KAWASAKI STEEL TECHNICAL REPORT

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R&D of High-Technology Research Laboratories,

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of the Technical Research Division

A Novel Process for Tar-Base and Indole Separation from Coal Tar

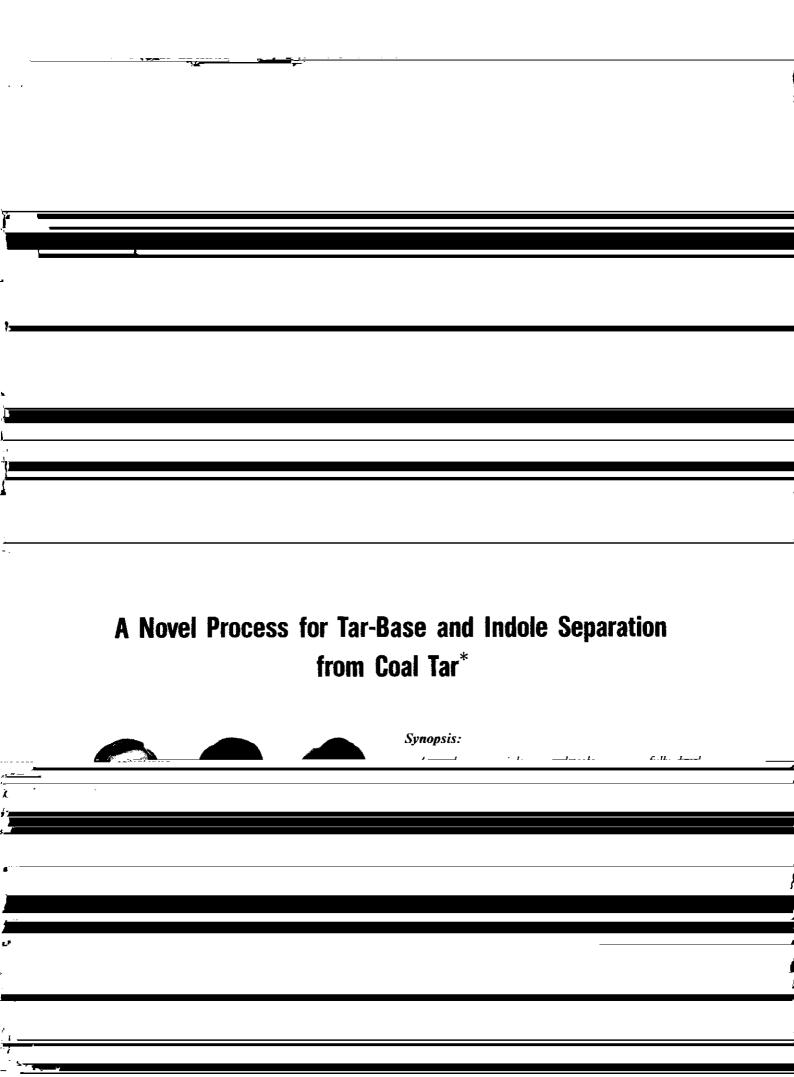
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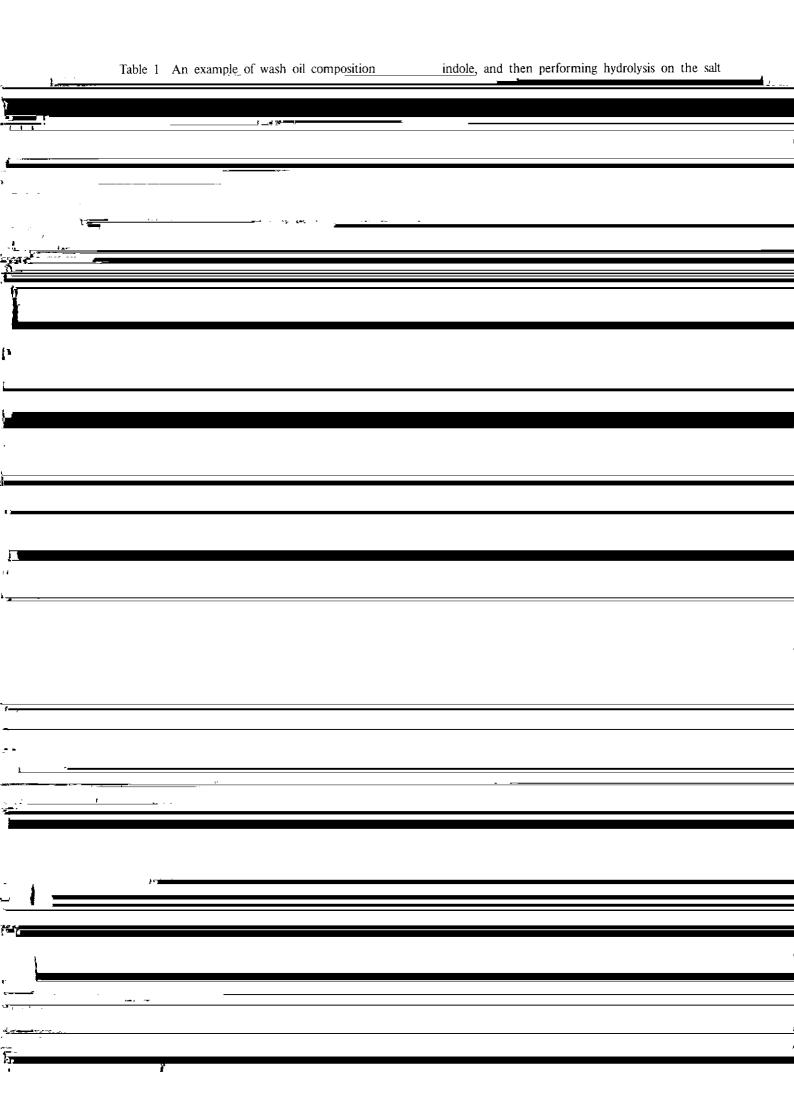
Synopsis:

A novel commercial process has been successfully developed to separate indole, methylnaphthalene and tar bases such as quinoline and isoquinoline contained in wash oil which is produced by the distillation of coal tar. The process consists of tar-base removal, indole removal, using an oligomerization technique, and purification of the desired products. The indole oligomerization method is the most efficient and economic technology ever commercialized for separating indole of low content from other components contained in tar-base-removed wash oil. Construction of a plant was completed at Mizushima Works in May 1988, and the plant has been smoothly operated to produce purified indole, methylnaphthalene, quinoline and isoquinoline.

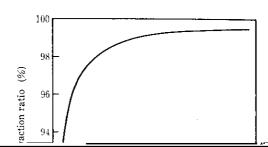
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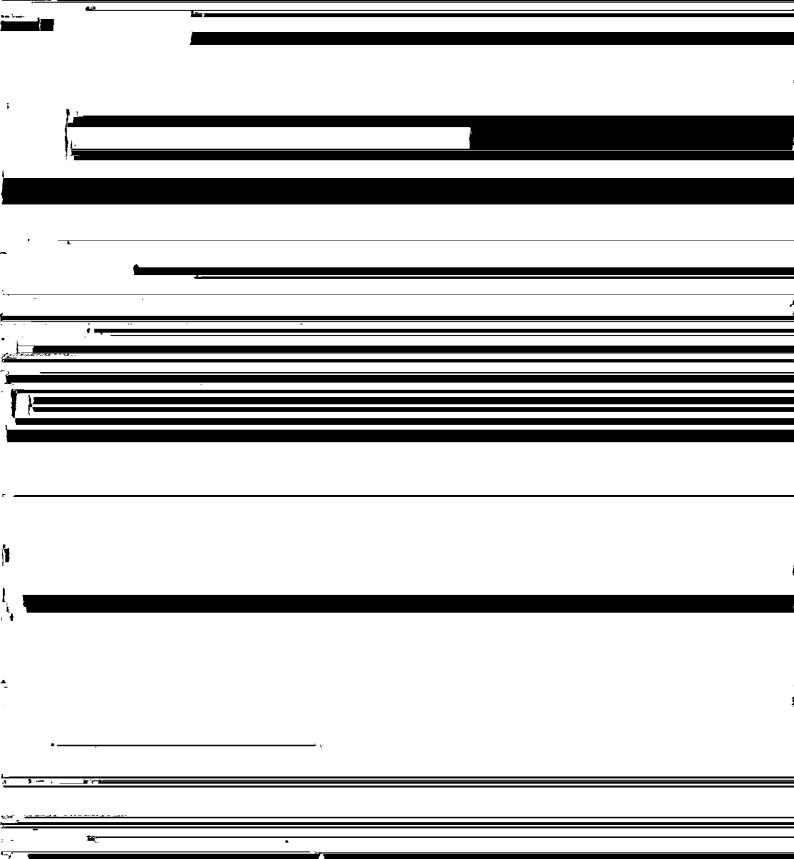
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solvent to remove oily residue components, and neutralized with alkali to form a water-soluble component layer and crude quinoline layer, which was rectified to isolate purified quinoline, isoquinoline and quinaldine with high yields. The oil layer, in which indole and neutral components such as methylnaphthalene are contained, was reacted with hydrochloric acid, producing solid indole oligomer, which was filtered out of the liquid-





tity of recrystallization solvent used increased. As the distillation conditions. A commercial plant based on the above-described diameter of solid indole crystals increased, the amount