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Bio Industrial Hydraulic Oil with the Ability to be Used in Airplanes

Vegetable oils can also be used instead of conventional lubricants and are also biodegradable in the environment and return to nature in a short period of time.

HH, HL and HR base hydraulic oil, which can also be used in the aircraft hydraulic system, are examples of lubricants that can be produced from vegetable oils and used in the aerospace industry.

Castor and jatropha plants are among the best examples of plants whose oil can be used to produce hydraulic lubricants that can be used in passenger planes and fighters.

In this process, genes resistant to temperature, pressure and friction were identified in oil seeds and these genes were mutated by beta rays. and after the cell culture of new plants, the seeds of these plants have been oiled.

G4/102 is powdered from the seed by grinding, then this powder is placed in a bag made of linen fabric and the bag is placed in a Soxhlet machine. Oil extraction was done using formal hexane solvent for 4 hours at the boiling point of hexane, and finally a solution of oil and hexane solvent was obtained.

After finishing the process, the mixture of solvent and oil, which contains some suspended particles, is passed through a strainer to remove the existing impurities.

Separating the oil from the solvent based on the difference in their boiling point from the distillation method using the Jarkhan evaporator at a temperature of 90 c and a speed of 120 rpm was used. Finally, the pure oil obtained was weighed and the percentage of oil was calculated for the raw material, which was obtained as 35.2%. It comes

After the oiling stage, to increase the lifespan of the lubricant, we add 10% antioxidant to it, which is done by changing the gene of the sunflower plant.

This oil can be used in industries that require HH, HL and HR hydraulic lubricants, and it can also be used in aerospace industries.

