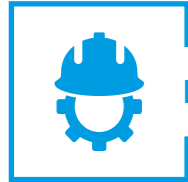




TECHNOLOGY LICENSING



ENGINEERING SERVICES



PLANT CONSTRUCTION

IDEAS INSIDE ^{EPC}



EPS Recycling Technology

for expanded polystyrene (EPS) & polystyrene (PS)
transformed back into high-purity polystyrene (PS)



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Engineering and technology for turnkey EPS/PS recycling plants by EPC

Together with an alliance of German companies, EPC Engineering & Technologies GmbH 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 Engineering & Technologies GmbH has transferred the CreaSolv® Technology into a high efficient recycling plant design which produces high quality recycled polystyrene.

EPC Engineering & Technologies GmbH is the first company world-wide offering this plant design based on the proprietary CreaSolv® Technology on a commercial scale for turnkey projects.



EPC Group is certified per DIN EN ISO 9001

IDEAS INSIDE ^{EPC}



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

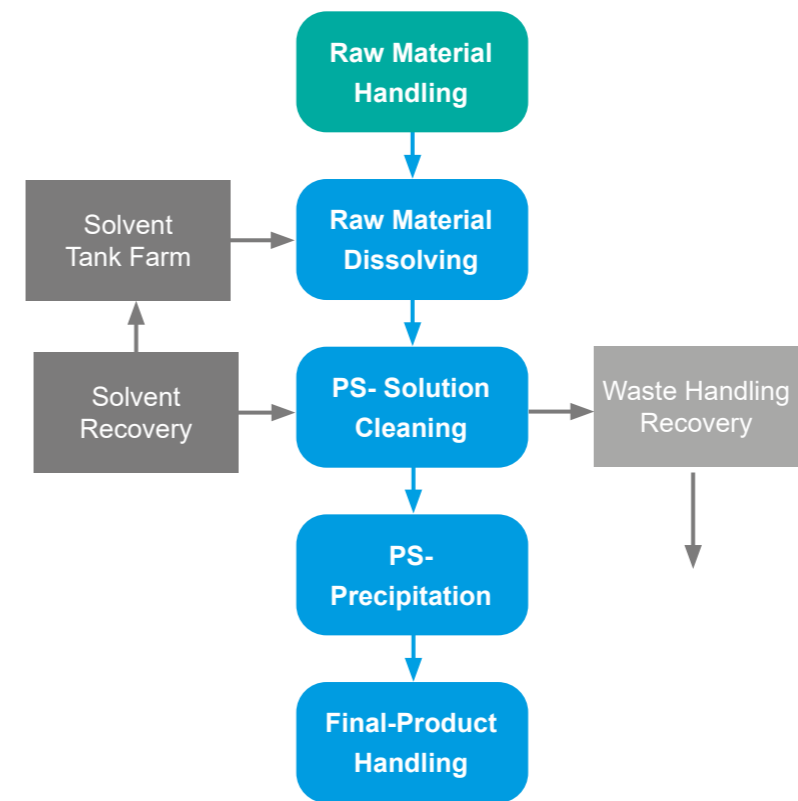
Construction Waste



General Packaging



Food Packaging



TAILOR-MADE DESIGN



EPC Group works with each client individually to develop a tailor-made concept, based on EPC's basic design that can be optimized for the specific EPS feedstock.



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