

Vol. 19: Nuclear States from Charged Particle Reactions

Subvol. C: Tables of Excitations of Proton- and Neutron-Rich Unstable Nuclei

1-Hydrogen

H-4
H-5

2-Helium

He-4
He-5
He-6
He-7
He-8
He-9
He-10

3-Lithium

Li-4
Li-5
Li-10
Li-11

4-Beryllium

Be-5
Be-6
Be-7
Be-8
Be-12
Be-13
Be-14

5-Boron

B-7
B-15
B-16
B-17

6-Carbon

C-9
C-10
C-18
C-19
C-20

7-Nitrogen

N-11
N-12
N-18
N-19

8-Oxygen

O-13
O-14
O-21
O-22
O-23
O-24

9-Fluorine

F-15
F-16
F-24
F-25

10-Neon

Ne-16
Ne-17
Ne-18
Ne-19
Ne-26
Ne-27
Ne-28
Ne-30

11-Sodium

Na-18
Na-19
Na-28
Na-29
Na-30
Na-31

12-Magnesium

Mg-29
Mg-30
Mg-31
Mg-32
Mg-33
Mg-34

13-Aluminium

Al-22
Al-23
Al-24
Al-30
Al-31
Al-32
Al-33
Al-34
Al-35

14-Silicon

Si-24
Si-25
Si-26
Si-33
Si-34
Si-35
Si-36
Si-37
Si-38
Si-40

15-Phosphorus

P-27
P-35
P-36
P-37
P-38
P-39
P-43

16-Sulfur

S-28
S-38
S-39
S-40
S-41
S-42
S-43
S-44

17-Chlorine

Cl-40
Cl-41
Cl-42
Cl-43
Cl-44
Cl-45

18-Argon

Ar-31
Ar-32
Ar-33
Ar-34
Ar-35
Ar-46
Ar-47

19-Potassium

K-35
K-36
K-37

20-Calcium

Ca-36
Ca-37
Ca-38

21-Scandium

Sc-38
Sc-39
Sc-52
Sc-54
Sc-56

22-Titanium

Ti-53
Ti-54
Ti-55
Ti-56

23-Vanadium

V-43
V-44
V-45
V-57
V-60

24-Chromium

Cr-46
Cr-59
Cr-60
Cr-61
Cr-62

25-Manganese

Mn-47
Mn-59
Mn-60
Mn-62
Mn-64

26-Iron

Fe-64
Fe-65
Fe-66
Fe-67
Fe-68

27-Cobalt

Co-68

Index of nuclides

28-Nickel

Ni-54
Ni-74
Ni-75
Ni-78

29-Copper

Cu-72
Cu-73

30-Zinc

Zn-59
Zn-73
Zn-74
Zn-75
Zn-76
Zn-77
Zn-78

31-Gallium

Ga-61
Ga-62
Ga-63
Ga-74
Ga-76
Ga-77
Ga-78
Ga-79
Ga-80
Ga-81

32-Germanium

Ge-61
Ge-64
Ge-65
Ge-66
Ge-67
Ge-79
Ge-80
Ge-81
Ge-82
Ge-83

33-Arsenic

As-65
As-66
As-67
As-68
As-69
As-70
As-82
As-83

34-Selenium

Se-68
Se-69
Se-70
Se-86
Se-88

35-Bromine

Br-69
Br-70
Br-71
Br-72
Br-73
Br-74
Br-87
Br-88

36-Krypton

Kr-72
Kr-73
Kr-74
Kr-75
Kr-89
Kr-90
Kr-91
Kr-92
Kr-93
Kr-94
Kr-95

37-Rubidium

Rb-73
Rb-74
Rb-75
Rb-76
Rb-77
Rb-78
Rb-92
Rb-93
Rb-94
Rb-95
Rb-96

38-Strontium

Sr-76
Sr-77
Sr-78
Sr-79
Sr-95
Sr-96
Sr-97
Sr-98
Sr-99
Sr-100
Sr-101
Sr-102

39-Yttrium

Y-78
Y-79
Y-80
Y-81
Y-82
Y-83
Y-84
Y-97
Y-98
Y-99
Y-100
Y-101
Y-102

40-Zirconium

Zr-80
Zr-81
Zr-82
Zr-83
Zr-99
Zr-100
Zr-101
Zr-102
Zr-103
Zr-104

41-Niobium

Nb-83
Nb-84
Nb-85
Nb-86
Nb-101
Nb-102
Nb-103
Nb-104
Nb-105
Nb-106

42-Molybdenum

Mo-83
Mo-84
Mo-85
Mo-86
Mo-87
Mo-88
Mo-103
Mo-104
Mo-105
Mo-106
Mo-107
Mo-108
Mo-109
Mo-110

43-Technetium

Tc-86
Tc-87
Tc-88
Tc-89
Tc-90
Tc-91
Tc-92
Tc-104
Tc-105
Tc-106
Tc-107
Tc-108
Tc-109
Tc-110
Tc-111

44-Ruthenium

Ru-88
Ru-89
Ru-90
Ru-91
Ru-92
Ru-93
Ru-107
Ru-108
Ru-109
Ru-110
Ru-111
Ru-112
Ru-113

45-Rhodium

Rh-91
Rh-92
Rh-93
Rh-94
Rh-95
Rh-96
Rh-97
Rh-110
Rh-111
Rh-112
Rh-113
Rh-114
Rh-115

Index of nuclides

46-Palladium

Pd-93
Pd-94
Pd-95
Pd-96
Pd-97
Pd-98
Pd-113
Pd-114
Pd-115
Pd-116
Pd-117
Pd-118
Pd-120

47-Silver

Ag-94
Ag-95
Ag-97
Ag-98
Ag-99
Ag-100
Ag-101
Ag-102
Ag-103
Ag-104
Ag-112
Ag-113
Ag-114
Ag-115
Ag-116
Ag-117
Ag-118
Ag-119
Ag-120
Ag-122

48-Cadmium

Cd-98
Cd-100
Cd-101
Cd-102
Cd-103
Cd-104
Cd-121
Cd-122
Cd-123
Cd-124
Cd-125
Cd-126
Cd-127
Cd-128
Cd-130

49-Indium

In-100
In-101
In-102
In-103
In-104
In-105
In-106
In-125
In-126
In-127
In-128
In-129
In-130
In-131
In-132

50-Tin

Sn-102
Sn-103
Sn-104
Sn-105
Sn-106
Sn-107
Sn-108
Sn-109
Sn-129
Sn-130
Sn-131
Sn-132
Sn-133
Sn-134

51-Antimony

Sb-105
Sb-106
Sb-107
Sb-108
Sb-109
Sb-110
Sb-111
Sb-112
Sb-130
Sb-131
Sb-132
Sb-133
Sb-134
Sb-135
Sb-136

52-Tellurium

Te-104
Te-105
Te-106
Te-107
Te-108
Te-109
Te-137
Te-138
Te-139

53-Iodine

I-109
I-110
I-111
I-113
I-114
I-115
I-116
I-117
I-118
I-119
I-120
I-137
I-138
I-139

54-Xenon

Xe-112
Xe-113
Xe-114
Xe-115
Xe-116
Xe-117
Xe-118
Xe-119
Xe-120
Xe-121
Xe-122
Xe-139
Xe-140
Xe-141
Xe-142
Xe-143
Xe-144

55-Caesium

Cs-114
Cs-116
Cs-117
Cs-118
Cs-119
Cs-120
Cs-121
Cs-122
Cs-123
Cs-124
Cs-125
Cs-126
Cs-127
Cs-128
Cs-129
Cs-130
Cs-138
Cs-139
Cs-140
Cs-141
Cs-142
Cs-143

56-Barium

Ba-119
Ba-120
Ba-121
Ba-122
Ba-123
Ba-124
Ba-125
Ba-126
Ba-127
Ba-141
Ba-142
Ba-143
Ba-144
Ba-145
Ba-146
Ba-147
Ba-148

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57-Lanthanum

La-121
La-123
La-124
La-125
La-126
La-127
La-128
La-129
La-130
La-131
La-132
La-141
La-142
La-143
La-144
La-145
La-146
La-147
La-148
La-149

58-Cerium

Ce-122
Ce-124
Ce-125
Ce-126
Ce-127
Ce-128
Ce-129
Ce-130
Ce-131
Ce-132
Ce-133
Ce-146
Ce-147
Ce-148
Ce-149
Ce-150
Ce-151
Ce-152

59-Praseodymium

Pr-125
Pr-126
Pr-128
Pr-129
Pr-130
Pr-131
Pr-132
Pr-133
Pr-134
Pr-135
Pr-136
Pr-137
Pr-138
Pr-146
Pr-147
Pr-148
Pr-149
Pr-150
Pr-151
Pr-152

60-Neodymium

Nd-128
Nd-129
Nd-130
Nd-131
Nd-132
Nd-133
Nd-134
Nd-135
Nd-136
Nd-137
Nd-138
Nd-139
Nd-153
Nd-154
Nd-156

61-Promethium

Pm-131
Pm-132
Pm-133
Pm-134
Pm-135
Pm-136
Pm-137
Pm-138
Pm-139
Pm-140
Pm-141
Pm-154
Pm-155

62-Samarium

Sm-132
Sm-133
Sm-134
Sm-135
Sm-136
Sm-137
Sm-138
Sm-139
Sm-140
Sm-141
Sm-157
Sm-158
Sm-159
Sm-160

63-Europium

Eu-136
Eu-137
Eu-138
Eu-139
Eu-140
Eu-141
Eu-142
Eu-143
Eu-144

64-Gadolinium

Gd-138
Gd-139
Gd-140
Gd-141
Gd-142
Gd-143
Gd-144
Gd-145
Gd-164

65-Terbium

Tb-141
Tb-142
Tb-143
Tb-144
Tb-145
Tb-146
Tb-147
Tb-148
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66-Dysprosium

Dy-140
Dy-142
Dy-143
Dy-144
Dy-145
Dy-146
Dy-147
Dy-148
Dy-149
Dy-150
Dy-151
Dy-152
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Dy-167
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67-Holmium

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Ho-144
Ho-145
Ho-147
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Ho-149
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Ho-151
Ho-152
Ho-153
Ho-154
Ho-155
Ho-156

68-Erbium

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Er-145
Er-147
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Er-150
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69-Thulium

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Tm-150
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Tm-157
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Tm-160
Tm-161
Tm-162
Tm-163
Tm-164

71-Lutetium

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Lu-153
Lu-154
Lu-155
Lu-156
Lu-157
Lu-159
Lu-160
Lu-161
Lu-162
Lu-163
Lu-164
Lu-165
Lu-166
Lu-167
Lu-168
Lu-169
Lu-170

73-Tantalum

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Ta-158
Ta-159
Ta-164
Ta-165
Ta-166
Ta-167
Ta-168
Ta-169
Ta-170
Ta-171
Ta-172
Ta-173
Ta-174
Ta-175
Ta-176
Ta-177
Ta-178

75-Rhenium

Re-161
Re-162
Re-163
Re-165
Re-167
Re-168
Re-169
Re-170
Re-171
Re-172
Re-173
Re-174
Re-175
Re-176
Re-177
Re-178
Re-179
Re-180
Re-193

70-Ytterbium

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Yb-151
Yb-152
Yb-153
Yb-154
Yb-155
Yb-156
Yb-157
Yb-158
Yb-159
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Yb-161
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Yb-163
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72-Hafnium

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Hf-156
Hf-157
Hf-158
Hf-159
Hf-160
Hf-161
Hf-162
Hf-163
Hf-164
Hf-165
Hf-166
Hf-167
Hf-168
Hf-169
Hf-170
Hf-171
Hf-172

74-Tungsten

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W-160
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W-166
W-167
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W-171
W-172
W-173
W-174
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76-Osmium

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77-Iridium

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78-Platinum

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79-Gold

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Au-171
Au-173
Au-175
Au-176
Au-177
Au-179
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Au-182
Au-183
Au-184
Au-185
Au-200
Au-201
Au-203

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81-Thallium

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Tl-183
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Tl-185
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Tl-194
Tl-210

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83-Bismuth

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Bi-186
Bi-187
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Bi-189
Bi-190
Bi-191
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Bi-197
Bi-198
Bi-199
Bi-200

84-Polonium

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Po-189
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Po-191
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Po-218

85-Astatine

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At-196
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At-200
At-201
At-202
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86-Radon

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Rn-198
Rn-199
Rn-200
Rn-201
Rn-202
Rn-203
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Fr-204
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Fr-210
Fr-211
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Ra-207
Ra-208
Ra-209
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Ra-211
Ra-229
Ra-230
Ra-231

89-Actinium

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Ac-208
Ac-212
Ac-213
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95-Americium

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96-Curium

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Cm-240
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97-Berkelium

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Bk-242
Bk-243
Bk-244
Bk-245

98-Californium

Cf-241
Cf-242
Cf-243
Cf-244
Cf-245

99-Einsteinium

Es-243
Es-244
Es-245
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100-Fermium

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Fm-248
Fm-249
Fm-250
Fm-251
Fm-252
Fm-253
Fm-254
Fm-255
Fm-256

101-Mendelevium

Md-247
Md-251
Md-252

102-Nobelium

No-251
No-252
No-253
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103-Lawrencium

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