

활성탄을 활용한 정제연료유의 물리화학적 변화 연구

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A Study of physicochemical changes for refined fuel using activated carbon.

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활성탄은 입자내 공극이 잘 발달된 무정형 탄소로써 흡착성 및 촉매성이 뛰어나 폐유를 연료로 전환하는 과정에 회분, 중금속 및 기타 이물질 제거에 우수한 효과를 나타내며 이러한 연구가 간헐적으로 진행되고 있다. 본 연구에서는 활성탄을 활용하여 이온정제유, 감압정제유, 재생연료유를 대상으로 흡착성 실험을 진행하였으며 물리적 및 화학적 성분 변화를 통해 활성탄이 정제연료유에 미치는 영향 및 분자체 작용에 대한 연구를 진행하였다.

Key words : Sorbent(흡착제), Refined fuel(정제연료유), Activated Carbon(활성탄), Molecular Sieve(분자체)

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염기도 조절에 의한 석면슬레이트 용융특성

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Melting Characteristics of Asbestos Cement Slate on Basicity Control

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Asbestos is the collective name for a group of naturally occurring minerals in their fibrous form and hydrous silicates of magnesium and a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. Asbestos has been used for a wide range of manufactured goods, because of its fiber strength and heat resistant properties. Nevertheless harmful of asbestos is quite serious. Exposure to airborne friable asbestos may result in a potential health risk because persons breathing the air may breathe in asbestos fibers. Continued exposure can increase the amount of fibers that remain in the lung. Fibers embedded in lung tissue over time may cause serious lung diseases including asbestosis, lung cancer.

In this paper, we carried out as fundamental study for dispose of asbestos cement slate safely and perfectly. Melting Temperature of asbestos need to more than 1,520°C and specially asbestos cement slate need more energy than that of pure asbestos. We need to decrease melting temperature of asbestos cement slate for economical efficiency. To the purpose, glass and bottom ash were chosen as additives for basicity control. we analyzed about properties of asbestos cements slate, melting characteristics on the additives ratio and temperature. We confirmed about harmlessness of melting slag through analysis of scanning electron microscope(SEM) and x-ray diffractometer(XRD).

Key words : Asbestos(석면), Asbestos cement slate(석면슬레이트), Asbestos melting(석면용융), Basicity(염기도)

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