

DIN EN ISO 4259-4:2022-09 (E)

Petroleum and related products - Precision of measurement methods and results - Part 4: Use of statistical control charts to validate 'in-statistical-control' status for the execution of a standard test method in a single laboratory (ISO 4259-4:2021)

Contents		Page
European foreword		3
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms, definitions, symbols and abbreviated terms	6
3.1	Specific terms and definitions	7
3.2	Symbols and abbreviated terms	7
4	Statistical control in the execution of a standard test method by a laboratory	8
4.1	General	8
4.2	Control chart description	9
4.2.1	General	9
4.2.2	I- and MR-charts	9
4.2.3	I-chart sensitivity enhancement strategy	9
4.2.4	In-statistical-control conditions	10
4.3	Control chart work process	10
4.3.1	General	10
4.3.2	Stage 1 of control chart work process	10
4.3.3	Stage 2 of control chart work process	14
4.4	QC material batch change transition	16
4.4.1	General	16
4.4.2	Procedure 1, concurrent testing	17
4.4.3	Procedure 2, Q-chart	17
4.4.4	Procedure 3, dynamically updated I-chart with EWMA	17
5	Guidance for insufficient variation or non-normal data	18
5.1	General requirement	18
5.2	How to deal with insufficient variation or non-normal data	18
5.2.1	Insufficient variation	18
5.2.2	Non-normal data	19
Annex A (informative) Details of the control chart work process		20
Annex B (normative) Check procedures		39
Bibliography		41