Flame Retardant markets to 2018

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Flame retardant markets
Demand for flame retardants grows faster than GDP growth

World: Demand for flame retardants by end-use 2004 to 2014 (000t)

Source: Roskill

Source: Roskill
MDH’s niche only a fraction of the size of ATH market

World: Demand for flame retardants by compound 2004 to 2014 (000t)

Source: Roskill
Growth drivers

- Further penetration gains for FR polymers
  - Increasing affluence worldwide, but especially in Asia, driving demand for safer, flame retarded products
  - Prospect of more stringent fire safety standards and legislation in the BRICs
- Infrastructure spending to 2018
Flame retardant compound prices

• MDH is more expensive than ATH, but is used as an alternative to ATH in polymers which have higher processing temperatures, because it is stable up to temperatures of >300 C (versus ATH which decomposes around 200 C)

• Roskill analyses the markets for antimony, bromine, magnesium compounds, boron and alumina: Since 2005, some of these FR prices have quadrupled
Route to market for MDH products

• Polymers are by far the largest market for metal hydroxide FR compounds

• MDH markets are a niche within a niche – metal hydroxide FR compounds are not the only FR option available to technical polymer compounders

• Polymer compounders, such as Inno-Comp here in Hungary, are the recipe mixing customers for MDH that exist between producers and processors
Growth within the MDH niche
World polymer demand

- World polymer demand increased by almost 6%py up to 2008 led by Europe, NAFTA and China
- Demand has recovered at <5.5%py since 2009 led by China (now the world’s largest country market)
- World market for FR compounds driven by growth in automotive, electrical, appliances, cable

Source: Roskill
ATH and MDH flame retardant compound demand

- Driven by legislation
- Most FR tests require loadings of 60 wt % ATH or MDH : 40 wt % polymer and other additives
- More stringent tests sometimes require >70 wt %
- FRs are expensive and these loadings can compromise other polymer properties

Source: Roskill
Growth by region
NAFTA is the largest regional market for MDH flame retardants

- NAFTA is a relatively large market for non-halogenated FRs – partly due to the voluntary phase-out of Deca
- Demand is finally recovering in North America, Japan and Europe
- 2014 will be the first year that GDP in these 3 mature economies grows simultaneously since 2010

US housing permits, 1959 to 2013 (000)
Growth by sector
• For car producers, Asia (particularly China) represents the greatest opportunity for growth.

• However, China believes that this position creates an opportunity to drive the standards and architecture of future automotive technology.

• A country’s threshold of mobility lies near US$10,000 GDP per capita (PPP) – this is where automobile ownership accelerates.
Conclusions
Conclusions

• MDH markets, a niche within a niche, are concentrated within some notoriously cyclical industries, including:
  • construction, automotive and appliances

• The good news is that these industries are all on an upswing, recovering from the world economic recession

• Roskill expects world consumption of MDH in FR applications to average 4% py growth to 2018, reaching 108,000 tpy
Roskill’s report on Magnesium Compounds and Chemicals
Thank you for your attention
Any questions?
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