Together with an alliance of German companies, EPC Group offers an advanced EPS recycling technology. The innovative CreaSolv® Technology has been developed and optimized at the Fraunhofer Institute for Process Engineering and Packaging IVV in cooperation with the solvent formulator CreaCycle GmbH. EPC Group has transferred the CreaSolv® Technology into a high efficient recycling plant design which produces high quality recycled polystyrene.

EPC Group offers engineering and technology for turnkey EPS/PS recycling plants.

EPC Engineering & Technologies GmbH is the first company worldwide offering this plant design based on the proprietary CreaSolv® Technology on a commercial scale for turnkey projects.
Process Description
Economically feasible solution

ENVIRONMENTAL ISSUES
In contrast to the current practices of incineration or landfill, the unique EPS recycling plant based on the CreaSolv® Process is the first “closed-loop” recycling process for PS/EPS wastes with or without hazardous impurities. The used CreaSolv® Formulation is not considered as hazardous according to the Globally Harmonized System (GHS). EPC Group offers an innovative EPS/PS recycling CreaSolv® plant design that provides an economical feasible solution to an environmental issue.

ADVANTAGES
• Alternative to EPS combustion and landfill
• Environmentally benign process liquid
• Highly efficient solvent recovery - 99% solvent recirculation
• Option to transport EPS in solution; reduced transportation costs
• EPC has four (4) standardized plant designs „of the shelf“ available
• Nearly all input stream compositions can be converted (feasibility to be checked individually)

COOPERATION FOR EPS RECYCLING

DID YOU KNOW?
Americans throw away 138,000 TONS OF FOAM CUPS every year.

So what to do with all these materials at the end of their life-cycle?

Step 1: Mechanical Crushing
The collected EPS/PS waste is crushed and broken into smaller pieces. This process step is always tailored to the waste composition.

Step 2: Dissolving of EPS
The EPS/PS pieces are dissolved by using the special CreaSolv® Formulation, ensuring that only polystyrene is dissolved and therefore all other plastics and impurities remain in solid phase in the slurry.

Step 3: Slurry Filtration
In order to separate solid impurities from the liquid, the slurry is transferred into EPC’s unique separation vessel. This step is followed by a multistage filtration. Only the dissolved polystyrene enters the next process stage.

Step 4: Polystyrene Precipitation
The PS gel is separated from the solvent. Both, precipitant and solvent, are recovered and fed back into the process circuit. At this stage dissolved impurities like HBCD (brominated flame retardant) will be extracted from the PS below the actual European limit values (POP regulations)

Step 5: Final Product
Melt extrusion, optional filtration and granulation to high quality recycled PS chips. The resulting PS chips have a high purity. HBCD-Additives will be reduced below 100 ppm during the recycling process.

The quality of end products was positively rated by European EPS producers.

How CreaSolv® Technology works for EPS Recycling

TYPICAL RAW MATERIAL SOURCES
Construction Waste General Packaging Food Packaging

Raw Material Handling Raw Material Dissolving
Solvent Tank Farm
Solvent Recovery
PS Solution Cleaning
Waste Handling Recovery
PS Precipitation
Final Product Handling

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