

## Adaptations of the standard physico-chemical testing requirements under REACH

Physico-chemical properties	Test not technically possible or unnecessary
<b>Melting/freezing point</b>	A study does not need to be conducted below a lower limit of -20 °C.
<b>Boiling point</b>	A study does not need to be conducted for: <ul style="list-style-type: none"> <li>– gases;</li> <li>– solids which either melt above 300 °C or decompose before boiling;</li> <li>– substances which decompose before boiling.</li> </ul>
<b>Relative density</b>	A study does not need to be conducted if: <ul style="list-style-type: none"> <li>– the substance is only stable in solution in a particular solvent and the solution density is similar to that of the solvent;</li> <li>– the substance is gaseous at room temperature.</li> </ul>
<b>Vapour pressure</b>	The study does not need to be conducted if the melting point is above 300 °C. Testing is also not required for chemicals with a standard boiling point of <30 °C.
<b>Water solubility</b>	The study does not need to be conducted if: <ul style="list-style-type: none"> <li>– the substance is hydrolytically unstable at pH 4, 7, 9;</li> <li>– the substance is readily oxidisable in water;</li> <li>– the substance is flammable in contact with water.</li> </ul> The test methods are not applicable to volatile substances.
<b>Partition coefficient n-octanol/water (<math>K_{ow}</math>)</b>	This data does not need to be determined if the substance is purely inorganic. The test can not be technically performed if: <ul style="list-style-type: none"> <li>– the substance decomposes;</li> <li>– the substance is a surface-active substance (as it interferes with partitioning);</li> <li>– the substance reacts violently during the performance of the test;</li> <li>– the substance does not sufficiently dissolve in water or in octanol;</li> <li>– it is not possible to obtain a sufficiently pure substance.</li> </ul>
<b>Flash point</b>	Testing does not need to be conducted for substances that are solids or gases at room temperature.
<b>Flammability</b>	The tests for flammability on contact with water and pyrophoricity properties can be waived based on a consideration of the structure and experience in handling and use of a substance. For these properties, gases do not need to be tested. The test of flammability is likely to be hazardous for highly sensitive or explosive solid substances. And pyrophoric solid substances should not be tested for this property.
<b>Explosive properties</b>	The tests for explosive properties can be waived based on a consideration of the structure. Gases do not need to be tested. Liquids do not need to be tested for sensitivity towards friction.
<b>Self-ignition temperature</b>	Testing should not be conducted for explosive or pyrophoric substances. Substances which do not need to be tested are: <ul style="list-style-type: none"> <li>– solid substances that melt at &lt;160 °C;</li> <li>– liquids with a flash point above 200 °C;</li> <li>– gases that have no flammable range in air.</li> </ul>
<b>Oxidising properties</b>	The tests for oxidising properties can be waived based on a consideration of the structure. Testing does not need to be carried out for: <ul style="list-style-type: none"> <li>– explosive or highly flammable solids substances;</li> <li>– organic substances without oxygen (O), fluorine (F) or chlorine (Cl);</li> <li>– organic substances with O, F or Cl atoms which are chemically bonded only to carbon;</li> <li>– inorganic substances without oxygen or halogens.</li> </ul>
<b>Granulometry</b>	The study does not need to be conducted if the substance is marketed or used in a non solid or non granular form.
<b>Stability in organic solvent</b>	The study does not need to be conducted if the substance is inorganic.
<b>Dissociation constant</b>	A study does not need to be conducted if: <ul style="list-style-type: none"> <li>– the substance is hydrolytically unstable or is readily oxidisable in water;</li> <li>– it is scientifically not possible to perform the test.</li> </ul>