

FEEDSTOCK RECYCLING OF POLYURETHANE: A review

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Recent progress in the feedstock recycling of polyurethanes and polyurethanes composites are reviewed. Feedstock recycling of polyurethane is an attractive option to recycle the increasing amount of polyurethane wastes and respond to restrictions for waste disposal in a lot of countries. Many new technologies for feedstock recycling have come up in recent years, pyrolysis and glycolysis being the most important. These technologies open an emerging ,effective and economic route for recycling polyurethane rigid foams and composites. Glycolysis of polyurethanes is emerging as an economical option, though it requires more development in order to tolerate more contamination in recycled product. . Pyrolysis of polyurethanes is a cost-effective process to recover feedstocks for the petrochemical industry. Hydrolysis and hydrogenation methods can be employed to give fuels and raw materials for remanufacturing of Polyurethanes composites Current technologies can recover the energy to a large extent and can help reduce fossil fuel consumption. It is concluded that many of the polyurethane feedstock recycling method appears to be technically feasible and robust enough to guarantee further development in the future.

Keywords: Polyurethane, Feedstock recycling, glycolysis,pyrolysis, hydrogenation, hydrolysis.