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**Rubber compounds, raw rubbers  
and compounding materials — Short  
terms for properties reported in  
certificates of analysis**

*Mélanges de caoutchouc, caoutchoucs bruts et ingrédients de  
mélange — Noms courts pour les propriétés consignées dans les  
certificats d'analyse*

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Published in Switzerland

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ISO 13507 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

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# Rubber compounds, raw rubbers and compounding materials — Short terms for properties reported in certificates of analysis

## 1 Scope

This International Standard provides a list of short terms for analytical characteristics to be used in certificates of analysis for rubber compounds, raw rubbers and compounding materials.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1

#### common industrial term

one of the usual terms used to describe a characteristic

### 2.2

#### standard short term for certificate of analysis

term for a characteristic as written in the certificate of analysis

## 3 Short terms for analytical characteristics

Table 1 provides a list of the short-terms for analytical characteristics which shall be used in certificates of analysis for rubber compounds, raw rubbers and compounding materials.

**Table 1 — Short terms for analytical characteristics**

| Common industrial term  | Standard short term for certificates of analysis | Unit        |
|---|--|-------------|
| A/O 2246 <sup>a</sup>   | A/O 2246   | %           |
| Acid number   | Acid number                                      | mg KOH/g    |
| Active product content  | Active product                                   | % (by mass) |
| Additive content  | Additive   | % (by mass) |
| 4 Aminodiphenylamine content  | 4ADPA content                                    | % (by mass) |
| Aggregate size distribution (ASD): average aggregate diameter   | $D_w$  | nm          |
| Aggregate size distribution (ASD): geometric mean aggregate mass  | $X_g$  | nm          |
| Aggregate size distribution (ASD): most frequent diameter occurrence  | $D_{mode}$                                       | nm          |
| Alkalinity (of latex)   | Alkalinity (of latex)                            | % ammonia   |
| Aluminium oxide content   | Al <sub>2</sub> O <sub>3</sub> content           | % (by mass) |
| <sup>a</sup> Applicable to latex.<br><sup>b</sup> 1 mPa·s = 1 cP.<br><sup>c</sup> Hexadecyl-trimethyl-ammonium bromide (IUPAC name).<br><sup>d</sup> 1 mN/m = 1 dyn/cm. |  |             |

Table 1 (continued)

| Common industrial term  | Standard short term for certificates of analysis | Unit                              |
|---|--|-----------------------------------|
| Aluminium content   | Al content                                       | % (by mass)                       |
| Amine content   | Amine content                                    | % (by mass)                       |
| Ammonia content in latex  | NH <sub>3</sub> content                          | % (by mass)                       |
| Amount of matter insoluble in ...   | Matter insoluble in ...                          | % (by mass)                       |
| Amount of matter soluble in ...   | Matter soluble in ...                            | % (by mass)                       |
| Aniline point   | Aniline point                                    | °C                                |
| Apparent Brookfield viscosity   | Brookfield viscosity                             | mPa·s <sup>b</sup>                |
| Aromatic carbon content   | CA content                                       | % (by mass)                       |
| Aromatic content  | Aromatic content                                 | % (by mass)                       |
| Asbestos content  | Asbestos content                                 | % (by mass)                       |
| Ash   | Ash at ... °C                                    | % (by mass)                       |
| Assay of ...  | Assay of ...                                     | % (by mass)                       |
| Bay region hydrogen content   | H <sub>Bay</sub>                                 | %                                 |
| Bound-styrene content   | Bound-styrene content                            | % (by mass)                       |
| Boric acid content  | Boric acid                                       | %                                 |
| Brunauer, Emmett and Teller (BET) nitrogen surface area (NSA)   | NSA  | m <sup>2</sup> /g                 |
| Brunauer, Emmett and Teller (BET) statistical thickness surface area (STSA)   | STSA   | m <sup>2</sup> /g                 |
| Bulk density  | Bulk density                                     | kg/l or g/ml or g/cm <sup>3</sup> |
| Butylated hydroxyanisole <sup>a</sup>   | BHA  | %                                 |
| Butylated hydroxytoluene <sup>a</sup>   | BHT  | %                                 |
| Cadmium content   | Cd content                                       | % (by mass)                       |
| Calcium content   | Ca content                                       | % (by mass)                       |
| Calcium carbonate content   | CaCO <sub>3</sub> content                        | % (by mass)                       |
| Carbon disulfide content  | CS <sub>2</sub> content                          | % (by mass)                       |
| Carbonyl content  | Carbonyl content                                 | % (by mass)                       |
| Chlorine content  | Cl content                                       | % (by mass)                       |
| Chromium content  | Cr content                                       | % (by mass)                       |
| Cloud point   | Cloud point                                      | °C                                |
| Coagulum content in latex   | Coagulum   | % (by mass)                       |
| Cobalt content  | Co content                                       | % (by mass)                       |
| Combined-sulfur content   | Combined-sulfur content                          | % (by mass)                       |
| Copper content  | Cu content                                       | mg/kg                             |
| CTAB adsorption number (of carbon black)  | CTAB <sup>c</sup>                                | m <sup>2</sup> /g                 |
| Cyclohexylamine content   | Cyclohexylamine content                          | % (by mass)                       |
| Density at ... °C   | Density at ... °C                                | kg/l or g/ml or g/cm <sup>3</sup> |
| <sup>a</sup> Applicable to latex.<br><sup>b</sup> 1 mPa·s = 1 cP.<br><sup>c</sup> Hexadecyl-trimethyl-ammonium bromide (IUPAC name).<br><sup>d</sup> 1 mN/m = 1 dyn/cm. |  |                                   |

Table 1 (continued)

| Common industrial term  | Standard short term for certificates of analysis | Unit               |
|---|--|--------------------|
| Dicyclohexylamine content   | Dicyclohexylamine content                        | % (by mass)        |
| Diphenyl guanidine <sup>a</sup>   | DPG  | %                  |
| Diphenyl thiourea <sup>a</sup>  | DPTU   | %                  |
| Dipentamethylenethiuram tetrasulfide <sup>a</sup>   | DPTT   | %                  |
| Dirt content  | Dirt content                                     | % (by mass)        |
| DMSO extract  | DMSO extract                                     | % (by mass)        |
| Dropping point  | Dropping point                                   | —                  |
| Dry residue   | Dry residue                                      | % (by mass)        |
| Dry-rubber content <sup>a</sup>   | DRC  | % (by mass)        |
| Extractable-protein content   | EP content                                       | µg/dm <sup>2</sup> |
| Flash point (closed cup)  | Flash point (CC)                                 | °C                 |
| Flash point (open cup)  | Flash point (OC)                                 | °C                 |
| Free-amine content  | Free-amine content                               | % (by mass)        |
| Free-formaldehyde content (in resin, for example)   | Free-HCHO content                                | % (by mass)        |
| Free-phenol content (in resin, for example)   | Free-phenol content                              | % (by mass)        |
| Free-sulfur content   | Free-sulfur content                              | % (by mass)        |
| Freezing point  | Freezing point                                   | °C                 |
| Gel content   | Gel content                                      | %                  |
| Glass-transition temperature  | $T_g$  | °C                 |
| Halogen content   | Halogen content                                  | % (by mass)        |
| Heating loss at .... °C   | Heating loss at .... °C                          | % (by mass)        |
| Hydroxyl group content  | Hydroxyl group                                   | % (by mass)        |
| Hydrated-formaldehyde content   | HCHO content                                     | % (by mass)        |
| Ignition loss at .... °C  | Ignition loss at .... °C                         | % (by mass)        |
| Impurity content  | Impurity   | % (by mass)        |
| Individual pellet strength  | Pellet strength                                  | cN                 |
| Insoluble-sulfur content  | Insoluble-sulfur content                         | % (by mass)        |
| Iodine adsorption number  | Iodine number                                    | mg/g               |
| Iodine index  | Iodine index                                     | g/100 g            |
| Iron content  | Fe content                                       | % (by mass)        |
| Iron oxide content  | Fe <sub>2</sub> O <sub>3</sub> content           | % (by mass)        |
| Kinematic viscosity at .... °C  | Kinematic viscosity at .... °C                   | mm <sup>2</sup> /s |
| KOH number  | KOH number                                       | —                  |
| Lead content  | Pb content                                       | % (by mass)        |
| Magnesium content   | Mg content                                       | % (by mass)        |
| Magnesium oxide content   | MgO content                                      | % (by mass)        |
| <sup>a</sup> Applicable to latex.<br><sup>b</sup> 1 mPa·s = 1 cP.<br><sup>c</sup> Hexadecyl-trimethyl-ammonium bromide (IUPAC name).<br><sup>d</sup> 1 mN/m = 1 dyn/cm. |  |                    |

Table 1 (continued)

| Common industrial term  | Standard short term for certificates of analysis | Unit         |
|---|--|--------------|
| Manganese content   | Mn content                                       | mg/kg        |
| Mass-average molecular mass   | $M_w$  | g/mol        |
| Mechanical-stability time for latex   | MST  | s            |
| Melting point   | Melting point                                    | °C           |
| Mercaptobenzothiazole (MBT) content <sup>a</sup>  | MBT content                                      | % (by mass)  |
| Microstructure  | Microstructure                                   | %            |
| Moisture content  | Moisture content                                 | % (by mass)  |
| Molecular-mass distribution   | MWD  | g/mol        |
| Mooney viscosity  | ML(x+y) at .... °C                               | Mooney units |
| Naphthenic-carbon content   | NC content                                       | % (by mass)  |
| <i>N</i> -nitrosodibenzylamine <sup>a</sup>   | NDBzA content                                    | µg/kg        |
| <i>N</i> -nitrosodibutylamine <sup>a</sup>  | NDBA content                                     | µg/kg        |
| <i>N</i> -nitrosodiethylamine <sup>a</sup>  | NDEA content                                     | µg/kg        |
| <i>N</i> -nitrosodiisononylamine <sup>a</sup>   | NDiNA content                                    | µg/kg        |
| <i>N</i> -nitrosodimethylamine <sup>a</sup>   | NDMA content                                     | µg/kg        |
| <i>N</i> -nitrosodipropylamine <sup>a</sup>   | NDPA content                                     | µg/kg        |
| <i>N</i> -nitrosoethylphenylamine <sup>a</sup>  | NEPhA content                                    | µg/kg        |
| <i>N</i> -nitrosomethylethylamine <sup>a</sup>  | NMEA content                                     | µg/kg        |
| <i>N</i> -nitrosomethylphenylamine <sup>a</sup>   | NMPhA content                                    | µg/kg        |
| <i>N</i> -nitrosomorpholine <sup>a</sup>  | N-MOR content                                    | µg/kg        |
| <i>N</i> -nitrosopiperidine <sup>a</sup>  | N-PIP content                                    | µg/kg        |
| <i>N</i> -nitrosopyrrolidine <sup>a</sup>   | N-PYR content                                    | µg/kg        |
| Nickel content  | Ni content                                       | % (by mass)  |
| Nitrogen content  | N content  | % (by mass)  |
| Number-average molecular mass   | $M_n$  | g/mol        |
| Oil absorption number (of carbon black)   | OAN  | ml/100 g     |
| Oil absorption number of compressed sample  | COAN   | ml/100 g     |
| Organic-acid content  | Organic-acid content                             | % (by mass)  |
| Paraffinic-carbon content   | PC content                                       | % (by mass)  |
| Particle size distribution (PSD): mean diameter   | Mean diameter                                    | µm           |
| Particle size distribution: median diameter   | Median diameter                                  | µm           |
| pH  | pH   | pH units     |
| Phosphorus content  | P content  | % (by mass)  |
| Phthalimide content   | Phthalimide                                      | % (by mass)  |
| Plasticity number of unaged test pellet   | P0   | 1/100 mm     |
| Plasticity retention index  | PRI  | —            |
| <sup>a</sup> Applicable to latex.<br><sup>b</sup> 1 mPa·s = 1 cP.<br><sup>c</sup> Hexadecyl-trimethyl-ammonium bromide (IUPAC name).<br><sup>d</sup> 1 mN/m = 1 dyn/cm. |  |              |



Table 1 (continued)

| Common industrial term  | Standard short term for certificates of analysis | Unit   |
|---|--|--|
| Polar content   | Polar  | % (by mass)                                    |
| Polydispersity index  | PDI  | —  |
| Pour density  | Pour density                                     | g/ml or g/cm <sup>3</sup> or kg/m <sup>3</sup> |
| Pour point  | Pour point                                       | °C   |
| Rapid plasticity number of test pellet after ageing at 140 °C for 30 min  | P30  | 1/100 mm                                       |
| Refractive index at .... °C   | Refractive index at .... °C                      | —  |
| Rubber hydrocarbon content  | RHC  | % (by mass)                                    |
| Saponification number   | Saponification number                            | mg KOH/g                                       |
| Sieve residue at .... µm  | Sieve residue at .... µm                         | % (by mass)                                    |
| Silicon dioxide content   | SiO <sub>2</sub>                                 | % (by mass)                                    |
| Soap content  | Soap content                                     | % (by mass)                                    |
| Sodium carbonate content  | Na <sub>2</sub> CO <sub>3</sub> content          | % (by mass)                                    |
| Softening point   | Softening point                                  | °C   |
| Solidification point  | Solidification point                             | °C   |
| Soluble-sulfur content  | Soluble-sulfur content                           | % (by mass)                                    |
| Spectral transmittance of toluene extract   | Toluene transmittance                            | % (by mass)                                    |
| Surface tension   | Surface tension                                  | mN/m <sup>d</sup>                              |
| <i>tert</i> -Butylamine content   | <i>tert</i> -Butylamine content                  | % (by mass)                                    |
| Tetramethylthiuram disulfide  | TMTD   | mg/kg  |
| Tinting strength (of carbon black)  | Tinting strength                                 | %  |
| Total alkalinity (of latex)   | Total alkalinity (of latex)                      | % ammonia                                      |
| Total fatty acid content  | Total fatty acid content                         | % (by mass)                                    |
| Total protein content   | Total protein content                            | µg/dm <sup>2</sup>                             |
| Total solids content  | TSC  | % (by mass)                                    |
| Total sulfur content  | Total sulfur content                             | % (by mass)                                    |
| Unsaponifiable content  | Unsaponifiable content                           | % (by mass)                                    |
| Unsaturation rate   | Unsaturation rate                                | %  |
| Vicat softening point   | Vicat softening point                            | °C   |
| Volatile fatty acid number (of latex)   | VFA number                                       | % (by mass)                                    |
| Volatile-matter content at .... °C  | Volatile-matter content at .... °C               | % (by mass)                                    |
| Wingstay L <sup>a</sup>   | Wingstay L                                       | %  |
| Zinc content  | Zn content                                       | % (by mass)                                    |
| Zinc dibenzylthiocarbamate <sup>a</sup>   | ZBED   | %  |
| Zinc dibutylthiocarbamate <sup>a</sup>  | ZDBC   | %  |
| <sup>a</sup> Applicable to latex.<br><sup>b</sup> 1 mPa·s = 1 cP.<br><sup>c</sup> Hexadecyl-trimethyl-ammonium bromide (IUPAC name).<br><sup>d</sup> 1 mN/m = 1 dyn/cm. |  |  |