

# DIN EN ISO 16014-5:2019-09 (E)

## Plastics - Determination of average molecular weight and molecular weight distribution of polymers using size-exclusion chromatography - Part 5: Light-scattering method (ISO 16014-5:2019)

---

<b>Contents</b>		<b>Page</b>
<b>11</b>	<b>Expression of results .....</b>	<b>15</b>
<b>11.1</b>	<b>Calibration curve .....</b>	<b>15</b>
<b>11.1.1</b>	<b>General .....</b>	<b>15</b>
<b>11.1.2</b>	<b>Method A .....</b>	<b>15</b>
<b>11.1.3</b>	<b>Method B .....</b>	<b>15</b>
<b>11.2</b>	<b>Calculation of average molecular weight .....</b>	<b>17</b>
<b>11.3</b>	<b>Differential molecular weight distribution curve .....</b>	<b>17</b>
<b>11.4</b>	<b>Cumulative molecular weight distribution curve .....</b>	<b>17</b>
<b>12</b>	<b>Precision .....</b>	<b>18</b>
<b>13</b>	<b>Test report .....</b>	<b>18</b>
<b>13.1</b>	<b>General .....</b>	<b>18</b>
<b>13.2</b>	<b>Apparatus and measurement parameters .....</b>	<b>18</b>
<b>13.3</b>	<b>Calibration of the system .....</b>	<b>18</b>
<b>13.4</b>	<b>Calibration curve .....</b>	<b>19</b>
<b>13.5</b>	<b>Results .....</b>	<b>19</b>
<b>Annex A (informative) Interlaboratory test .....</b>		<b>20</b>
<b>A.1</b>	<b>General .....</b>	<b>20</b>
<b>A.2</b>	<b>Experimental conditions .....</b>	<b>20</b>
<b>A.3</b>	<b>Results of interlaboratory test .....</b>	<b>20</b>
<b>Annex B (informative) Information on light scattering .....</b>		<b>22</b>
<b>B.1</b>	<b>Principle of light scattering .....</b>	<b>22</b>
<b>B.2</b>	<b>Rayleigh ratio of solvents .....</b>	<b>23</b>
<b>B.3</b>	<b>Refractive index increment, <math>dn/dc</math> .....</b>	<b>23</b>
<b>B.4</b>	<b>Relation between radius of gyration <math>R_g</math> and molecular weight <math>M</math> .....</b>	<b>24</b>
<b>B.5</b>	<b>Refractive index of solvents .....</b>	<b>24</b>
<b>B.6</b>	<b>Effect of the second virial coefficient <math>A_2</math> on molecular weight .....</b>	<b>25</b>
<b>Annex C (informative) Calibration curve in low molecular weight range .....</b>		<b>26</b>
<b>Bibliography .....</b>		<b>28</b>