

CLAIMS



1. A process for the production of paraxylene of very high purity from a charge containing a mixture of aromatic hydrocarbons having 7 to 9 carbon atoms in which at least a part of the charge is made to circulate in a zone suited to enrich a first fraction to at least 30% by weight of paraxylene, and at least a portion of said first fraction is purified by at least one high temperature crystallization T1, advantageously between +10 and -25°C in at least one crystallization zone (50) (step a), crystals are collected in suspension in a mother liquor (step b), the crystals are separated from the mother liquor in at least a first separation zone (52), (step c),

the process being characterised by the following steps:
 - d) the crystals obtained are partially melted in at least one partial melting zone (55) separate from the crystallisation zone, and a suspension of crystals is collected,
 - e) the crystals in suspension of step (d) are separated and washed with a suitable washing solvent in at least one separating and washing zone (57), and, on the one hand, pure paraxylene crystals, and, on the other hand, a washing liquor (58) are collected; and
 - f) said pure crystals are optionally completely melted (61), and a liquid stream (60) of molten paraxylene is collected.
2. A process according to claim 1, wherein the paraxylene-enrichment zone is at least one crystallization zone at very low temperature in which the charge containing a mixture of hydrocarbons having 8 carbon atoms is introduced which delivers, after a separation step, a liquid that is isomerised in an isomerisation zone and crystals that are melted which are at least a portion of said first fraction.
3. A process according to claim 1, wherein the paraxylene-enrichment zone is a selective adsorption zone (8) containing a zeolitic adsorbent in which the charge containing a mixture of hydrocarbons having 8 carbon atoms is introduced, a selective adsorption of the