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STUDY OF TESTS ON FUEL FOR SI AND CI ENGINES



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FUEL PROPERTIES

Gravity

Flash Point

Viscosity

Cloud Point

Pour Point

Carbon-Residue Test

Ash Test



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Gravity

The gravity of petroleum fuel is a numerical value which serves as an index of the weight of a measured volume of this product

There are two scales generally used by petroleum engineers:

- Specific-gravity scale

- American Petroleum Institute gravity scale



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Flash Point

The flash point of an fuel is the temperature to which the oil must be heated in order to give off enough vapor to form a combustible mixture above the surface that will momentarily flash or burn when the vapor is brought into contact with a very small flame



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Viscosity

Viscosity is technically defined as the fluid friction of an oil

To put it more simply, it is the resistance an oil offers to flowing

Heavy-bodied oil is high in viscosity and pours or flows slowly



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Cloud Point

The cloud point is the temperature at which the separation of wax becomes visible in certain oils under prescribed testing conditions

When such oils are tested, the cloud point is slightly above the solidification point



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Pour Point

The pour point of an oil is the temperature at which the oil will just flow without disturbance when chilled



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Carbon-Residue Test

The purpose of the carbon-residue test is to study the carbon-forming properties of a fuel.



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Ash Test

The ash test is an extension of the carbon-residue test

If an unused oil leaves almost no ash, it is regarded as pure

The ash content is a percentage (by weight) of the residue after all carbon and all carbonaceous matter have been evaporated and burned