

Applications and Extraction of Cashew Nut Shell Liquid from Cashew Nut Shell

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Abstract: CNSL has many applications such as friction linings, paints, laminating resins, rubber compounding resins, cashew cements, polyurethane based polymers, surfactants, epoxy resins, foundry chemicals, and intermediates for chemical industry. Liquid from Cashew Nut shell is generally extracted by three methods are mechanical, roasting and solvent extraction which contains oil of about 20 to 25%. Solvent extraction (expeller) process of oil extraction is more feasible. CNSL using solvent extraction with different solvents. For solvent Ethanol shows 1:3, 1:4 and 1:5 CNS to ethanol ratio the % yield 32 %, 35% and 37 % resp. As per observation ethanol is the best suitable for extraction of CNSL from the cashew nut shell. Ethanol can easily separate after extraction and has higher yield than other with low cost. Selected solvent should be easily separated from the CNSL and giving high yield operation with low cost. Size of cashew nut shell has influence on the recovery of oil and recovery of oil large size cashew nut shells is more than small size. By the Experimental analysis the moisture content of the shell at the time of oil extraction has a great influence on the extraction recovery of the oil. The average recovery of CNSL at shell moisture of 8-10 on wet basis was 80 – 85 %. The highest recovery of when the shell moisture content at 10 % wet basis. The ration of feed to solvent also important factor to be consider for extraction process which effect on the yield of CNSL. The optimum value for feed to solvent is 1:4 on which maximum yield for CNSL extraction. Here, we select the ethanol as a solvent that can easily recoverable, low cost and having low loss by vaporization. As petroleum ether flash at room temperature..

Keywords: Cashew Nut Shells Liquid (Oil), Solvent Extraction, Different Solvents Petroleum Ether and Ethanol, Moisture content, Shell Size and solvent to feed ratio

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