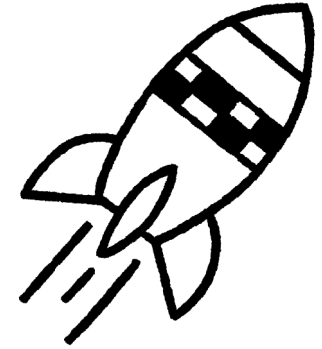


Kooxda 0 (Gaasaska Gobta) (Group 0 (Noble gases))

Sayniska

Cutub: Qaababka shaxda xilliyeedka (periodic table)



Natiijo

Waxaan qeexi karaa sifooyinka gaasaska gobta, isticmaalkooda, iyo sharaxaadda sababta ay u yihiin kuwa aan fal-celin (unreactive).

Erayada muhiimka ah

aan fal-celin (inert)

gaas gob (noble gas)

Erayada muhiimka ah

Walax aan fal-celin (inert) waa mid aan kiimiko ahaan fal-celin (reactive) ahayn.

Gaas gob (noble gas) waa curiye (element) ku jira Kooxda 0 ee shaxda xilliyeedka (periodic table).

Kooxda 0 (Gaasaska Gobta) (Group 0 (Noble gases))



Kooxda 0: Gaasaska Gobta (Noble gases)



Sifooyinka iyo isticmaalka

Kooxda 0 waxaa loola jeedaa curiyeyaasha (elements) ku yaal tiirka midig ee fog ee shaxda xilliyeedka (periodic table), oo loo yaqaan gaasaska gobta (noble gases).

1

2

3

4

5

6

7

0

atomic symbol

H

hydrogen

name

																		He helium
Li lithium	Be beryllium		B boron	C carbon	N nitrogen	O oxygen	F fluorine	Ne neon										
Na sodium	Mg magnesium		Al aluminium	Si silicon	P phosphorus	S sulfur	Cl chlorine	Ar argon										
K potassium	Ca calcium	Sc scandium	Ti titanium	V vanadium	Cr chromium	Mn manganese	Fe iron	Co cobalt	Ni nickel	Cu copper	Zn zinc	Ga gallium	Ge germanium	As arsenic	Se selenium	Br bromine	Kr krypton	
Rb rubidium	Sr strontium	Y yttrium	Zr zirconium	Nb niobium	Mo molybdenum	Tc technetium	Ru ruthenium	Rh rhodium	Pd palladium	Ag silver	Cd cadmium	In indium	Sn tin	Sb antimony	Te tellurium	I iodine	Xe xenon	
Cs cesium	Ba barium	La lanthanum	Hf hafnium	Ta tantalum	W tungsten	Re rhenium	Os osmium	Ir iridium	Pt platinum	Au gold	Hg mercury	Tl thallium	Pb lead	Bi bismuth	Po polonium	At astatine	Rn radon	
Fr francium	Ra radium	Ac actinium	Rf rutherfordium	Db dubnium	Sg seaborgium	Bh bohrium	Hs hassium	Mt meitnerium	Ds darmstadtium	Rg roentgenium	Cn copernicium	Nh nihonium	Fl flerovium	Mc moscovium	Lv livermorium	Ts tennessine	Og oganeson	

Curiyeyaasha (elements) Kooxda 0 waa: helium, neon, argon, krypton, xenon, radon iyo oganesson.

Kooxda 0: Gaasaska Gobta (Noble gases)

Summadahee (symbols) ayaa ka dhigan curiyeyaasha (elements) Kooxda 0?

a Ne ✓

b Rh

c Xe ✓

Kooxda 0: Neefsashada Gobta (Noble gases)

Run mise been?

Curiyeyaasha (elements) Kooxda 0 waa: helium, nitrogen, argon, krypton, xenon, radium iyo oganesson.



Run



Been



Sabab u sheeg jawaabtaada

a

Curiyeyaasha (elements) Kooxda 0 kuma jiraan neon iyo radon.

b

Curiyeyaasha (elements) Kooxda 0 kuma jiraan nitrogen iyo radium.



Kooxda 0: Neefsashada Gobta (Noble gases)

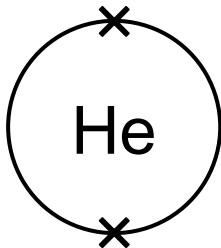
Curiyeyaasha (elements) Kooxda 0 waa neefsasho (gases) heerkulka qolka iyadoo oganesson yahay ka reeban.

Xaqiiqooyinka ku saabsan oganesson waxaa ka mid ah:

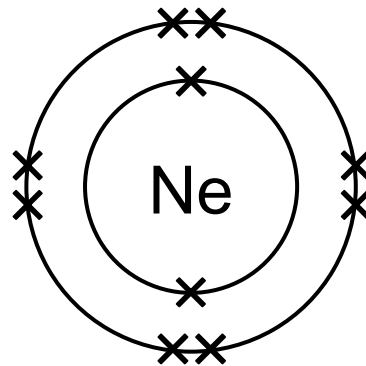
- curiye (element) shucaac sare leh (highly radioactive)
- waxaa la isku daray (synthesised) atamyo (atoms) aad u yar
- sifooyinka kiimikada (chemical properties) waa kuwa aan la garanayn
- la filayo inuu yahay adke (solid) heerkulka qolka
- sifooyinkeeda jireed (physical properties) tusaale: barta karkarinta (boiling point) iyo cufnaanta (density) waa la saadaaliyay



Dhammaan curiyeyaasha (elements) Kooxda 0 waxay leeyihiin qolof sare (outer shell) oo buuxda oo elektaroonno (electrons) ah, taasina waxay ka dhigaysaa kuwo aad u deggan (stable).



Helium (He) wuxuu leeyahay 2 elektaroon (electrons) oo buuxiya qolofa elektaroonka (electron shell) koowaad.



Neon (Ne) wuxuu leeyahay 2 qolof elektaroon (electron shells), qolofa sare (outer shell) waa buuxdaa (8).

Helium (He) wuxuu leeyahay qolof buuxda oo ah 2 elektaroon (electrons), laakiin neon (Ne) iyo argon (Ar) labaduba waxay leeyihiin qolofa sare (outer shells) oo buuxda oo ah 8 elektaroon (electrons).

Run mise been?

Dhammaan atamka (atoms) curiye kasta (element) ee Kooxda 0 waxay leeyihiin qolof sare (outer shell) oo buuxda oo ah 8 elektaroon (electrons).



Run



Been



Sabab u sheeg jawaabtaada

a

Helium (He) wuxuu leeyahay kaliya 2 elektaroon (electrons) qolofsiisa sare (outer shell) (tan waxaa loo tixgaliyaa qolof buuxda (full shell)).



b

Dhammaan curiyeyaasha (elements) Kooxda 0 ma laha qolofsi sare (outer shells) oo buuxda oo elektaroonno (electrons) ah.

Ardayda qaar ayaa ka wada hadlaya neefsashada gobta (noble gases). Gee meesha qofka saxda ah oo cusbooneysii hadal kasta oo qalad ah.



Cali

Cali: Kooxda 0 waa tiirka midig ee ugu dambeeya ee shaxda (periodic table). Dhammaantood waxay leeyihiin qolof sare oo buuxda, taasoo ka dhigaysa kuwo deggan (stable).

Cabdi: Helium wuxuu leeyahay 2 electrons qolofkiisa koowaad. Neon wuxuu leeyahay 8 electrons qolofkiisa labaad.

Suad: Curiyeyaasha (elements) kooxda 0 waxay ku yaalliin tiirka koowaad waxayna yihiin kuwo aan degganayn (unstable) sababtoo ah qolof sare oo aan buuxin.

Layla: Helium wuxuu leeyahay 2 electrons taasoo ka dhigaysa mid deggan (stable), sida argon oo kale.



Suad



Cabdi



Layla

Qaar ka mid ah ardayda ayaa ka wada hadlaya gaasaska goobta (noble gases). Gee qofka saxda ah oo cusbooneysi hadal kasta oo qalad ah.



Cali



Suad

Cali: Kooxda 0 waa tiirka midig ee ugu dambeeya ee shaxda (periodic table). Dhammaantood waxay leeyihiin qolof sare oo buuxda, taasoo ka dhigaysa kuwo deggan (stable).

Cabdi: Helium wuxuu leeyahay 2 electrons qolofkiisa koowaad. Neon wuxuu leeyahay 8 electrons qolofkiisa labaad.

Suad: Curivevaasha (elements) kooxda 0 waxay ku yaalliin tiirka koowaad

Curiyeyasha (elements) kooxda 0 waxay ku yaalliin tiirka midig ee ugu dambeeya, ma aha kan koowaad. Waxay aad u deggan yihiin (stable) sababtoo ah qolof sare oo buuxda.

Helium wuxuu leeyahay 2 electrons qolofkiisa sare, laakiin argon wuxuu leeyahay 8 electrons qolofkiisa sare. Labaduba waa kuwo deggan (stable).



Cabdi



Layla

Qaabka casharka

Kooxda 0 (Neefsasha Gobanimada) (Group 0 (Noble gases))



Kooxda 0: Gaasaska goobta (Noble gases)

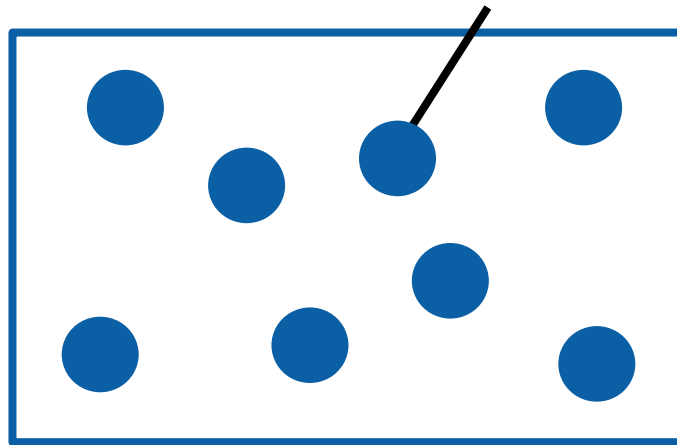


Sifooyinka iyo isticmaalka

Curiyeyasha (elements) Kooxda 0 waxay u jiraan sida neefo aan midab lahayn, monatomic (monatomic) ah heerkulka qolka iyo cadaadiska.

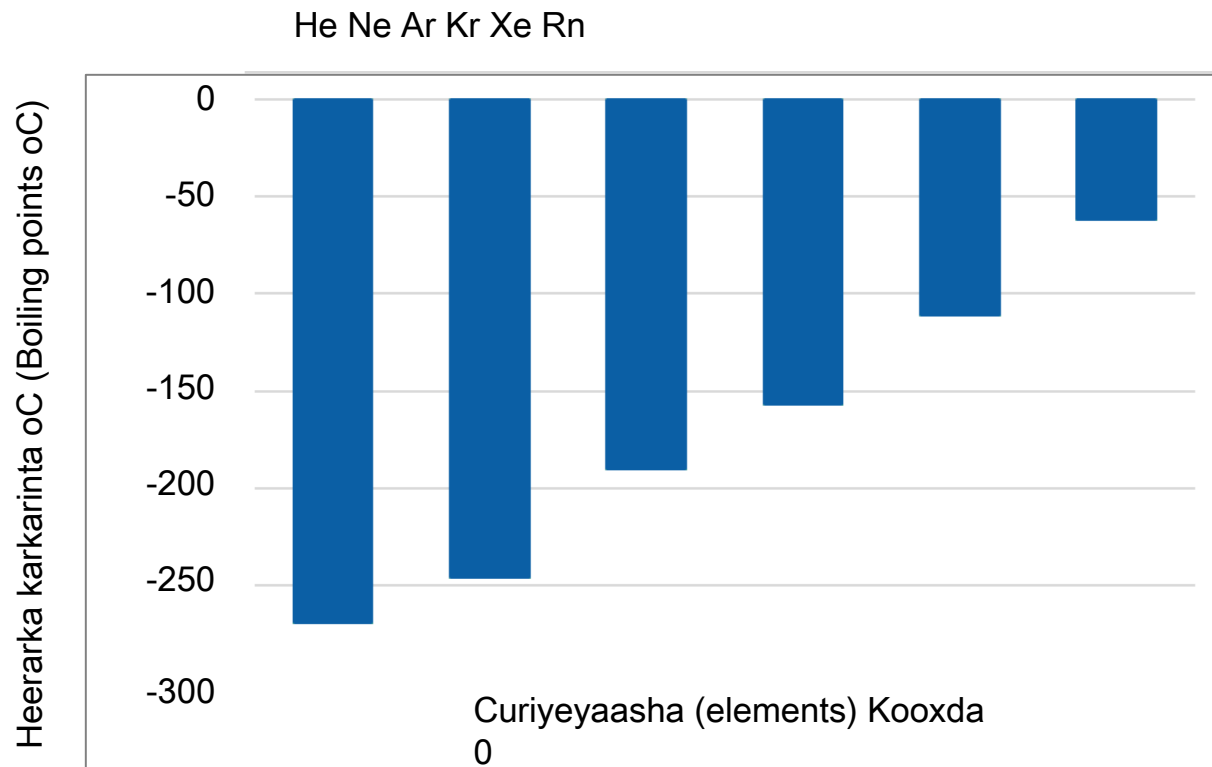
Atamka (atoms) uma baahna inay ku xirmaan atamyo kale si ay u sameeyaan molecules (molecules), sababtoo ah waxay leeyihiin qolof sare oo buuxda oo elektaroon ah (electrons) waxayna aad u deggan yihiin.

monatomic (atam keli ah) (monatomic (single atoms))



Tani waxay sidoo kale ka dhigaysaa iyaga kuwo kiimiko ahaan aan falcelin (chemically inert (unreactive)).

Curiyeyaasha (elements) Kooxda 0 waxay muujiyaan isbeddellada (trends) guryaha qaarkood.



Heerarka karkarinta (Boiling points) waxay kordhaan hoos u dhaca kooxda, tusaale ahaan waxay u dhowaadaan 0oC.

Curiyeyasha (elements) Kooxda 0 ee heerarka karkarintoodu ka hooseeyaan krypton (krypton) waa kuwee?

a helium (helium) ✓

b radon (radon)

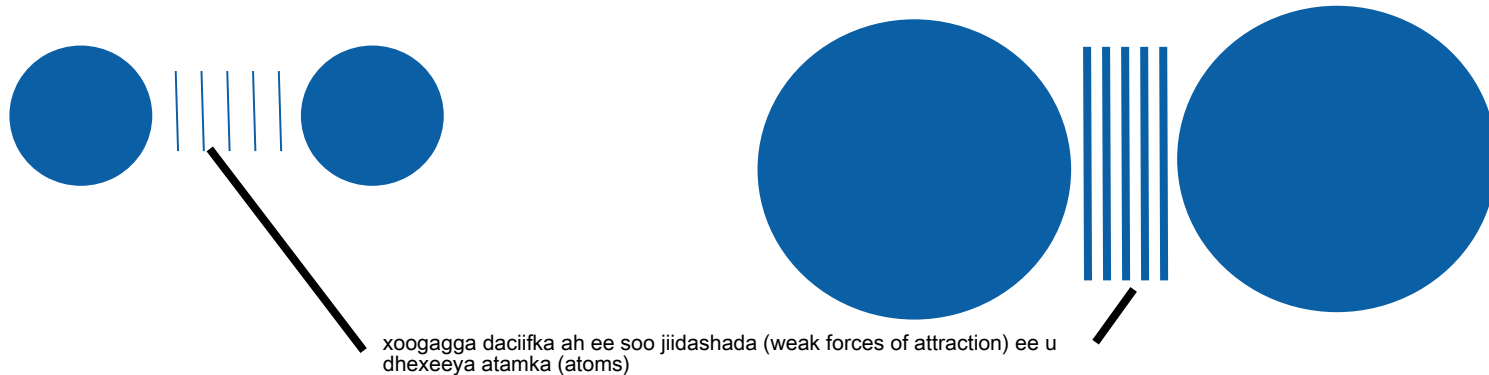
c argon (argon) ✓

d neon (neon) ✓

Guryaha iyo isticmaalka (Properties and uses)

Kordhinta heerka karkarinta waxaa u sabab ah:

- atamka (atoms) oo ku kordhaya cabbirka hoos u dhaca kooxda
- xoogagga soo jiidashada ee u dhexeeya atamka waaweyn ayaa ka xoog badan (forces of attraction)
- tamar badan ayaa loo baahan yahay si looga gudbo xoogagga ka xooggan (forces)



Run mise been?

Molekyuulada curiyeyaasha Group 0 waxay leeyihiin xoogag tabar yar oo u dhexeeya atamka (elements)



Run



Been



Sabab u sheeg jawaabtaada

a

Curiyeyaasha Group 0 waa monatomic waxayna leeyihiin xoogag tabar yar oo u dhexeeya atamkooda (elements)



b

Curiyeyaasha Group 0 waa diatomic waxayna leeyihiin xirmo xooggan oo u dhexeeya atamka (elements)

Curiyayaasha Group 0 sidoo kale waxay muujiyaan isbeddelka cufnaanta (density)

Cufnaantu waa cufka walaxda
qaybkiiba halbeeg (density)



Maadaama Group 0 ay yihiin
gaasas, qaybahoodu waa kala
fogaansho, sidaas darteed
dhammaantood waxay leeyihiin
cufnaan hoose (density)

Helium waxaa loo isticmaalaa buufinnada sababtoo ah waa ka cufnaan yar hawada sidaas darteed wuu dhabbi doonaa (density)

Hoos u dhaca kooxda, cufka atamka curiyeyaasha Group 0 waa ... (mass)

a

hoos u dhacaa (decreases)

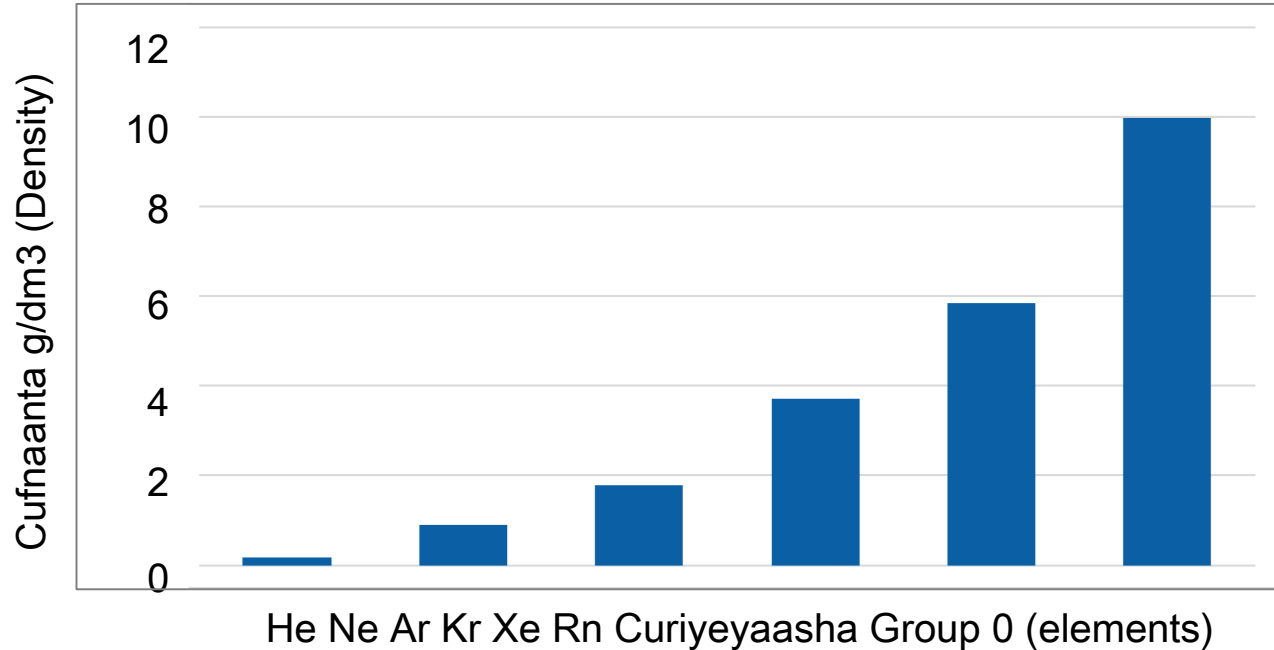
b

ma muujinayo qaab (shows no pattern)

c

kor u kacaa (increases) ✓

Cufnaanta curiyeyaasha Group 0 waxay kor u kacdaa hoos u dhaca kooxda (density)



Cufnaantu waxay kor u kacdaa marka cufka atamkani uu kordho (density)

Buufin ayaa lagu buuxiyay neon. Neon wuxuu leeyahay cufnaan 0.9 g/dm^3 . Haddii hawadu leedahay cufnaan 1.2 g/dm^3 maxaa ku dhacaya buufinka? (density)



Dhex kora (Float upwards)

a



Hoos u dhaca (Sink downwards)



b

Meeshii ku sii nagaada
(Remain in one place)



c

Curiyayaasha (elements) Group 0 waxay leeyihiin sifooyin kiimiko oo isku mid ah.

Dhammaantood waa kuwa aan shidmi karin (non-flammable).



Argon waxaa loo isticmaalaa inuu bixiyo jawi aan falcelin (inert atmosphere) marka la alxanayo (welding).



Argon iyo xenon waxaa loo isticmaalaa nalka (light bulbs) ee aad u kululaada.

Run mise been?

Marka shidaal (match) la shiday la geliyo weel helium ah, waxay sababi doontaa qarax (explosion).



Run



Been



Sabab u sheeg jawaabtaada



Helium wuu shidi doonaa (ignite) wuxuuna siin doonaa iftiin dhalaalaya, laakiin qarax (explosion) ma jiri doono.



Shidaalka (match) wuu dami doonaa, sababtoo ah helium waa aan shidmi karin (non-flammable).





Baadh curiyayaasha (elements) Group 0 ee soo socda oo buuxi shaxda hoose.

	calaamad (symbol) iyo lambarka atomiga (atomic number)	sifooyinka muhiimka ah (key properties)	isticmaalka caadiga ah (common uses)
helium			
neon			
argon			
krypton			
xenon			

Baadh curiyeyaasha (elements) soo socda ee Kooxda 0 oo buuxi shaxda hoose.

	calaamad da iyo AN	astaamaha muhiimka ah	isticmaalka caadiga ah
helium	He, 2	gaas fudud, inert, wuxuu iftiimiyaa huruud-cad marka la koronto dhaliyo	buufinnada, isku dhafka neefsashada, qaboojinta
neon	Ne, 10	gaas fudud, inert, wuxuu iftiimiyaa casaan-cad marka la koronto dhaliyo	calaamadaha neon, tilmaamayaasha danab sare
argon	Ar, 18	inert, cufnaan la mid ah hawada, wuxuu iftiimiyaa violet marka la koronto dhaliyo	laambadaha, alxanka, gaashaan gaas inert
krypton	Kr, 36	gaas culus, loo isticmaalo iftiinka, wuxuu iftiimiyaa buluug-cad marka la koronto dhaliyo	iftiinka, sawir qaadista
xenon	Xe, 54	gaas culus (heavy gas), aan falcelin (inert), wuxuu iftiimiyaa buluug marka la koronto mariyo (glows blue when electrified)	nalalka iftiinka (flash lamps), nidaamyada riixidda ion (ion propulsion systems)

Gaasaska Gobta (Noble gases) waxay ku jiraan Kooxda 0 ee diiwaanka xilliyeedka (periodic table) waana kuwa aan falcelin (unreactive).

Gaasaska Gobta (Noble gases) dhamaantood waa gaas (gases) heerkulka qolka (room temperature).

Waxay leeyihiin qolof (shells) elektaroon oo dhammaystiran (complete), taasoo ka dhigaysa kuwa deggan (stable).

Markaad hoos u dhaqaaqdo Kooxda 0 curiyeyaasha (elements), cufnaanta (density) iyo barta karkarinta (boiling points) way kordhaan.