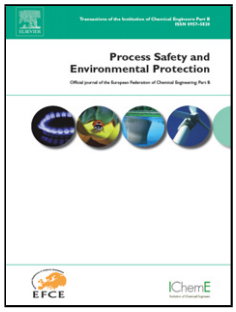

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Glass foams produced from glass bottles and eggshell wastes

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Highlights

- Glass foams were produced from discarded glasses and eggshells.
- Eggshells are a calcium carbonate rich residue.
- The obtained glass foams have potential as thermal insulating materials.
- Thermal insulation and non-flammability are the main technical requirements.
- Reusing glass bottles and eggshells contributes to minimize the environmental impacts.

Abstract: Glass foams were produced from discarded glass bottles (GB) and eggshells (ES) as foaming agent in contents between 1 and 30 wt%. The raw materials (GB, ES) were homogenized and uniaxially pressed (20 MPa). The obtained powder compacts were fired at 900 °C/30 min and characterized according to their chemical, physical and structural properties. The results (porosities between 60 and 95% with thermal conductivities between 0.177 and 0.055 W/m.K and compressive mechanical strength between 0.15 and 1.50 MPa) indicate that the obtained glass foams have potential for applications where thermal and acoustic insulation and non-flammability are the main technical requirements.