

## TAVOLA PERIODICA DEI NUCLEI ATOMICI

### configurazione dei livelli nucleari degli isotopi **PRASEODIMIO Z = 59-a**

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_p(\text{eV})}{p \cdot T_{1/2}}$
$\frac{972.266}{971.90}$	Pr <sub>59</sub> <sup>121</sup>	$\frac{120.95513}{120.955536}$	59n	2+0	8+0	18+0	14+0	13+1	1+2	0+0	$\frac{1.34462M}{ce 10.0ms}$
$\frac{983.962}{983.43}$	Pr <sub>59</sub> <sup>122</sup>	$\frac{121.95124}{121.95181}$	59n	2+0	8+0	18+0	15+0	12+2	0+2	0+0	$\frac{13.00M}{ce 500ms}$
$\frac{997.206}{996.95}$	Pr <sub>59</sub> <sup>123</sup>	$\frac{122.94569}{122.94596}$	59n	2+0	8+0	18+0	16+0	10+4	0+1	0+0	$\frac{10.00M}{ce 800ms}$
$\frac{1007.35}{1007.8}$	Pr <sub>59</sub> <sup>124</sup>	$\frac{123.94346}{123.94296}$	59n	2+0	8+0	18+0	17+0	8+5	0+1	0+0	$\frac{11.60M}{ce 1.20s}$
$\frac{1020.35}{1020.7}$	Pr <sub>59</sub> <sup>125</sup>	$\frac{124.93817}{124.93783}$	59n	2+0	8+0	18+0	19+0	5+6	0+1	0+0	$\frac{8.900M}{ce 3.30s}$
$\frac{1030.50}{1031.1}$	Pr <sub>59</sub> <sup>126</sup>	$\frac{125.93594}{125.93531}$	59n	2+0	8+0	18+0	20+0	3+7	0+1	0+0	$\frac{10.68M}{ce 3.14s}$
$\frac{1043.50}{1043.3}$	Pr <sub>59</sub> <sup>127</sup>	$\frac{126.93065}{126.93083}$	59n	2+0	8+0	18+0	22+0	0+8	0+1	0+0	$\frac{7.660M}{ce 4.20s}$
$\frac{1053.64}{1053.3}$	Pr <sub>59</sub> <sup>128</sup>	$\frac{127.92843}{127.92879}$	59n	2+0	8+0	18+0	21+1	0+8	0+1	0+0	$\frac{9.200M}{ce 2.84s}$
$\frac{1065.33}{1064.8}$	Pr <sub>59</sub> <sup>129</sup>	$\frac{128.92454}{128.92510}$	59n	2+0	8+0	18+0	18+3	1+8	1+0	0+0	$\frac{6.510M}{ce 30.0s}$
$\frac{1073.93}{1074.3}$	Pr <sub>59</sub> <sup>130</sup>	$\frac{129.92398}{129.92359}$	59n	2+0	8+0	18+0	19+3	0+8	0+1	0+0	$\frac{8.250M}{ce 40.0s}$
$\frac{1085.61}{1085.5}$	Pr <sub>59</sub> <sup>131</sup>	$\frac{130.92010}{130.92026}$	59n	2+0	8+0	18+0	16+5	1+8	1+0	0+0	$\frac{5.410M}{ce 1.51m}$
$\frac{1094.21}{1094.5}$	Pr <sub>59</sub> <sup>132</sup>	$\frac{131.91953}{131.91926}$	59n	2+0	8+0	18+0	17+5	0+8	0+1	0+0	$\frac{7.260M}{ce 1.60m}$
$\frac{1104.92}{1105.3}$	Pr <sub>59</sub> <sup>133</sup>	$\frac{132.91670}{132.916331}$	59n	2+0	8+0	18+0	14+9	1+2	1+4	0+0	$\frac{4.486M}{ce 6.50m}$
$\frac{1113.19}{1113.9}$	Pr <sub>59</sub> <sup>134</sup>	$\frac{133.91649}{133.91571}$	59n	2+0	8+0	18+0	14+7	0+9	1+0	0+0	$\frac{6.320M}{ce 11.0m}$
$\frac{1124.64}{1124.4}$	Pr <sub>59</sub> <sup>135</sup>	$\frac{134.91286}{134.913112}$	59n	2+0	8+0	18+0	14+8	0+8	0+1	0+0	$\frac{3.689M}{ce 24.0m}$
$\frac{1133.48}{1132.9}$	Pr <sub>59</sub> <sup>136</sup>	$\frac{135.91204}{135.912692}$	59n	2+0	8+0	18+0	12+9	0+9	1+0	0+0	$\frac{5.145M}{ce 13.1m}$

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_p(\text{eV})}{P-T_{1/2}}$
$\frac{1142.07}{1142.8}$	Pr <sub>59</sub> <sup>137</sup>	$\frac{136.91148}{136.910705}$	59n	2+0	8+0	18+0	11+10	1+8	0+1	0+0	$\frac{2.705M}{ce 1.28h}$
$\frac{1150.67}{1150.8}$	Pr <sub>59</sub> <sup>138</sup>	$\frac{137.91091}{137.910755}$	59n	2+0	8+0	18+0	10+11	0+8	1+1	0+0	$\frac{4.437M}{ce 1.45m}$
$\frac{1161.06}{1160.6}$	Pr <sub>59</sub> <sup>139</sup>	$\frac{138.90842}{138.908938}$	59n	2+0	8+0	18+0	8+12	1+9	1+0	0+0	$\frac{2.129M}{ce 4.41h}$
$\frac{1168.35}{1168.5}$	Pr <sub>59</sub> <sup>140</sup>	$\frac{139.90926}{139.909076}$	59n	2+0	8+0	18+0	8+12	0+10	1+0	0+0	$\frac{3.388M}{ce 3.39m}$
$\frac{1177.19}{1177.9}$	Pr <sub>59</sub> <sup>141</sup>	$\frac{140.90843}{140.907653}$	59n	2+0	8+0	18+0	8+12	0+11	0+0	0+0	<b>st</b>
$\frac{1184.48}{1183.8}$	Pr <sub>59</sub> <sup>142</sup>	$\frac{141.90927}{141.910045}$	59n	2+0	8+0	18+0	6+13	1+11	0+0	0+0	$\frac{2.1616M}{\beta^- 19.12h}$
$\frac{1191.77}{1191.1}$	Pr <sub>59</sub> <sup>143</sup>	$\frac{142.91011}{142.910817}$	59n	2+0	8+0	18+0	6+13	0+12	0+0	0+0	$\frac{934.1K}{\beta^- 13.57d}$
$\frac{1197.51}{1196.9}$	Pr <sub>59</sub> <sup>144</sup>	$\frac{143.91262}{143.913305}$	59n	2+0	8+0	18+0	4+14	0+12	1+0	0+0	$\frac{2.9974M}{\beta^- 17.28m}$
$\frac{1203.26}{1203.8}$	Pr <sub>59</sub> <sup>145</sup>	$\frac{144.91511}{144.914512}$	59n	2+0	8+0	18+0	4+14	0+12	0+1	0+0	$\frac{1.805M}{\beta^- 5.984h}$
$\frac{1209.00}{1209.0}$	Pr <sub>59</sub> <sup>146</sup>	$\frac{145.91750}{145.91764}$	59n	2+0	8+0	18+0	2+15	0+12	1+1	0+0	$\frac{4.240M}{\beta^- 24.15m}$
$\frac{1216.28}{1215.8}$	Pr <sub>59</sub> <sup>147</sup>	$\frac{146.91846}{146.918996}$	59n	2+0	8+0	18+0	0+16	1+12	1+1	0+0	$\frac{2.702M}{\beta^- 13.4m}$
$\frac{1220.48}{1220.9}$	Pr <sub>59</sub> <sup>148</sup>	$\frac{147.92262}{147.922135}$	59n	2+0	8+0	18+0	0+16	0+12	1+2	0+0	$\frac{4.872M}{\beta^- 2.29m}$
$\frac{1227.76}{1227.5}$	Pr <sub>59</sub> <sup>149</sup>	$\frac{148.92346}{148.92372}$	59n	2+0	8+0	16+1	0+16	1+12	1+2	0+0	$\frac{3.335M}{\beta^- 2.26m}$
$\frac{1233.51}{1232.8}$	Pr <sub>59</sub> <sup>150</sup>	$\frac{149.92596}{149.926673}$	59n	2+0	8+0	16+1	0+16	1+12	0+3	0+0	$\frac{5.384M}{\beta^- 6.19s}$
$\frac{1239.24}{1239.4}$	Pr <sub>59</sub> <sup>151</sup>	$\frac{150.92847}{150.928319}$	59n	2+0	8+0	14+2	0+16	1+12	1+3	0+0	$\frac{4.166M}{\beta^- 18.90s}$
$\frac{1244.98}{1244.5}$	Pr <sub>59</sub> <sup>152</sup>	$\frac{151.93097}{151.93150}$	59n	2+0	8+0	14+2	0+16	1+12	0+4	0+0	$\frac{6.390M}{\beta^- 3.57s}$

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_p(\text{eV})}{p \cdot T_{1/2}}$
$\frac{1250.72}{1250.4}$	Pr <sub>59</sub> <sup>153</sup>	$\frac{152.93348}{152.93384}$	59n	2+0	8+0	12+3	0+16	1+12	1+4	0+0	$\frac{5.760M}{\beta^- 4.28s}$
$\frac{1255.52}{1255.0}$	Pr <sub>59</sub> <sup>154</sup>	$\frac{153.93699}{153.93752}$	59n	2+0	8+0	10+4	0+16	1+12	1+4	1+0	$\frac{7.490M}{\beta^- 2.30s}$
$\frac{1260.33}{1260.7}$	Pr <sub>59</sub> <sup>155</sup>	$\frac{154.94049}{154.94012}$	59n	2+0	8+0	10+4	0+16	1+12	1+4	0+1	$\frac{6.700M}{\beta^- 1s}$
$\frac{1264.52}{1264.9}$	Pr <sub>59</sub> <sup>156</sup>	$\frac{155.94466}{155.94427}$	59n	2+0	8+0	10+4	0+16	0+12	1+5	0+1	$\frac{8.600M}{\beta^- 500ms}$
$\frac{1270.26}{1270.0}$	Pr <sub>59</sub> <sup>157</sup>	$\frac{156.94716}{156.94743}$	59n	2+0	8+0	10+4	0+16	0+12	0+6	0+1	$\frac{7.800M}{\beta^- 300ms}$
$\frac{1274.45}{1273.8}$	Pr <sub>59</sub> <sup>158</sup>	$\frac{157.95133}{157.95198}$	59n	2+0	8+0	8+5	0+16	1+11	0+7	0+1	$\frac{9.700M}{\beta^- 200ms}$
$\frac{1278.64}{1278.6}$	Pr <sub>59</sub> <sup>159</sup>	$\frac{158.95549}{158.95550}$	59n	2+0	8+0	8+5	0+16	0+11	0+8	0+1	$\frac{8.800M}{\beta^- 100ms}$
$\frac{1282.83}{-}$	Pr <sub>59</sub> <sup>160</sup>	$\frac{159.95966}{-}$	59n	2+0	8+0	6+6	0+16	1+10	0+9	0+1	$\frac{9.070M}{\beta^- 100ms}$
$\frac{1288.56}{-}$	Pr <sub>59</sub> <sup>161</sup>	$\frac{160.96217}{-}$	59n	2+0	8+0	4+7	0+16	1+10	1+9	0+1	$\frac{6.940M}{\beta^-}$
$\frac{1292.75}{-}$	Pr <sub>59</sub> <sup>162</sup>	$\frac{161.96634}{-}$	59n	2+0	8+0	4+7	0+16	0+10	1+10	0+1	$\frac{6.680M}{\beta^-}$

$E_c(\text{MeV})$  = valore calcolato dell'energia di legame

$E_s(\text{MeV})$  = valore sperimentale dell'energia di legame

$m_c$  = valore calcolato della massa atomica

$m_s$  = valore sperimentale della massa atomica

$n$  = numero di neutroni centrali attivi

1-7 = numero quantico associato al livello

$p + d$  = (numero di protoni) + (numero di deutoni) in orbita

$p \cdot T_{1/2}$  = particella emessa – periodo di dimezzamento

$E_p(\text{eV})$  = energia della particella emessa