

Risks of Contaminated Diesel Training

B2B Mining – 10 November 2025

What are we going to cover?



Where Fuel comes from?

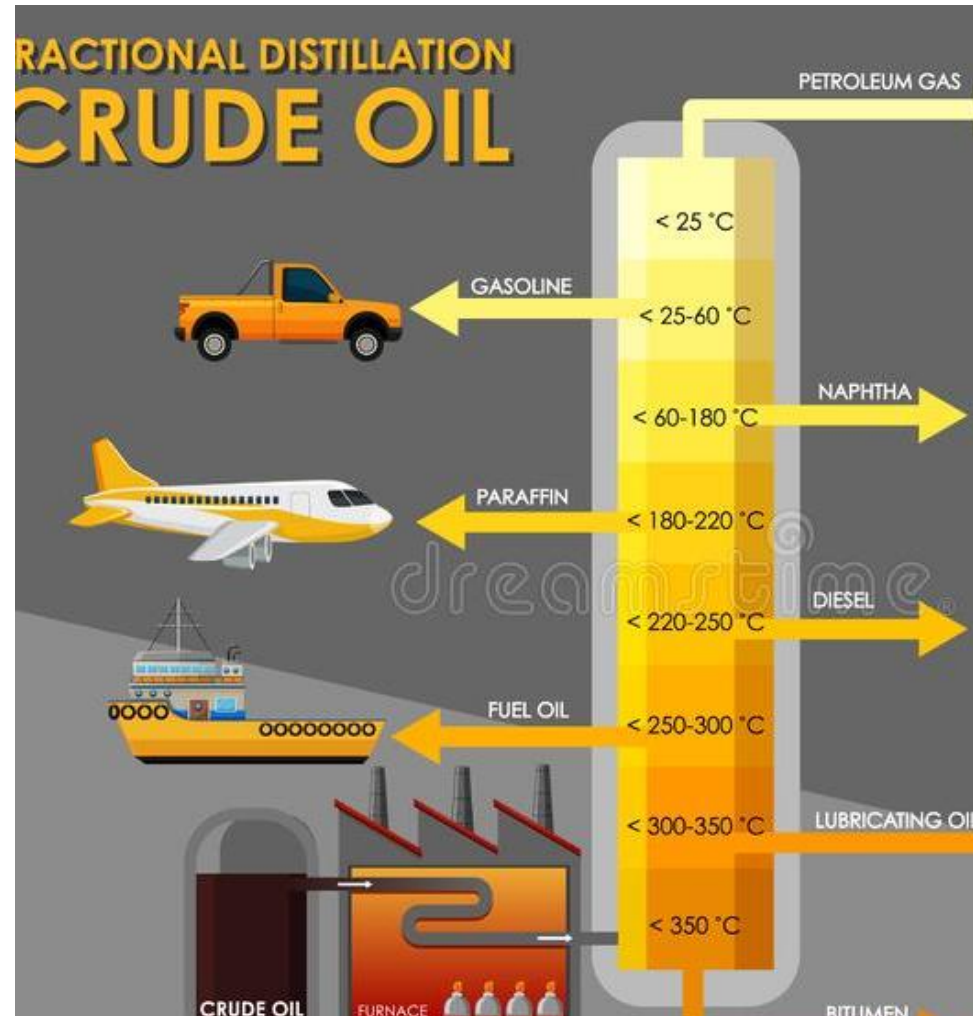
Diesel Doping

Effect of Diesel Doping with IP

Where Fuel & Illuminating Paraffin comes from?

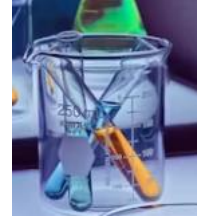
REFINERY OPERATIONS

- The crude oil is injected into the distillation column at high temperatures.
- This causes the crude to boil and evaporate.
- In the column, condensation and re-evaporation take place on a continuous basis (scrubbing) as the vapor ascends.
- Fractions with the required boiling range are continuously withdrawn from appropriate points in the column, the highest (most volatile) from the top and progressively heavier fractions at lower levels.



Diesel Doping with Illuminating Paraffin

- What is Diesel doping
 - Mixing Diesel with Illuminating Paraffin.
- Why people mix paraffin with Diesel?
 - Small quantity of IP is added to Diesel to increase volume.
 - Increase profit
- What is the impact of Diesel doping.
 - Diesel needs to comply to the SANS 342:2016 specification.
 - Doping affects the diesel parameters
- It is illegally & also wrong to mix paraffin with diesel.



Effects of Diesel Doping



- Illegally

- Mixing of IP with Diesel is considered as Tax Evasion – punishable by Law.
 - IP does not get charged certain levies (General Fuel Levy, Foad Accidental Fund, Carbon Fuel Levy)

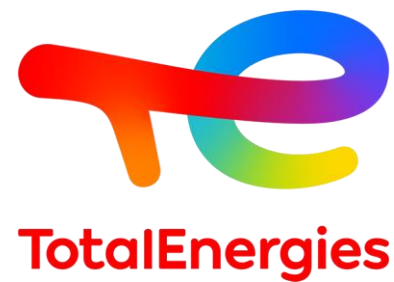
- Diesel Performance

Parameters	Values	Disadvantage
Density	Diesel – 800 kg/m ³ (min) IP – 750 kg/m ³ (min)	Reduces Power & Performance (Affects combustion, spray pattern) High Soot formation
Sulphur Content	50 ppm / 10 ppm	IP has high sulphur content (high emissions)
Lubricity, viscosity & Wear		IP has low lubricity compared to Diesel. More wear due to friction
Flash Point	Diesel – 55 Deg cel (min) IP – 38 Deg cel (min)	This will cause issue for storage
Cetane		IP reduces the Cetane – preignition

Physical Observation & Testing



- Observation
 - It is very tricky to tell if diesel is being mixed with IP.
 - Smell
 - Colour – lighter
- Testing/Analysis
 - Anthetix IP Test
 - Chromatography – mass spectroscopy



Thank you
Q&A