

ABSTRACT

It is possible to recover a volume reducing agent from a waste foamed polystyrene resin material compacted with the volume reducing agent and to impregnate a blowing agent into the compacted material at ordinary room temperature.

The volume reducing agent is preferably a polar solvent having solubility with respect to the polystyrene resin and exhibiting a mutual solubility with the blowing agent, which is one whose hydrogen bond term δh and polarity term δp of the Hansen solubility parameters satisfy the following conditions:

$$(\delta p - 5.8)^2 + (\delta h - 4.3)^2 < 50 \quad \text{and} \quad \delta p^2 + \delta h^2 > 46.$$

[units: $(\text{J}/\text{cm}^3)^{1/2}$]

The solvent used as the volume reducing agent is preferably at least one solvent selected from the group consisting of ketones, esters, polyhydric alcohol ether acetates, ethers, halogenated hydrocarbons, nitro compounds, and amines. The solvent may be a mixed solvent consisting essentially of at least one solvent selected from the above-described group and at least one solvent selected from the group consisting of aliphatic hydrocarbons and aromatic hydrocarbons.



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