

# ISO 23581:2024-05 (E)

## Petroleum products and related products - Determination of kinematic viscosity - Method by Stabinger type viscometer

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Principle .....</b>	<b>2</b>
<b>5</b>	<b>Reagents and materials .....</b>	<b>2</b>
<b>6</b>	<b>Apparatus .....</b>	<b>3</b>
<b>7</b>	<b>Sampling and sample handling .....</b>	<b>5</b>
7.1	Sampling .....	5
7.2	Sample handling .....	5
7.2.1	General sample handling .....	5
7.2.2	Conditioning of residual fuel oils .....	5
<b>8</b>	<b>Calibration and verification .....</b>	<b>6</b>
8.1	General .....	6
8.2	Instrument .....	6
<b>9</b>	<b>Apparatus preparation .....</b>	<b>7</b>
<b>10</b>	<b>Procedure .....</b>	<b>7</b>
10.1	Measuring procedure .....	7
10.2	Manual filling and cleaning using syringes .....	8
10.3	Manual filling using sample displacement .....	8
10.4	Automatic filling and cleaning by a sample changer/sample handler .....	9
10.5	Procedure for temperature scanning .....	9
<b>11</b>	<b>Calculation .....</b>	<b>10</b>
11.1	Kinematic viscosity, dynamic viscosity and density .....	10
11.2	Viscosity index .....	10
11.3	Density extrapolation .....	10
<b>12</b>	<b>Expression of results .....</b>	<b>10</b>
<b>13</b>	<b>Precision .....</b>	<b>11</b>
13.1	Repeatability, $r$ .....	11
13.2	Reproducibility, $R$ .....	11
13.3	Bias .....	12
13.3.1	General .....	12
13.3.2	Degree of agreement between results by test method ASTM D7042 and test method ASTM D445 .....	13
13.4	Interlaboratory study .....	14
<b>14</b>	<b>Test report .....</b>	<b>15</b>
<b>Annex A (normative)</b>	<b>Calculation of acceptable tolerance zone (band) for determination of conformance with a reference material .....</b>	<b>17</b>
<b>Bibliography .....</b>		<b>18</b>