# Plastics properties & chemical resistance

| | Low Density Polyethylene (LDPE) | High Density Polyethylene (HDPE) | Polypropylene (PP) | Polymethyl-pentene (OTHER) | Polystyrene (PS) |
|---|---|---|---|---|---|
| Max Temp: | 176°F (80°C) | 248°F (120°C) | 275°F (135°C) | 293°F (145°C) | 158°F (70°C) |
| Min Temp: | -58°F (-50°C) | -148°F (-100°C) | 32°F (0°C) | 32°F (0°C) | 32°F (0°C) |
| Autoclavable: | No | No | Yes | Yes | No |
| UV Resistance: | Poor | Poor | Poor | Poor | Good |
| Characteristics: | Translucent with excellent flexibility | Translucent and rigid | Translucent and rigid | Clear and rigid | Clear and rigid |
| | **Excellent resistance (no attack)** to dilute and concentrated Acids, Alcohols, Bases and Esters. | **Excellent resistance (no attack)** to dilute and concentrated Acids, Alcohols and Bases. | **Excellent resistance (no attack)** to dilute and concentrated Acids, Alcohols, Bases and Mineral Oils. | **Excellent resistance (no attack)** to dilute and concentrated Acids, Alcohols, Bases and Mineral Oils. | **Excellent resistance (no attack)** to dilute Acids, Alcohols and Mineral Oils. |
| | **Good resistance (minor attack)** to Aldehydes, Ketones and Vegetable Oils. | **Good resistance (minor attack)** to Aldehydes, Esters, Aliphatic and Aromatic Hydrocarbons, Ketones and Mineral and Vegetable Oils. | **Good resistance (minor attack)** to Aldehydes, Esters, Aliphatic Hydrocarbons, Ketones & Vegetable Oils. | **Good resistance (minor attack)** to Aldehydes, Esters, and Vegetable Oils. | **Good resistance (minor attack)** to Vegetable Oils. |
| | **Limited resistance (moderate attack)** suitable for short term use only) to Aliphatic & Aromatic Hydrocarbons, Mineral Oils and Oxidizing Agents. | **Limited resistance (moderate attack)** and suitable for short term use only) to Halogenated Hydrocarbons and Oxidizing Agents. | **Limited resistance (moderate attack)** and suitable for short term use only) to Aromatic and Halogenated Hydrocarbons and Oxidizing Agents. | **Limited resistance (moderate attack)** and suitable for short term use only) to Aliphatic and Aromatic Hydrocarbons, Ketones and Oxidizing Agents. | **Limited resistance (moderate attack)** and suitable for short term use only) to concentrated Acids. |
| | **Poor resistance and not recommended** for use with Halogenated Hydrocarbons. | | | **Poor resistance not recommended** for use with Halogenated Hydrocarbons. | **Poor resistance not recommended** for use with Aldehydes, Esters, Aliphatic, Aromatic and Halogenated Hydrocarbons, Ketones and Oxidizing Agents. |

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# Periodic Table of the Elements



| Period | Group 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | hydrogen 1 **H** 1.008 | | | | | | | | | | | | | | | | | helium 2 **He** 4.003 |
| 2 | lithium 3 **Li** 6.941 | beryllium 4 **Be** 9.0122 | | | | | | | | | | | boron 5 **B** 10.811 | carbon 6 **C** 12.011 | nitrogen 7 **N** 14.007 | oxygen 8 **O** 15.999 | fluorine 9 **F** 18.998 | neon 10 **Ne** 20.18 |
| 3 | sodium 11 **Na** 22.99 | magnesium 12 **Mg** 24.305 | | | | | | | | | | | aluminum 13 **Al** 26.982 | silicon 14 **Si** 28.086 | phosphorous 15 **P** 30.974 | sulphur 16 **S** 32.065 | chlorine 17 **Cl** 35.453 | argon 18 **Ar** 39.948 |
| 4 | potassium 19 **K** 39.098 | calcium 20 **Ca** 40.078 | scandium 21 **Sc** 44.956 | titanium 22 **Ti** 47.867 | vanadium 23 **V** 50.942 | chromium 24 **Cr** 51.996 | manganese 25 **Mn** 54.938 | iron 26 **Fe** 55.845 | cobalt 27 **Co** 55.933 | nickel 28 **Ni** 58.693 | copper 29 **Cu** 63.546 | zinc 30 **Zn** 65.38 | gallium 31 **Ga** 69.723 | germanium 32 **Ge** 72.64 | arsenic 33 **As** 74.922 | selenium 34 **Se** 78.96 | bromine 35 **Br** 79.904 | krypton 36 **Kr** 83.798 |
| 5 | rubidium 37 **Rb** 85.468 | strontium 38 **Sr** 87.62 | yttrium 39 **Y** 88.906 | zirconium 40 **Zr** 91.224 | niobium 41 **Nb** 92.906 | molybdenum 42 **Mo** 95.96 | technetium 43 **Tc** 98 | ruthenium 44 **Ru** 101.07 | rhodium 45 **Rh** 102.906 | palladium 46 **Pd** 106.42 | silver 47 **Ag** 107.868 | cadmium 48 **Cd** 112.411 | indium 49 **In** 114.818 | tin 50 **Sn** 118.71 | antimony 51 **Sb** 121.76 | tellurium 52 **Te** 127.6 | iodine 53 **I** 126.904 | xenon 54 **Xe** 131.293 |
| 6 | cesium 55 **Cs** 132.91 | barium 56 **Ba** 137.327 | lanthanum 57 **La** 138.905 | hafnium 72 **Hf** 178.49 | tantalum 73 **Ta** 180.948 | tungsten 74 **W** 183.84 | rhenium 75 **Re** 186.207 | osmium 76 **Os** 190.23 | iridium 77 **Ir** 192.217 | platinum 78 **Pt** 195.084 | gold 79 **Au** 196.967 | mercury 80 **Hg** 200.59 | thallium 81 **Tl** 204.383 | lead 82 **Pb** 207.2 | bismuth 83 **Bi** 208.98 | polonium 84 **Po** 209 | astatine 85 **At** 210 | radon 86 **Rn** 222 |
| 7 | francium 87 **Fr** 223 | radium 88 **Ra** 226 | actinium 89 **Ac** 227 | rutherfordium 104 **Rf** 267 | dubnium 105 **Db** 268 | seaborgium 106 **Sg** 271 | bohrium 107 **Bh** 272 | hassium 108 **Hs** 277 | meitnerium 109 **Mt** 276 | darmstadtium 110 **Ds** 281 | roentgenium 111 **Rg** 280 | copernicium 112 **Cn** 285 | nihonium 113 **Nh** 286 | flerovium 114 **Fl** 289 | moscovium 115 **Mc** 290 | livermorium 116 **Lv** 293 | tennessine 117 **Ts** 294 | oganesson 118 **Og** 294 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lanthanides | cerium 58 **Ce** 140.116 | praseodymium 59 **Pr** 140.908 | neodymium 60 **Nd** 144.242 | promethium 61 **Pm** 145 | samarium 62 **Sm** 150.36 | europium 63 **Eu** 151.964 | gadolinium 64 **Gd** 157.25 | terbium 65 **Tb** 158.925 | dysprosium 66 **Dy** 162.5 | holmium 67 **Ho** 164.93 | erbium 68 **Er** 167.259 | thulium 69 **Tm** 168.934 | ytterbium 70 **Yb** 173.054 | lutetium 71 **Lu** 174.967 |
| Actinides | thorium 90 **Th** 232.038 | protactinium 91 **Pa** 231.036 | uranium 92 **U** 238.029 | neptunium 93 **Np** 237 | plutonium 94 **Pu** 244 | americium 95 **Am** 243 | curium 96 **Cm** 247 | berkelium 97 **Bk** 247 | californium 98 **Cf** 251 | einsteinium 99 **Es** 252 | fermium 100 **Fm** 257 | mendelevium 101 **Md** 258 | nobelium 102 **No** 259 | lawrencium 103 **Lr** 262 |

C Solid
Hg Liquid
H Gas
Rf Unknown

Name: hydrogen
Atomic Number: 1
Symbol: H
Atomic Weight: 1.008

273 K
0° C
32° F

Alkali Metals
Alkaline Earth Metals
Transition Metals
Post Transition Metals
Metalloids
Non-metals
Noble Gases

METALS
NON-METALS