

The CreaSolv[®] Process

How it all began

Dr. Gerald G. Altnau

CreaCycle GmbH – Grevenbroich, Germany

CreaSolv[®] ist eine eingetragene Marke der CreaCycle GmbH



PSLoop Assembly - Amsterdam

7th November 2017

The Idea

- ***End of the 90-ties EPS collection systems in D-limonene were launched in Japan and USA.***
 - *Sony Orange R-Net with PS recycling (discontinued 2005)*
 - *Others discontinued as well*
 - *D-Limonene (terpene): flammable , skin & eye irritant*
- ***Foundation of CreaCycle in December 2000***
 - *Recycling (& collection) of thermoplastics with safe solvent formulations (lowest risk possible)*
 - *Selection criteria: exposure, health , physical-chemical and environmental risk*
 - *Registration of **CreaSolv®** brand in 2001*
 - *The bet: Increasing safety awareness and environmental concern*
- ***Cooperation with Fraunhofer IVV , Freising in 2002***
 - *Process development for solvent based plastic recycling (selective extraction)*
- ***Cooperation with EPC, Germany in 2002***
 - *Engineering & plant construction*



The first steps

- **2001 – EPS recycling (fish boxes) feasibility study at Fraunhofer IVV**
- **2003 -2005 EPS Loop (Innonet Project)**
 - *Circular Economy for EPS based on the CreaSolv® Process*
 - *Different EPS wastes were successfully recycled to produce insulation boards, passing the DIN 4108-10 test.*
 - *Participants from the whole value chain (Germany and Netherland) incl. Synbra and EPC.*
- **No commercialization because**
 - *Clean EPS waste re-granulation to 2nd grade Polystyrene*
 - *Packaging Waste Directive 2005/20/EC defines energy recovery (incineration) as effective means of recovery.*
 - *EPS insulation boards can be incinerated (HBCD not considered as POP yet).*
 - *Germany invented the „Heating Value Clause" to favor incineration of plastics by giving an equal status to energy recovery and recycling, thus violating EU law and lever out the EU Waste Framework Directive.*

Learning: Good concept, but 15 years to early



Changing Environment – A 2nd Change

- ***REACH - potential impact of substances to human health and the environment.***
 - *Risk reduction measures for all known uses of chemicals*
 - *Phase out of certain substances (e.g. phthalates or brominated flame retardants)*
- ***Globally Harmonized System of Classification of Labelling (GHS)***
 - *Standardized testing criteria and warning pictograms for dangerous goods.*
- ***EU Action Plan for Circular Economy***
 - *Support for recovery and recycling schemes / Closing the loop*
- ***Increasing awareness about plastic waste pollution***

Learning: Don't give up! Sometimes it may take longer.



Contact

CreaCycle GmbH

*Auf der Artwick 74
41515 Grevenbroich
Germany*

Dr. Gerald G. Altnau

Phone : +49-(0)2181-28 88 062

Mail: gerald.altнау@creacycle .de



PSLoop Assembly - Amsterdam

7th November 2017