

Used lubricating oil recovery process and treatment methods: A review

ABSTRACT

Used lubricating oil (ULO) is considered hazardous as it is able to cause pollution and affect the environment. The presence of degraded additives, contaminants, and by-products of degradation render ULO more toxic and harmful to health and environment than virgin base oils. Recovery of ULO generally comprises cleaning, drying, and adsorption in order to eliminate water, sludge, and impurities. As the ULO is one of the hazardous wastes generated in various industries, such as industrial and automotive, it should not be used or disposed of in ways that are harmful for the environment. Recovery of ULO carries out many advantages which includes lower environmental impact, higher energy saving and lower risks. The main objective of this paper was to thoroughly review various recovery process principles and treatment methods for ULO. Importance of ULO recycling and various techniques along with their limitations were also discussed. The significance of this study lies in reviewing the roles of adsorbent and adsorption reclamation processes of ULO and few promising adsorbents were earmarked for further study.