

CRITERION* General Guidelines for Diesel Washing in Hydrotreaters

PURPOSE:

To alleviate pressure drop and restore some catalytic activity by removing soft coke/polymers which have fouled catalyst. If the source of the pressure drop is inorganic foulants such as iron sulphide or if the coke is hard, diesel washing will not be effective.

1. Reduce all bed temperatures to below 205°C (400°F) with regular feedstock.
2. Charge a 50/50 blend of SR Diesel/LCO to the unit at maximum feed rates, using once through feed (rather than recycling).
3. Control H₂/HC at three times the H₂ consumption rate in order to ensure that enough hydrogen is available in the system to prevent any further coking. Operating at the lowest possible hydrogen recycle ratio is beneficial for SR Diesel/LCO wetting and dispersion. Discontinue recycle gas scrubber operation, if applicable, to minimise stripping of sulphur from catalyst.
4. Increase bed temperatures to 316°C (600°F) maximum (@14-28°C or 25-50°F/hr as limited by exotherms). Minimise H₂ circulation but ensure minimum H₂ recycle is being charged to the unit as some conversion may still occur at low temperatures on high pressure units.
5. Operate in this mode for 12-18 hours.

The unit should not be put on closed oil circulation until the following conditions are met:

- the oil has been flushed once through the reactors at 316°C (600°F) for an equivalent of two reactors or 4 hours, whichever is longer.
- fractionator bottoms product is clear of coke fines and particulate.

6. Cool reactors down to 121-149°C (250-300°F) while continuing to circulate SR Diesel/LCO. Do not remove the SR Diesel/LCO at the higher temperature since coking and drying of the catalyst may occur causing bed channeling.
7. Inventory with regular feedstock at maximum rates while displacing SR Diesel/LCO.
8. Increase temperature (@28°C or 50°F/hr max.) as required to meet product sulphur specification.

ADDITIONAL INFORMATION

All catalyst information supplied by CRITERION is considered accurate but is furnished with the express understanding that the customer receiving such information shall make its own assessments to determine suitability of such information for customer's particular purpose. All purchases of catalyst from CRITERION are subject to CRITERION's standard terms and conditions of sale (including CRITERION's product warranties) set forth in a sales proposal, sales contract, order acknowledgement, and/or bill of lading.

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