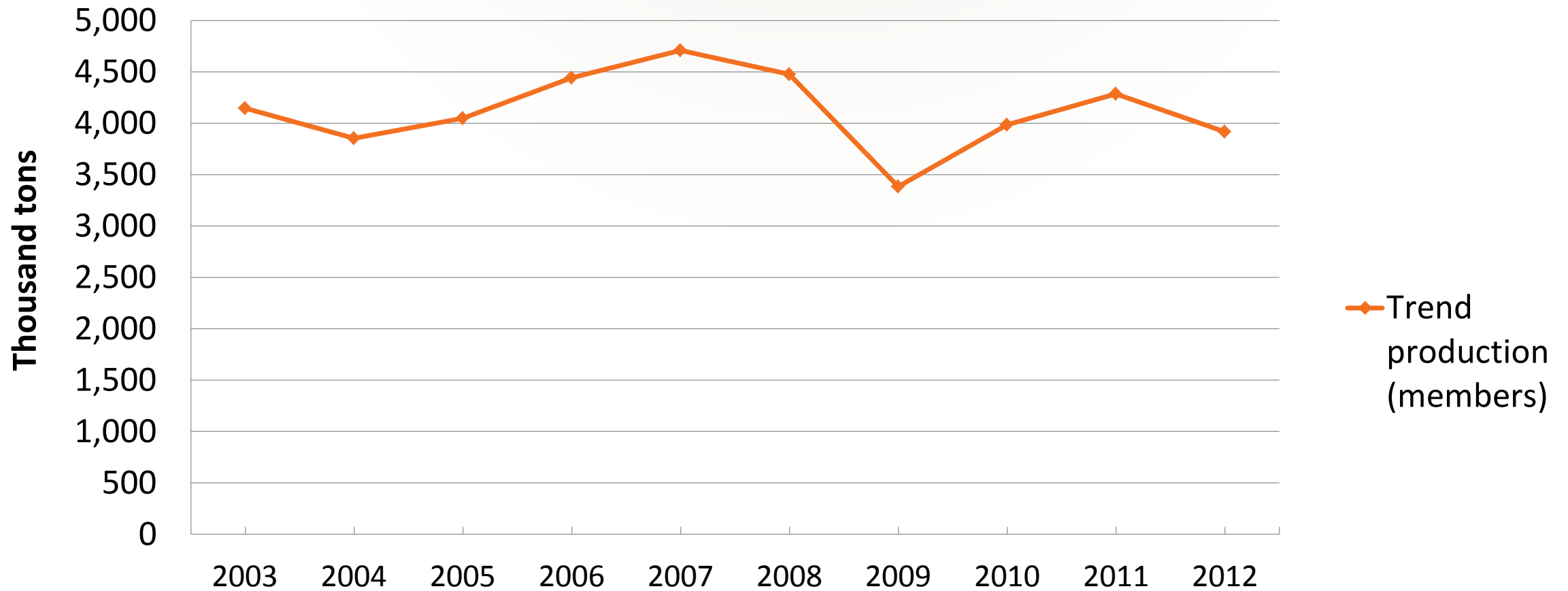
Vesuvius



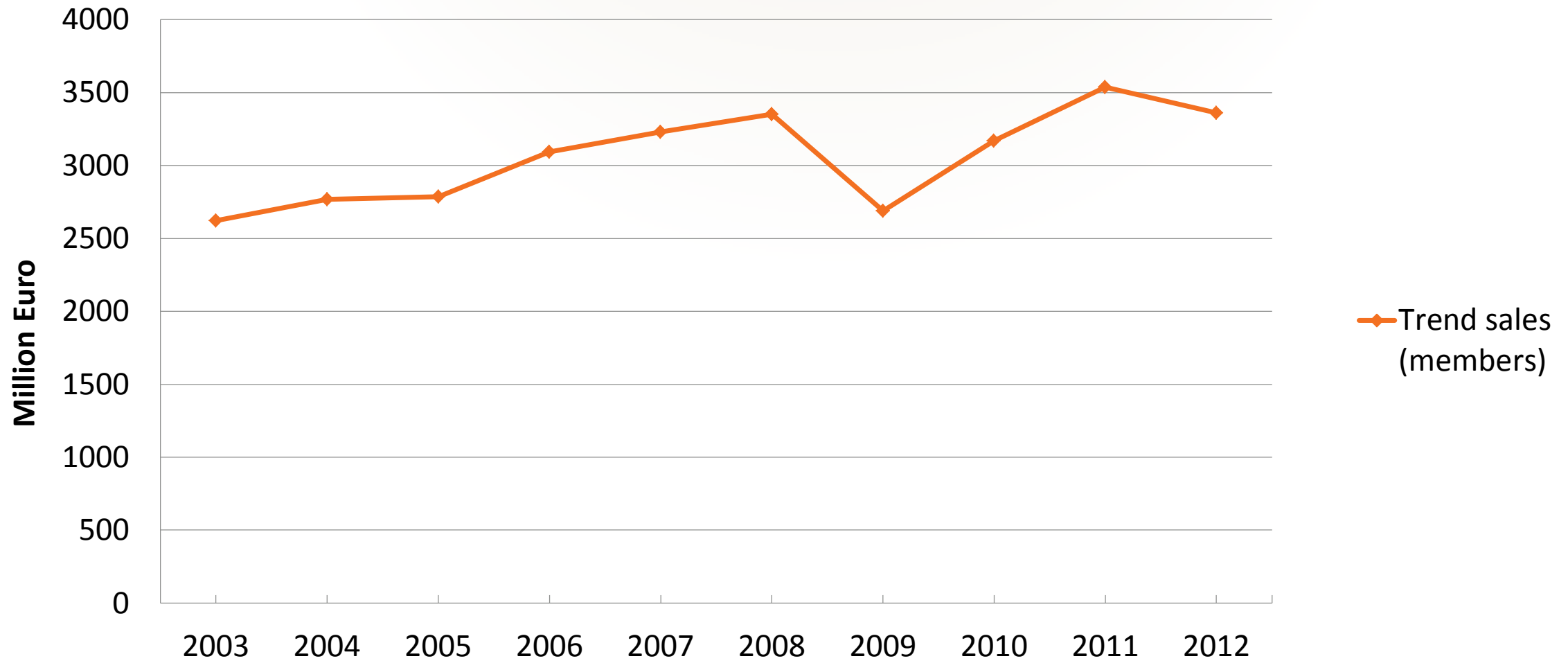
PRE – trend employment



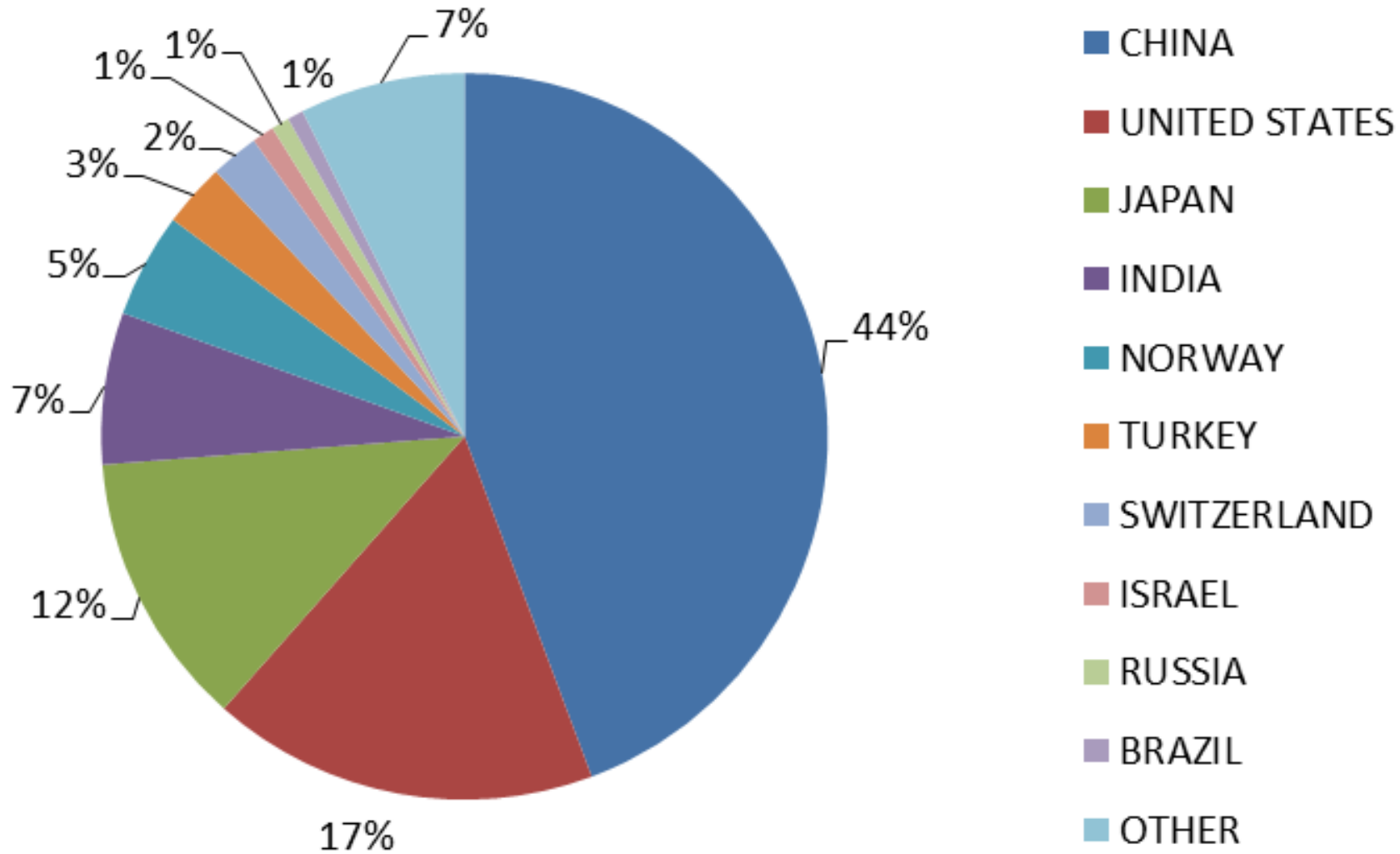
PRE – trend production



PRE – trend production value



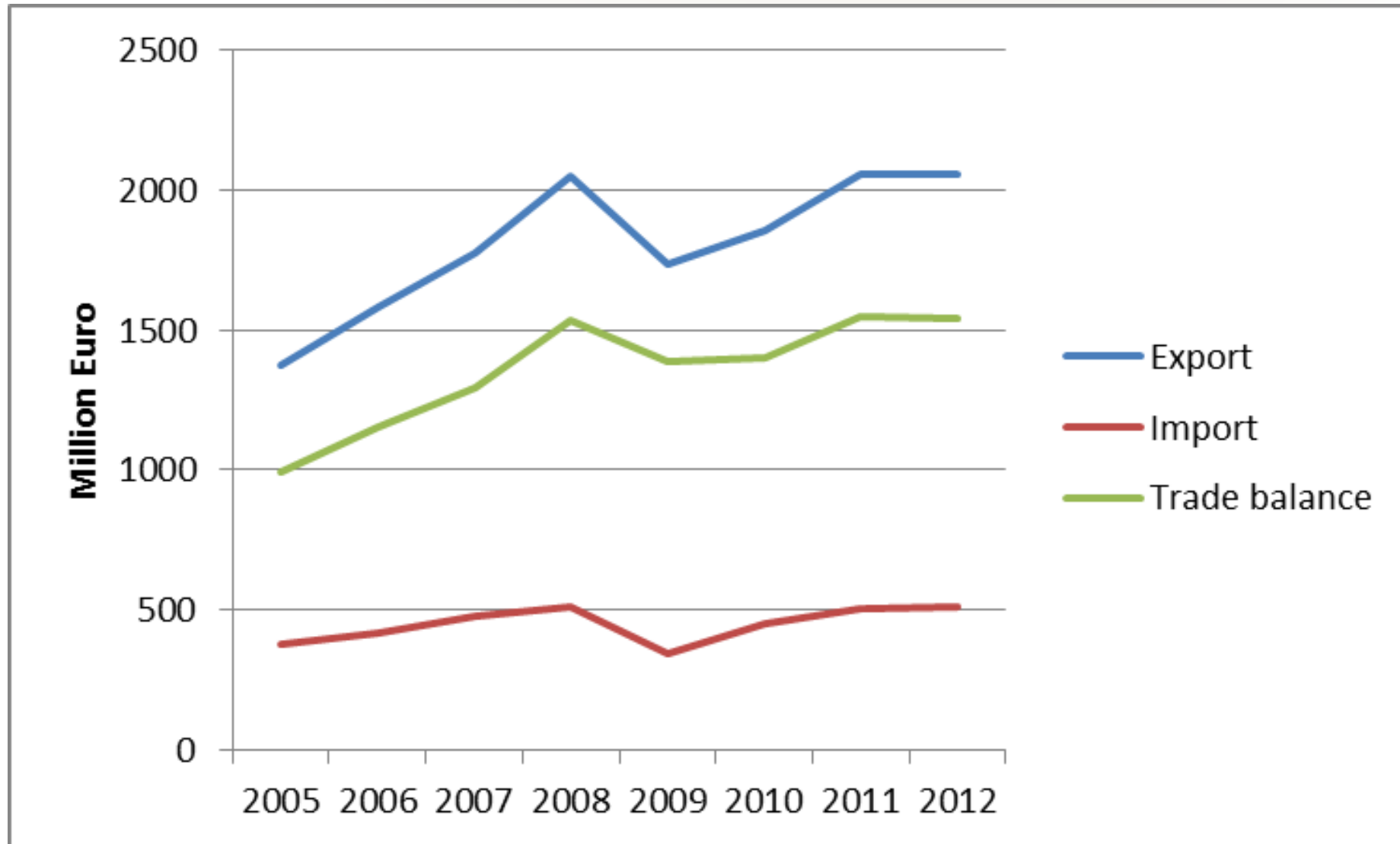
PRE – imports



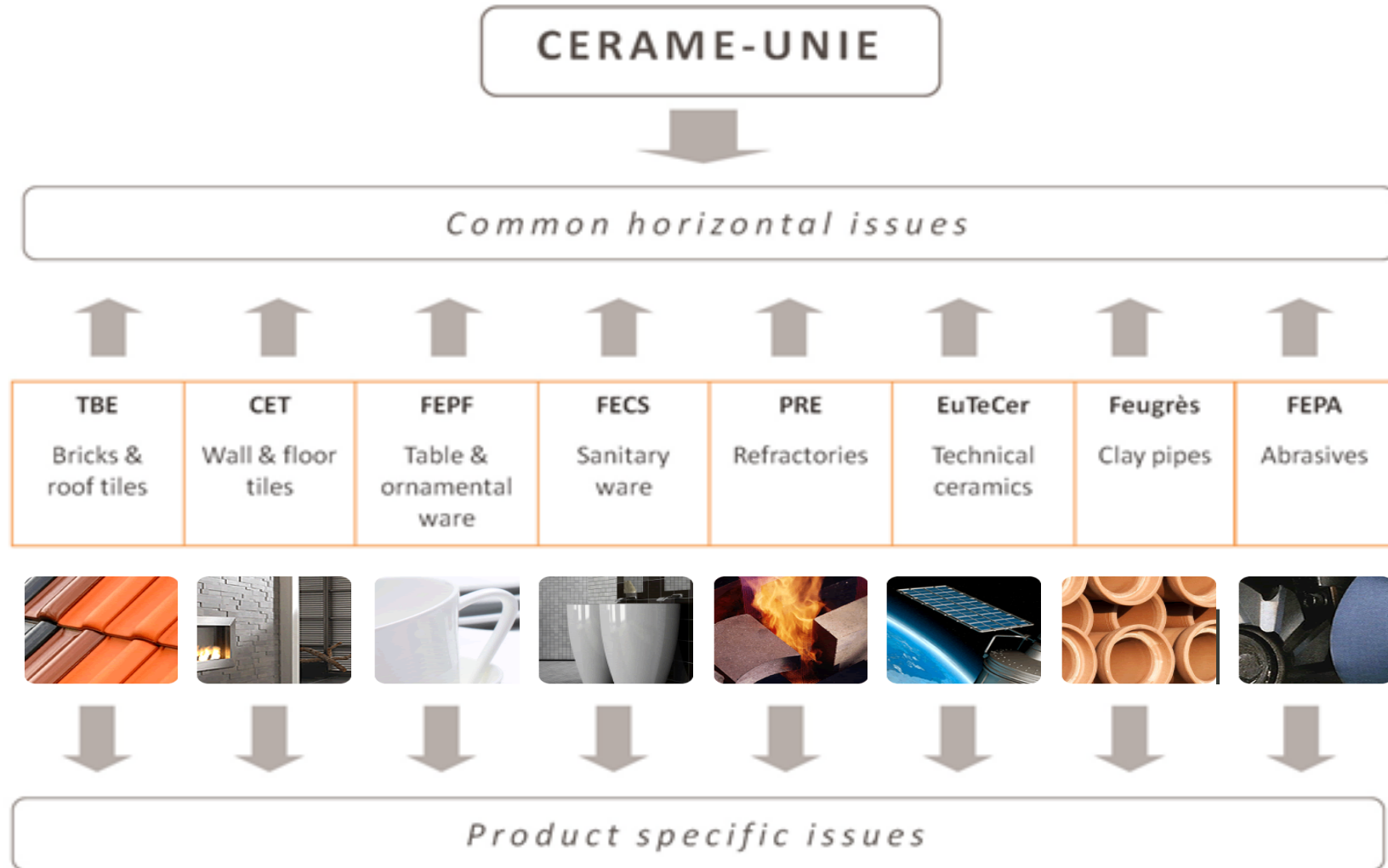
Top 10 importing countries

Total: 510 million Euro
Data: EUROSTAT
(2012)

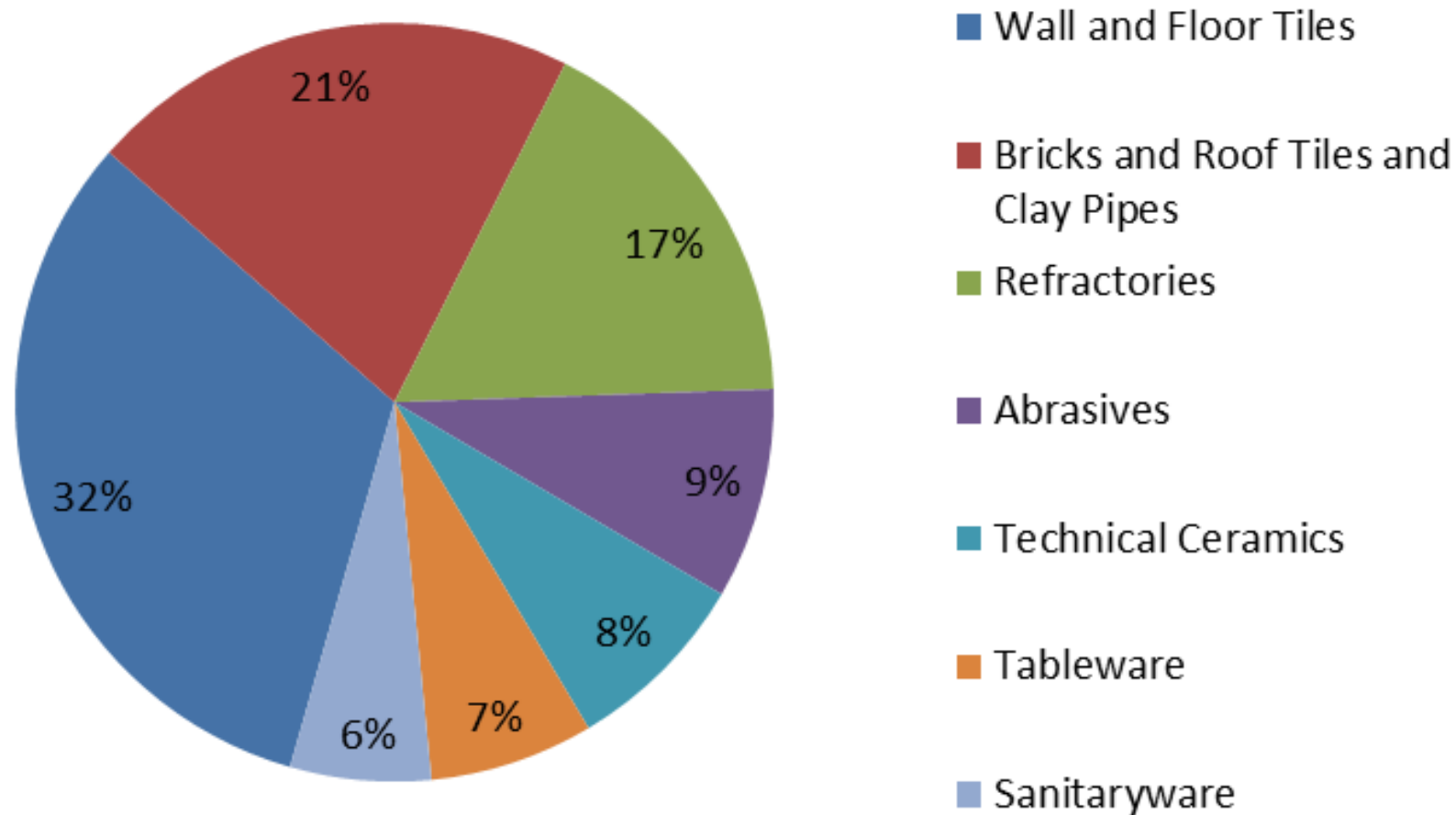
PRE – trade balance



Cerame-Unie



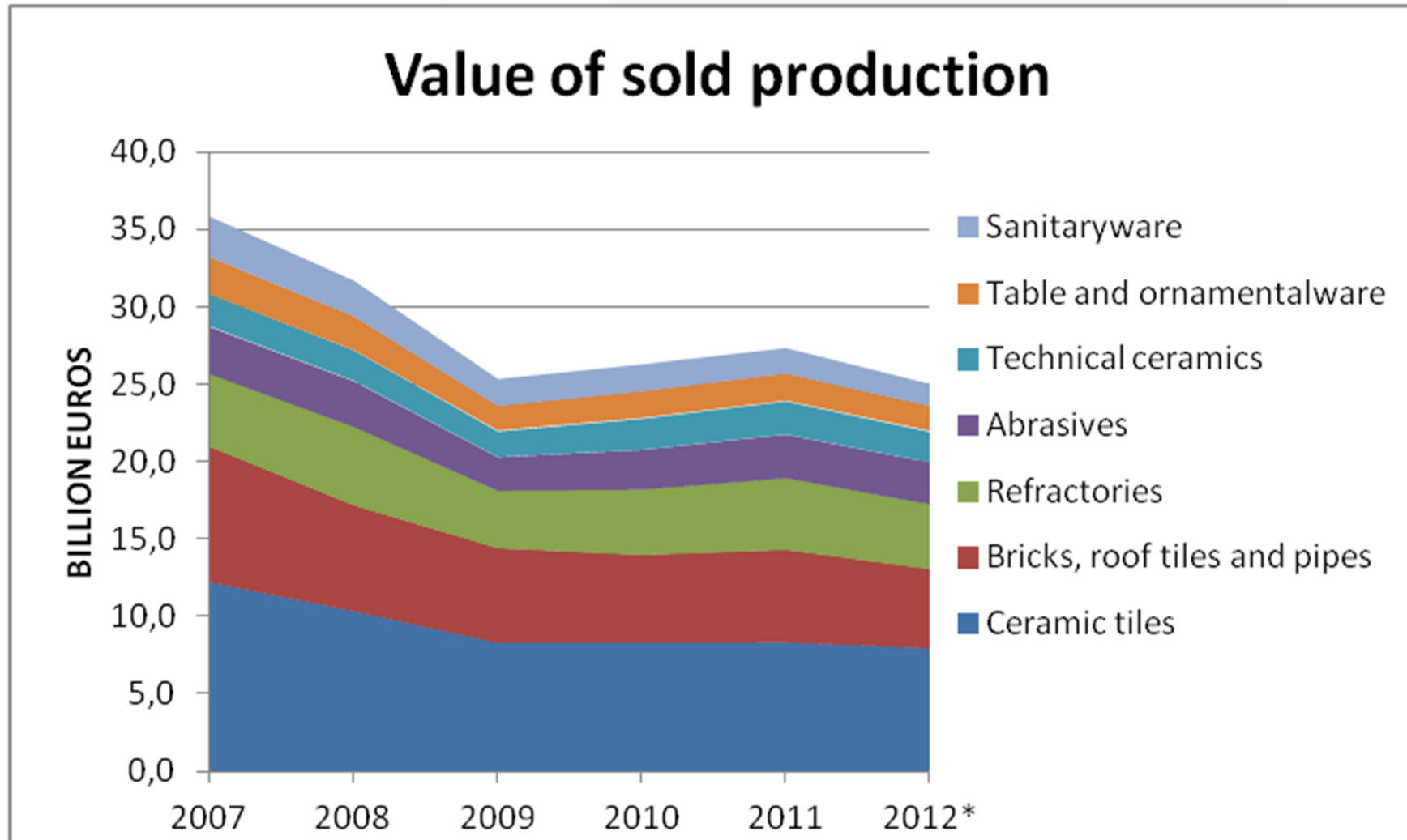
Cerame-Unie – production value



Data: EUROSTAT
(2012)

Total: 25 Billion
Euro

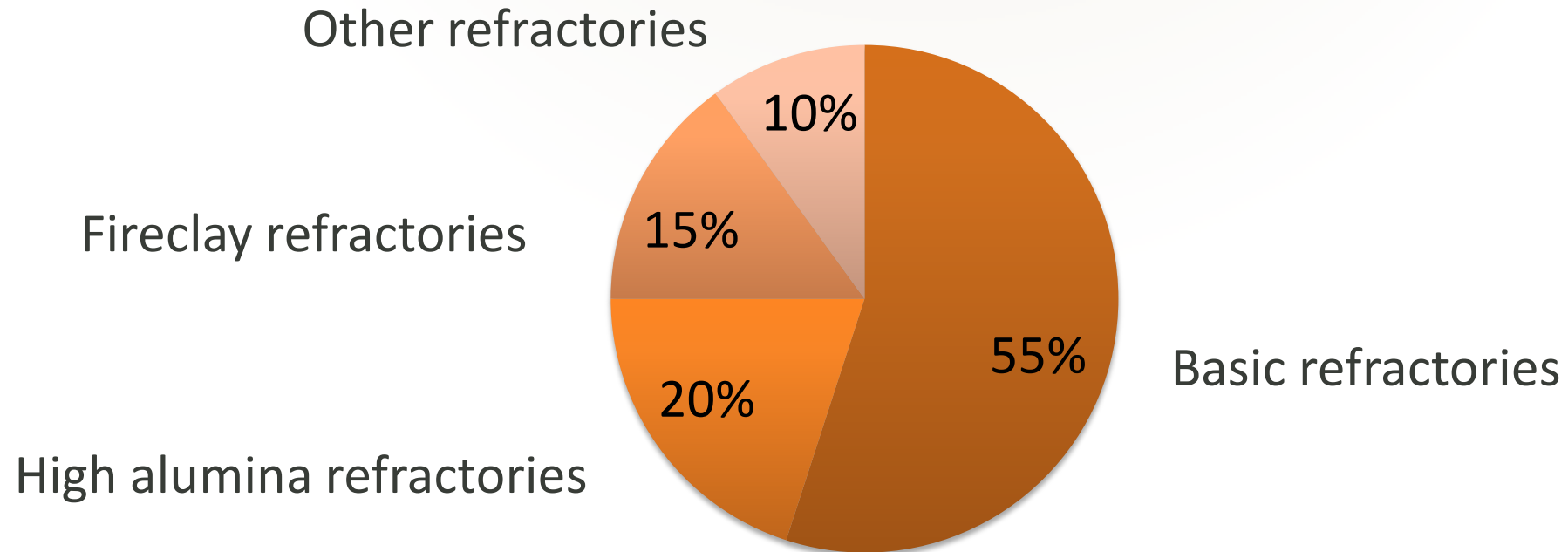
Cerame-Unie – production value



Data: EUROSTAT
(2012)

Total: 25 Billion
Euro

Raw materials for refractories



Based on PRE statistics for the year 2012

Raw materials for refractories

Magnesite (magnesia)

Graphite

Fire Clay

Bauxite

Dolomite(doloma)

Chrome Sand

Silicon carbide

Zirconia

Silica

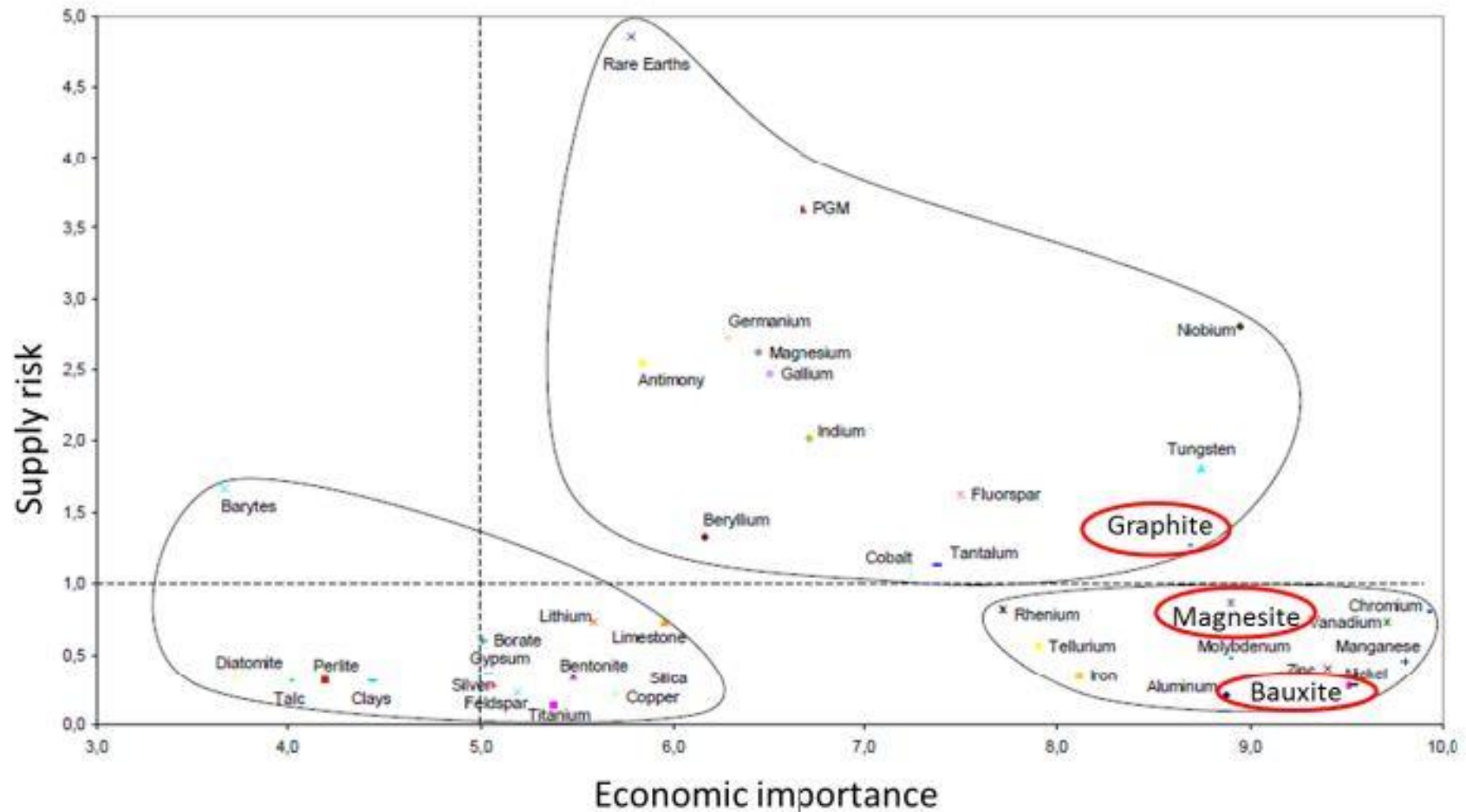
Andalusite



Picture: STEULER GmbH

Raw materials for the EU

- First EU list of critical raw materials published in 2009
- This list will be updated every 5 years



European policy on raw materials

- Raw Materials Initiative - COM (2008) 699



- EC Communication on 'tackling the challenges in commodity markets and raw materials' - COM (2011) 25

Ensure access globally

Sustainable sources within EU

Resource efficiency

EU raw materials policy based on three pillars

- Ensure access globally
- Sustainable sources within EU
- Resource efficiency

EU raw materials policy based on three pillars

- Ensure access globally

- 2009: US, EU and Mexico launched WTO action against Chinese export restrictions on a number of raw materials, including Bauxite and Silicon Carbide.

→ Since 2013: no export duties for these raw materials

- 2012: EU, US and Japan launched WTO action against Chinese export restrictions of various forms of rare earths, tungsten and molybdenum.

→ Panel report expected in November 2013.

- Sustainable sources within EU
- Resource efficiency



EU raw materials policy based on three pillars

- Ensure access globally
- Sustainable sources within EU
 - Reducing administrative burden for enterprises when opening/operating a mine or quarry by improving national policies
 - Improving the definitions and end-of-waste criteria in the EU Waste Framework Directive: uniform strategy on recycling of spent refractories
- Resource efficiency



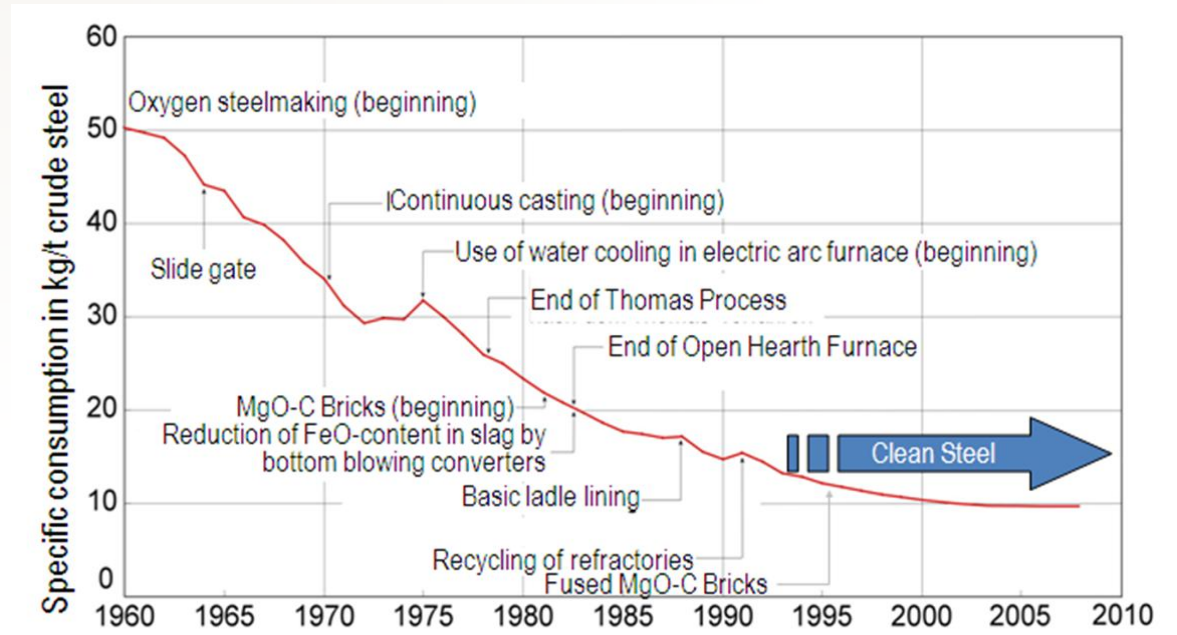
EU raw materials policy based on three pillars

- Ensure access globally
- Sustainable sources within EU
- **Resource efficiency**
 - Significant contribution from refractories highlighted in PRE contribution to UNITECR 2011: “The contribution of Refractories to the Resource Efficiency of Industry”



Resource efficiency in the refractory industry

- Reduction of specific refractory consumption
- Innovative refractories lead to resource savings in the downstream industry
- Improved recycling of spent refractories



Source: VDEh

Resource efficiency in the refractory industry

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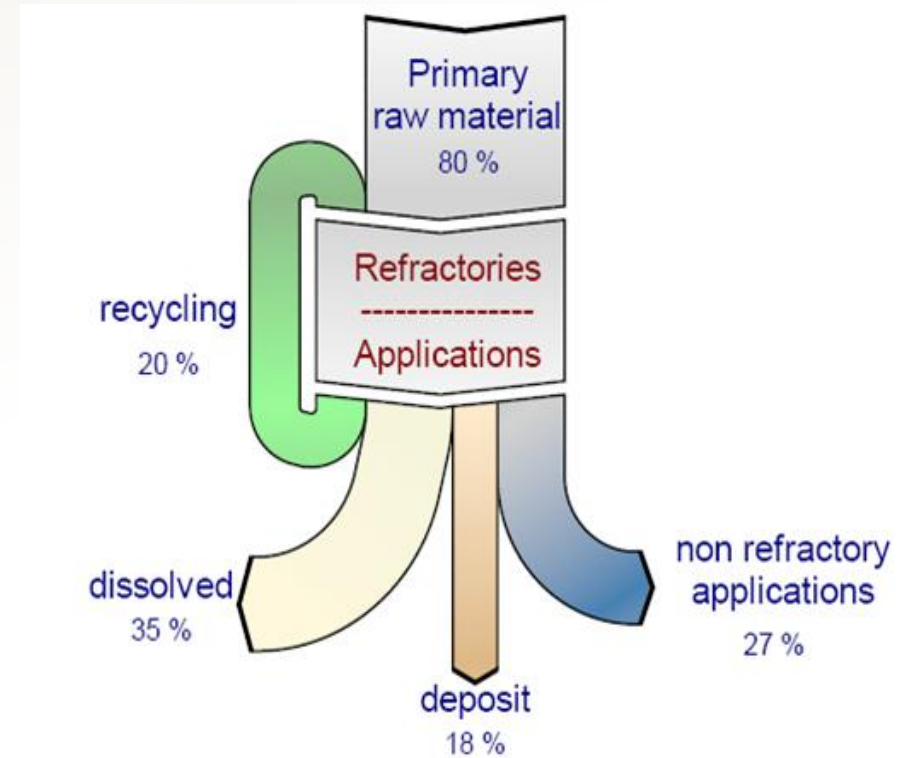
Source: RHI



Source: Vesuvius

Resource efficiency in the refractory industry

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Source: PRE

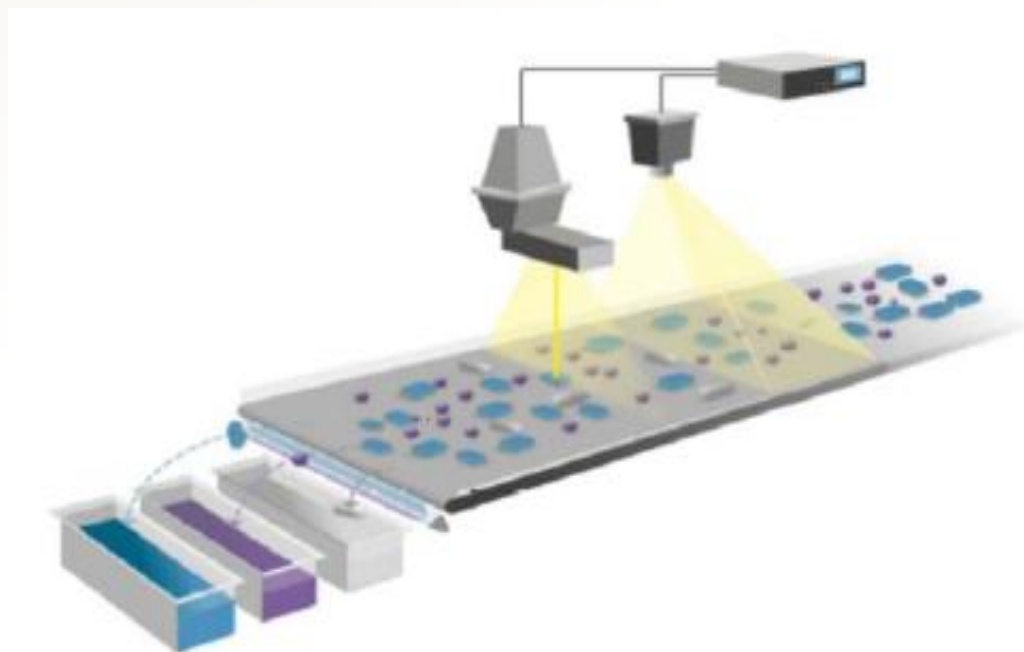
Recycling of spent refractories

Refractory products face every increasing technical and qualitative challenges

Re-use of refractory material requires high quality recovery

Laser technology for analysis and identification of specific minerals improves sorting

LIBS: Laser Induced Breakdown Spectroscopy



Source: Mineralwerke Westerwald Horn & Co. KG

Outlook

- European Innovation Partnership (EIP) on raw materials, launched in 2012
 - Bringing together EU Members States, companies, researches and NGOs to promote innovative solutions to Europe's raw material challenges
 - Strategic Implementation Plan (SIP) adopted on 25 September
- Horizon 2020
 - EU research and innovation programme (2014 -2020)
 - Focus on 'grand societal challenges' including raw materials and resource efficiency.



Conclusions

- Raw materials policy tops the EU agenda, EU focusses on 3 areas:
 - International access
 - Domestic access
 - Resource efficiency
- EU refractory industry is characterised by high performing products
 - Based on technical knowhow
 - Based on the use of high quality (primary or secondary) raw materials.
- EU Commission and EU refractory industry share the goal to foster innovation and ensure access to high quality raw materials.

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Refractories



Aluminates



Hydrocarbons



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