

TAVOLA PERIODICA DEI NUCLEI ATOMICI

configurazione dei livelli nucleari degli isotopi **NETTUNIO Z = 93-a**

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa | $\frac{m_c}{m_s}$ | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | $\frac{E_p(\text{eV})}{P-T_{1/2}}$ |
|---|---------------------------------|-------------------------------|-----|-----|-----|------|------|------|------|-----|------------------------------------|
| $\frac{1641.79}{-}$ | Np ₉₃ ²¹⁶ | $\frac{216.03098}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 32+0 | 1+20 | 1+10 | 1+0 | — |
| $\frac{1650.16}{-}$ | Np ₉₃ ²¹⁷ | $\frac{217.03066}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 32+0 | 0+21 | 1+10 | 1+0 | — |
| $\frac{1656.65}{-}$ | Np ₉₃ ²¹⁸ | $\frac{218.03236}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 32+0 | 0+21 | 0+11 | 1+0 | — |
| $\frac{1665.01}{-}$ | Np ₉₃ ²¹⁹ | $\frac{219.03205}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 30+1 | 1+21 | 0+11 | 1+0 | — |
| $\frac{1672.25}{-}$ | Np ₉₃ ²²⁰ | $\frac{220.03294}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 30+1 | 0+22 | 1+10 | 0+1 | — |
| $\frac{1680.62}{-}$ | Np ₉₃ ²²¹ | $\frac{221.03262}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 28+2 | 1+22 | 1+10 | 0+1 | — |
| $\frac{1687.11}{-}$ | Np ₉₃ ²²² | $\frac{222.03431}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 28+2 | 1+22 | 0+11 | 0+1 | — |
| $\frac{1696.61}{-}$ | Np ₉₃ ²²³ | $\frac{223.03278}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 26+3 | 0+23 | 1+11 | 1+0 | — |
| $\frac{1703.10}{-}$ | Np ₉₃ ²²⁴ | $\frac{224.03448}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 26+3 | 0+23 | 0+12 | 1+0 | — |
| $\frac{1711.46}{1711.7}$ | Np ₉₃ ²²⁵ | $\frac{225.03417}{225.03391}$ | 93n | 2+0 | 8+0 | 18+0 | 24+4 | 1+23 | 0+12 | 1+0 | $\frac{8.790M}{\alpha 3ms}$ |
| $\frac{1718.70}{1718.6}$ | Np ₉₃ ²²⁶ | $\frac{226.03506}{226.03515}$ | 93n | 2+0 | 8+0 | 18+0 | 24+4 | 0+24 | 1+11 | 0+1 | $\frac{8.200M}{\alpha 35.0ms}$ |
| $\frac{1727.07}{1726.9}$ | Np ₉₃ ²²⁷ | $\frac{227.03474}{227.03496}$ | 93n | 2+0 | 8+0 | 18+0 | 22+5 | 1+24 | 1+11 | 0+1 | $\frac{7.816M}{\alpha 0.51s}$ |
| $\frac{1733.56}{1733.8}$ | Np ₉₃ ²²⁸ | $\frac{228.03644}{228.03618}$ | 93n | 2+0 | 8+0 | 18+0 | 22+5 | 1+24 | 0+12 | 0+1 | $\frac{4.370M}{ce 61.4s}$ |
| $\frac{1741.93}{1741.8}$ | Np ₉₃ ²²⁹ | $\frac{229.03612}{229.03626}$ | 93n | 2+0 | 8+0 | 18+0 | 22+5 | 0+25 | 0+12 | 0+1 | $\frac{7.010M}{ce 4.0m}$ |
| $\frac{1748.41}{1748.4}$ | Np ₉₃ ²³⁰ | $\frac{230.03783}{230.03783}$ | 93n | 2+0 | 8+0 | 18+0 | 20+6 | 0+25 | 1+12 | 0+1 | $\frac{3.620M}{ce 4.60m}$ |
| $\frac{1756.03}{1756.1}$ | Np ₉₃ ²³¹ | $\frac{231.03831}{231.03825}$ | 93n | 2+0 | 8+0 | 18+0 | 18+7 | 0+25 | 1+13 | 1+0 | $\frac{1.820M}{ce 48.8m}$ |
| $\frac{1761.78}{1762.4}$ | Np ₉₃ ²³² | $\frac{232.04080}{232.04011}$ | 93n | 2+0 | 8+0 | 18+0 | 18+7 | 1+24 | 0+15 | 0+0 | $\frac{2.750M}{ce 14.7m}$ |

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa | $\frac{m_c}{m_s}$ | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | $\frac{E_p(\text{eV})}{p \cdot T_{1/2}}$ |
|---|---------------------------------|--------------------------------|-----|-----|-----|------|-------|------|------|-----|---|
| $\frac{1770.15}{1769.9}$ | Np ₉₃ ²³³ | $\frac{233.04048}{233.04074}$ | 93n | 2+0 | 8+0 | 18+0 | 18+7 | 0+25 | 0+15 | 0+0 | $\frac{5.630M}{\alpha 36.2m}$ |
| $\frac{1776.64}{1776.0}$ | Np ₉₃ ²³⁴ | $\frac{234.04218}{234.042895}$ | 93n | 2+0 | 8+0 | 18+0 | 16+8 | 0+25 | 1+15 | 0+0 | $\frac{1.810M}{ce 4.40d}$ |
| $\frac{1783.13}{1783.0}$ | Np ₉₃ ²³⁵ | $\frac{235.04388}{235.044063}$ | 93n | 2+0 | 8+0 | 18+0 | 16+8 | 0+25 | 0+16 | 0+0 | $\frac{124.0K}{ce 396.1d}$ |
| $\frac{1789.61}{1788.7}$ | Np ₉₃ ²³⁶ | $\frac{236.04559}{236.04657}$ | 93n | 2+0 | 8+0 | 18+0 | 14+9 | 0+25 | 1+16 | 0+0 | $\frac{930.0K}{ce 153 \cdot 10^3 a}$ |
| $\frac{1796.11}{1795.3}$ | Np ₉₃ ²³⁷ | $\frac{237.04727}{237.048173}$ | 93n | 2+0 | 8+0 | 18+0 | 14+9 | 0+25 | 0+17 | 0+0 | $\frac{4.9582M}{\alpha 2.144 \cdot 10^6 a}$ |
| $\frac{1800.72}{1800.8}$ | Np ₉₃ ²³⁸ | $\frac{238.05099}{238.050946}$ | 93n | 2+0 | 8+0 | 18+0 | 12+10 | 1+24 | 0+18 | 0+0 | $\frac{1.2915M}{\beta^- 2.117d}$ |
| $\frac{1807.20}{1807.0}$ | Np ₉₃ ²³⁹ | $\frac{239.05270}{239.052939}$ | 93n | 2+0 | 8+0 | 18+0 | 10+11 | 1+24 | 1+18 | 0+0 | $\frac{722.5K}{\beta^- 2.356d}$ |
| $\frac{1811.81}{1812.0}$ | Np ₉₃ ²⁴⁰ | $\frac{240.05641}{240.056162}$ | 93n | 2+0 | 8+0 | 18+0 | 10+11 | 0+24 | 1+19 | 0+0 | $\frac{2.188M}{\beta^- 61.9m}$ |
| $\frac{1818.31}{1818.2}$ | Np ₉₃ ²⁴¹ | $\frac{241.05810}{241.05825}$ | 93n | 2+0 | 8+0 | 18+0 | 10+11 | 0+24 | 0+20 | 0+0 | $\frac{1.310M}{\beta^- 13.9m}$ |
| $\frac{1822.92}{1823.08}$ | Np ₉₃ ²⁴² | $\frac{242.06181}{242.06164}$ | 93n | 2+0 | 8+0 | 18+0 | 8+12 | 1+23 | 0+21 | 0+0 | $\frac{2.700M}{\beta^- 2.20m}$ |
| $\frac{1829.02}{1828.7}$ | Np ₉₃ ²⁴³ | $\frac{243.06393}{243.06428}$ | 93n | 2+0 | 8+0 | 18+0 | 8+12 | 0+24 | 0+20 | 0+1 | $\frac{2.120M}{\beta^- 1.85m}$ |
| $\frac{1833.63}{1833.4}$ | Np ₉₃ ²⁴⁴ | $\frac{244.06765}{244.06785}$ | 93n | 2+0 | 8+0 | 18+0 | 6+13 | 1+23 | 0+21 | 0+1 | $\frac{3.400M}{\beta^- 2.29m}$ |
| $\frac{1838.24}{-}$ | Np ₉₃ ²⁴⁵ | $\frac{245.07136}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 6+13 | 0+23 | 0+22 | 0+1 | $\frac{2.800M}{\beta^-}$ |
| $\frac{1842.85}{-}$ | Np ₉₃ ²⁴⁶ | $\frac{246.07508}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 4+14 | 1+22 | 0+23 | 0+1 | $\frac{4.532M}{\beta^-}$ |
| $\frac{1847.46}{-}$ | Np ₉₃ ²⁴⁷ | $\frac{247.07880}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 4+14 | 0+22 | 0+24 | 0+1 | $\frac{4.422M}{\beta^-}$ |
| $\frac{1852.07}{-}$ | Np ₉₃ ²⁴⁸ | $\frac{248.08251}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 2+15 | 1+21 | 0+25 | 0+1 | $\frac{5.312M}{\beta^-}$ |

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa | $\frac{m_c}{m_s}$ | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | $\frac{E_p(\text{eV})}{p - T_{1/2}}$ |
|---|---------------------------------|-----------------------|-----|-----|-----|------|------|------|------|-----|--------------------------------------|
| $\frac{1856.68}{-}$ | Np ₉₃ ²⁴⁹ | $\frac{249.08623}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 2+15 | 0+21 | 0+26 | 0+1 | $\frac{5.322M}{\beta^-}$ |
| $\frac{1863.17}{-}$ | Np ₉₃ ²⁵⁰ | $\frac{250.08792}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 0+16 | 0+21 | 1+26 | 0+1 | $\frac{3.452M}{\beta^-}$ |
| $\frac{1865.90}{-}$ | Np ₉₃ ²⁵¹ | $\frac{251.09366}{-}$ | 93n | 2+0 | 8+0 | 18+0 | 0+16 | 0+20 | 0+28 | 0+1 | $\frac{5.332M}{\beta^-}$ |

$E_c(\text{MeV})$ = 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

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

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