

ISO/TS 19713-1:2010-07 (E)

Road vehicles - Inlet air cleaning equipment for internal combustion engines and compressors - Part 1: Fractional efficiency testing with fine particles (0,3 μ m to 5 μ m optical diameter)

| Contents | | Page |
|------------------------------|--|-------------|
| Foreword | | iv |
| Introduction | | v |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Principle | 5 |
| 5 | Test equipment, accuracy and validation | 5 |
| 5.1 | Measurement accuracy | 5 |
| 5.2 | Test stand configuration | 5 |
| 5.3 | Test conditions | 13 |
| 5.4 | Validation | 14 |
| 5.5 | Reference air cleaner assemblies/air filter elements | 15 |
| 5.6 | Routine operating procedure | 15 |
| 6 | Fractional efficiency test | 15 |
| 6.1 | General | 15 |
| 6.2 | Test procedure | 16 |
| 7 | Calculations and data acceptance criteria | 17 |
| 7.1 | General | 17 |
| 7.2 | Symbols and subscripts | 17 |
| 7.3 | Test sequence | 18 |
| 7.4 | Correlation ratio | 20 |
| 7.5 | Penetration/fractional efficiency | 20 |
| 7.6 | Efficiency | 21 |
| 7.7 | Data reduction | 21 |
| 7.8 | Procedure for loading and fractional efficiency | 28 |
| 7.9 | Reporting results of loading tests | 28 |
| Annex A (informative) | Test report | 29 |
| Annex B (normative) | Poisson statistics | 31 |
| Annex C (normative) | Pressure loss data reduction | 33 |
| Annex D (informative) | Determination of maximum efficiency aerosol concentration | 34 |
| Annex E (normative) | Accuracy requirements, validation and routine operation | 35 |
| Annex F (normative) | Aerodynamic diameter | 38 |
| Annex G (normative) | Method to test efficiency aerosol for proper neutralization | 40 |

| | |
|--|-----------|
| Annex H (normative) Leakage | 47 |
| Annex I (informative) Aerosol isokinetic sampling | 49 |
| Bibliography | 52 |