

## METHOD DEVELOPMENT TO ISOLATE RECOVERABLE SOLVENTS FROM SPENT SOLVENT MIXTURES PRODUCED IN GLOVE MANUFACTURING INDUSTRY

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Solvent mixtures are used to produce crinkle patterns in the gloves, during dipping process in the supported rubber glove manufacturing industry. Toluene, Turpentine, Acetone and Acetic acid are mainly used as solvents for this process. Spent solvent mixtures can be contaminated with various chemicals, surfactants, rubber particles & other impurities that migrate to the solvent mixture during the dipping process. These solvents can also break down and react with each other or with one another. As a result, many kinds of organic impurities can be present in used solvent mixtures.

Because of the above reasons, solvent mixture can only be used for a limited time and then it has to be discarded. So the solvent mixture should be purified & recovered in order to reuse it. Since some of these organic compounds are toxic, they can't be discarded to the environment before any treatment. As a result, discarding used solvents has become a costly and a challenging issue of these industries. One solution to this problem is to recover the usable solvents from the used solvent mixtures.

Recoverable solvents can be obtained by fraction distillation method. According to our study that used Acetone/ Toluene/ Turpentine/ Acetic acid based used solvents the major recoverable solvent in the mixture are Toluene and Acetone. Others might have broken down to the other organic compounds like cyclic compounds & straight chain alkanes & also presented as many kinds of byproducts. Recoverable Toluene percentage is about 46 % of distillate & recoverable Acetone percentage is about 35.8 % of distillate.

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