

The Offering

Catalyst Thrifting Test Package – testing to understand if a catalyst has been over specified or overloaded with precious metals through physical characterisation and ageing (durability testing). One catalyst sample will be tested, specified by the developer and catalyst supplier.

Testing Package

1. **First full characterisation suite** - to fully understand the performance of the three-way catalyst.

OSC	Oxygen Storage Capacity to aid in conversion of excess harmful emissions.
Fast light-off	Understand the emissions conversion, focusing on the cold-start conversions.
Slow light-off	Understand the emissions conversion, focusing on the tailpipe emissions when catalyst is at temperature.
Lambda sweep	Understand the catalyst conversion during differing operating conditions across a lambda window.
2. **Full Useful Life Testing (FUL)**
Each catalyst to be aged to the equivalent FUL based on Standard Road Cycle (SRC) data (E.G. 160,000km for EU 6).
3. **Second full characterisation suite to fully understand performance**
Understand the effect of FUL ageing and determine the degradation across the catalyst sample.
4. **Final Limit Catalyst Durability Testing - On Board Diagnostic Ageing (OBD)**
Age each catalyst sample to the required OBD target, each sample will have varying ageing due to the different PGM loadings.
5. **Third full characterisation suite to fully understand performance**
Understand the effect of OBD ageing and determine the degradation across the catalyst sample.
Ensure that the catalyst sample still passes emissions limits testing.
6. **Run Worldwide harmonized Light vehicles Test Cycles (WLTC) tests to ensure catalyst sample is continuing to pass emissions legislations**
Based on results from WLTC and ageing required to achieve OBD emissions and OSC targets it can be determined if the catalysts are overloaded with precious metals.

The above is an example of a basic Thrifting package but more advanced packages can be offered that include virtual simulation.