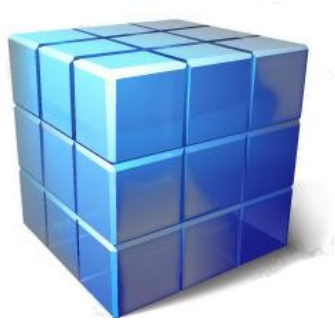


Cutting Emissions: how to go GREEN in EPS Business

"**....***because sustainability is one of our major challenges, but also our main opportunity…*"

Paolo Garbagna, ICSS Group MD

"*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*"
(Brundtland Commission, United Nations on March 20, 1987)

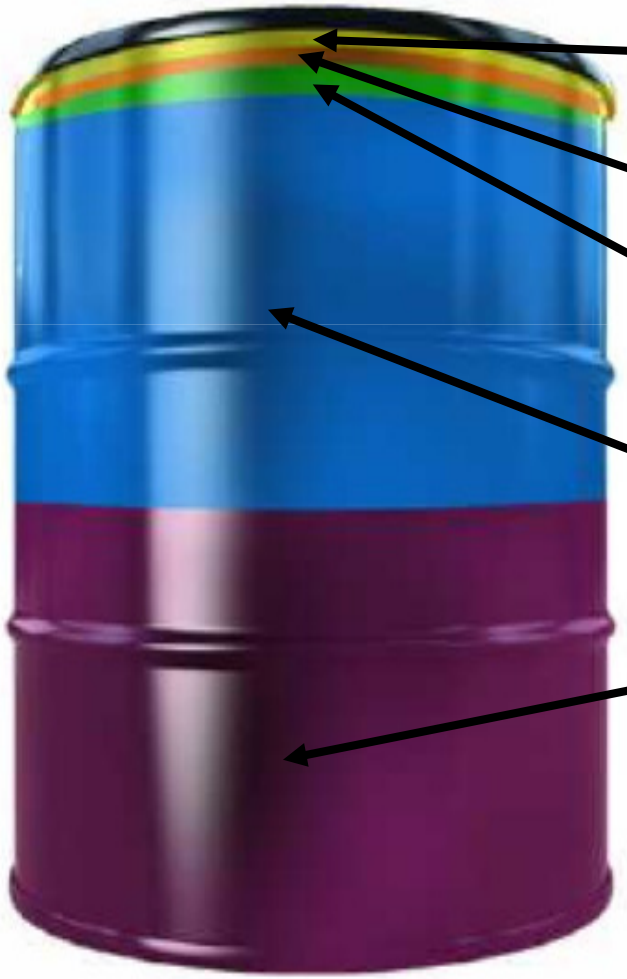
Aim of this short Presentation

- Demonstrate that the EPS impact on Carbon Foot print is lower than perceived
- Describe the real environmental issues linked to EPS Industry
- Offer our (available) solution : not necessarily the final one, but surely a major leap forward towards EPS being acknowledged as environmentally sustainable

What is Carbon Footprint

- A **carbon footprint** is a measure of the impact our activities have on the environment, and in particular climate change.
- It relates to the amount of greenhouse gases produced in our day-to-day lives through burning fossil fuels for electricity, heating and transportation etc.
- The carbon footprint is a measurement of all greenhouse gases we individually produce and has units of tonnes (or kg) of carbon dioxide equivalent.

Is Plastic using a lot of OIL ?



Plastic Production is worth just **4%** of total oil and gas production

Other non-energy usage 4%

Chemical and Petrolchemical Industry uses approximately 5%

Heating, electricity and energy production consumes an additional 42%

Transportation uses 45%

Perception vs facts of EPS business

- **Perception**: Plastics (and Polistyrene in particular) are a massive pollutant

- **Facts**: Plastic (and Polistyrene in particular) use just a limited share of the natural resource. The Carbon Footprint depending on EPS is very limited if compared with transport and heating.

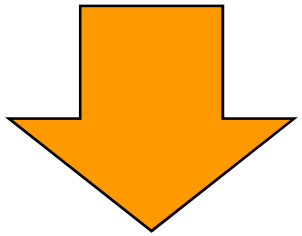
Real EPS environmental issues

- *HBCD*
- *Pentane*
- *Styrene*
- *Zink Stearate*

HBCD

- ***HBCD***
- *Pentane*
- *Styrene*
- *Zink Stearate*

- Classified SVHC and listed on the REACH Annex XIV list for authorization.
- Major packaging end users moving fast forward to zero HBCD contamination tolerance.
- Non food legal contamination limit < 0,1% (w/w)
- Recycling outside building industry not possible (contamination risk)

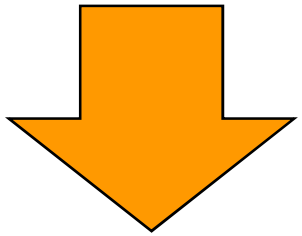


ICSS MOULDS HBCDD FREE PACKAGING

Pentane emissions

- *HBCD*
- ***Pentane***
- *Styrene*
- *Zink Stearate*

- Today is a national issue, but EU legislation to be soon expected.
- CH, F, B, Scandinavia – and recently Germany lead the process of moving towards reduced pentane.
- Demand for reduced pentane (~ 5%)/low density is increasing at the expense of standard (> 6%) grades.
- 4% pentane special grade is available but only for high density (> 25 g/l).



ICSS CAN USE 3% PENTANE EPS FOR YOUR PACKAGING

(also below 20 g/l density!)

Styrene

- *HBCD*
- *Pentane*
- ***Styrene***
- *Zink Stearate*

E.U.: Denmark filed for Annex XV and EcHA may be expected within March to open up the stage of consultation (+ 45 days) => Review.

Classification could become valid from OCT 2013 – 2014. (Same procedure as followed for HBCD).

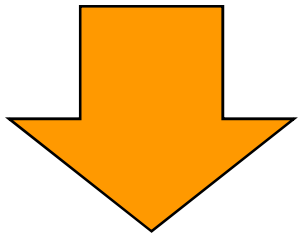
U.S.A: The U.S. Department of Health and Human Services (HHS) has released the 12th Report on Carcinogens on Friday, June 10, 2011. Eight new substances have been added in this edition of the Report on Carcinogens. The Report on Carcinogens is available at http://ntp.niehs.nih.gov/go/roc12.

Among the newly reviewed substances in the 12th RoC Styrene is *reasonably anticipated to be a* human carcinogen *based on limited evidence of carcinogenicity from studies in humans, sufficient evidence of carcinogenicity from studies in experimental animals, and supporting data on mechanisms of carcinogenesis*

Residual styrene

- *HBCD*
- *Pentane*
- ***Styrene***
- *Zink Stearate*

- The Plastics Europe EPS Raw Beads Voluntary Guidelines for residual styrene are as follows: "*In order to minimize the release to air, styrene monomer in raw beads will not exceed 0.1 % by weight (1.000 ppm)*".

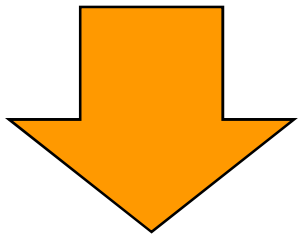


ICSS CAN USE < 100 PPM RESIDUAL STYRENE EPS FOR YOUR PACKAGING – 10 times lower than what is presently used on the market

Zink Stearate

- *HBCD*
- *Pentane*
- *Styrene*
- ***Zink Stearate***

- Used in the coating of EPS beads.
- As of today Zn is not an issue in Europe, but in the U.S. banned in connection with food packaging.



ICSS is focusing on this problem together with its raw material partner and expects to present a non Zn based alternative within 2011

ICSS AVAILABLE SOLUTION

- Since 2010 ICSS has participated to all the JACKOCELL® 3 JACKON Partner event.
- We are enthusiastic and proud being among the few EPS converters (only firm among Italian EPS molders) that will use this new technology of reduced 3% pentane/low density (below 20 g/l) product, granting not only a 50% reduction of pentane (emission) and a 10 times lower residual Styrene monomer, but even offering an alternative to legislators plans of forcing the industry into excessive costs of pentane incineration units.
- This will help ICSS and its Customers to strengthen the image and future of **EPS as a cost efficient, environmentally sustainable packaging material.**
- The first year's pre-marketing volume is planned restricted only to ICSS and the JACKOCELL® 3 Partner . At the moment JACKOCELL® 3 is available only to ICSS for the Italian market
- JACKOCELL® 3 is not necessarily the final, but surely a major leap forward towards EPS being acknowledged environmentally sustainable and the preferred packaging solution.

ICSS is prepared for a SUSTAINABLE FUTURE : are you ?

Contacts for samples and test

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