ABSTRACT

METHOD FOR PREPARING HEXAFLUORO-1,3-BUTADIENE

Provided is method for preparing hexafluoro-1,3-butadiene. The preparation method includes the following steps: step (1), a trifluoroethenyl zinc bromide solution, a catalyst, and a first organic solvent are placed into a pressure resistant reactor, bromotrifluoroethylene is added after displacement with an inert gas, and hexafluoro-1,3-butadiene is obtained through reaction; and step (2), after the reaction is completed, a gas-phase material is allowed to pass through a circulating spray system filled with a second organic solvent to absorb excess bromotrifluoroethylene and fluoro-olefin impurities, and the unabsorbed crude hexafluoro-1,3-butadiene is purified through distillation, where the second organic solvent is selected from the polar aprotic organic solvent or ionic liquid. In the present disclosure, the method for preparing hexafluoro-1,3-butadiene through cross-coupling of bromotrifluoroethylene and trifluoroethenyl zinc bromide is realized. The method has the advantages of being low in raw material cost, less in discharge amount of the three wastes, etc.

Fig. 1