

Recovery Polyurethane (PU) from forklift tyres

Bart Vlaeyen
Pieter Bols
Dimitri Bauwens



Market forktrucks and PU

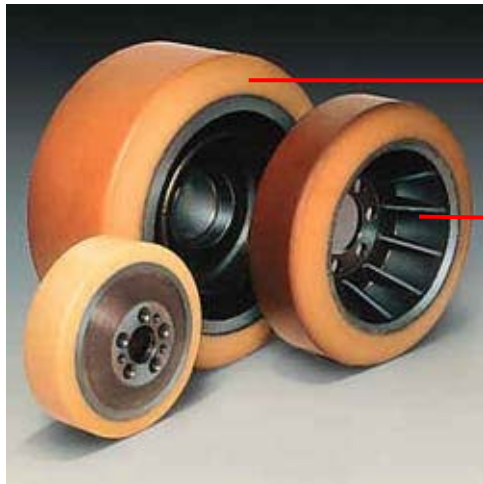
- Rose to 31,700 annual units in the UK (British Industrial Truck Association, 2007)
- US PU resin demand will reach 7.6 billion pounds in 2009
- leading polyurethane producers: Bayer, Dow Chemical, Huntsman and BASF
- Chinese market PU rising sharply

Current scenario

Each year tonnes of valuable material is thrown away

Below an annual estimate of Jungheinrich (leading German fork truck entity):

- Wheel consists of 2/3th Metal 1/3rd Polyurethane



250 ton PU
annually

750 ton Metal annually

Generally forklifting
manufacturers recycle the
metal only

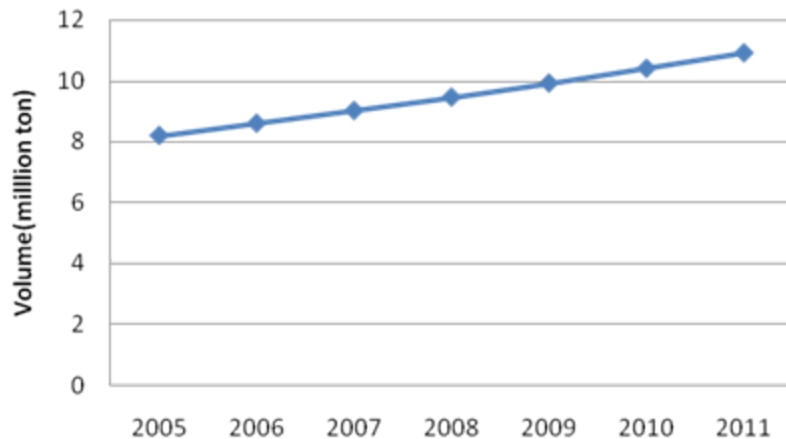


Consequently, PU is regarded as waste. However, the PU has not lost its function and value.

Environmental stress and energy use can be limited by extending the lifespan of PU.

Composites: material of the future

Growth of composite industry



- 5.2 billion dollar business
- Expected annual growth of 4.9%
 - New applications (e.g. car industry)
 - Greater need as countries develop
- Use in transport reduces weight
 - Less consumption of energy
 - Reduced production of Co₂

Our business

- Gaining benefits from centralisation
 - We collect the tyres from lifting truck service centra
- Our advantage towards the manufacturers
 - The possibility of having an automated proces
 - Economy of scale
 - Through the focus, we have more knowledge on processing the tyres than manufacturers.

Our Goal

The Development of Composite material

- In its recycled form, PU can be combined with other materials
- The start of an own product range of composite material

Waste will be reprocessed to be transformed into material with superb properties