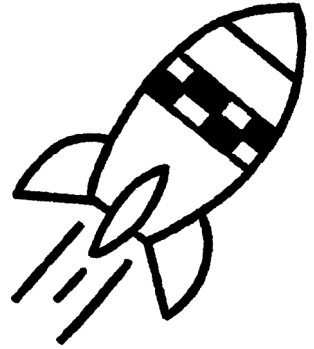


Sifooyinka curiyeyaasha (Properties of elements)



Sayniska

Cutub: Atamka, curiyeyaasha iyo xeryahooda (Atoms, elements and compounds)

Natiijo

Waxaan qiyaasi karaa sifooyinka kiimikada iyo jireed ee curiyeyaasha kiimikada kala duwan.

Erayada muhiimka ah

**walax saafi ah (pure
substance)**

sifo (property)

sifo jireed (physical property)

sifo kiimiko (chemical property)

Walax saafi ah waxay ka kooban tahay hal nooc oo kiimiko ah.

Sifada walaxdu waa astaan ama qaab lagu kala saari karo ama lagu qiyaasi karo sida ay u dhaqanto.

Sifada jireed ee walaxdu waxay qiyaasaysaa sida walaxdu u muuqato oo u dhaqanto, tusaale: barta karkarinta (boiling point).

Sifada kiimikadu waxay qiyaasaysaa isbeddelada kiimikada ee ku dhaca walaxda falcelinta kiimikada si ay u sameeyaan walxo cusub.

Qaabka casharka

Sifooyinka curiyeyaasha (Properties of elements)



Sifooyinka jireed ee curiyeyaasha (Physical properties of elements)



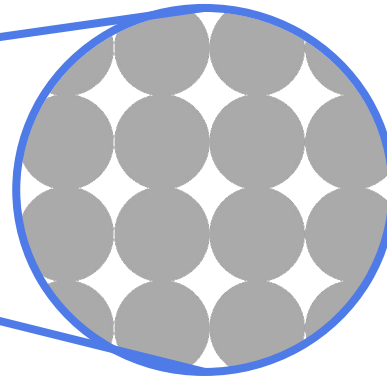
Sifooyinka kiimikada iyo isbeddellada curiyeyaasha (Chemical properties and trends of elements)

Curiye (element):

- waa walax saafi ah
- wuxuu ka kooban yahay hal nooc oo atam ah



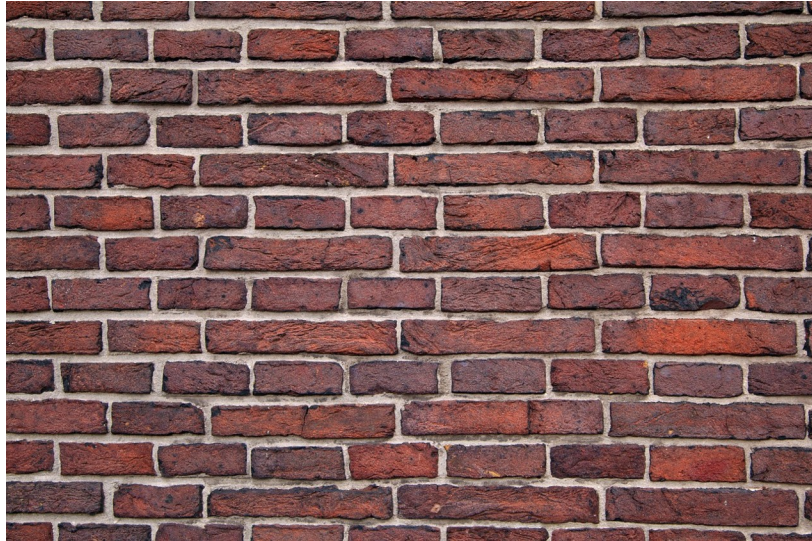
gooldhagax saafi ah (pure gold nugget)



atamka dahabka oo kaliya

Sifooyinka jireed ee curiyeyaasha (Physical properties of elements)

Marka atam badan oo isku nooc ah ay isku yimaadaan, waxay abuuraan sifooyinka guud ee curiyaha.



Atamku (Atoms) waa dhismaha aasaasiga ah ee curiyeyaasha (elements), mana laha sifooyin la mid ah kuwa curiyaha (element) oo dhan.

Faham qaldan oo caadi ah ayaa ah in atamku (atoms) midab leeyihiin (tusaale, atamka dahabku waa dahab). Dhammaan atamka (atoms) shaqsigu waa kuwo aan midab lahayn.

Run mise been?

Atamka qalinka (Silver atoms) shaqsigu waa kuwo midab qalin leh.



Run



Been



Sabab u sheeg jawaabtaada

a

Atamka qalinka (Silver atoms) ma laha sifooyin la mid ah kuwa curiyaha qalinka (element silver). Atamka (atoms) shaqsigu ma laha midab.



b

Atamka qalinka (Silver atoms) shaqsigu waxay midab qalin leh yihiin oo keliya marka ay ku jiraan xaalad adag (solid state).

Dooro dhammaan jawaabaha qeexaya curiyeyaasha (elements).

a

Aluminium-ku (Aluminium) wuxuu ka samaysan yahay hal nooc oo atom (atom) ah. ✓

b

Koloriinta (Chlorine) waxay ka samaysan tahay hal nooc oo atom (atom) ah. ✓

c

Aluminium-ku (Aluminium) wuxuu ka samaysan yahay laba atom (atom) oo kala duwan.

d

Koloriinta (Chlorine) waxay ka samaysan tahay saddex nooc oo atom (atom) ah.

Dhammaan curiyeyaasha (elements) waxay leeyihiin barta dhalaalidda (melting point) iyo barta karkarinta (boiling point) oo go'an.

Barta dhalaalidda (Melting point) iyo barta karkarinta (boiling point) waa sifooyin jireed (physical properties).



dahab (gold)

heerkulka dhalaalka = $1,064^{\circ}\text{C}$

heerkulka karkarinta = $2,836^{\circ}\text{C}$



mercury

barta dhalaalidda (melting point) =

-39°C

barta karkarinta (boiling point) = 357°C



bromine

barta dhalaalidda (melting point) =

-7°C

barta karkarinta (boiling point) = 59°C

Run mise been?

Walaxdu waxay leedahay heerkul dhalaal 75-80°C. Tani waxay ka dhigan tahay inay tahay curiye (element).



Run



Been



Sabab u sheeg jawaabtaada

a

Dhammaan curiyeyaasha (elements) waxay leeyihiin heerkul dhalaal go'an iyo heerkul karkarin go'an.



b

Dhammaan walxaha curiyeyaasha (elements) ah waxay leeyihiin kala duwanaansho heerkulka dhalaalka iyo karkarinta.

Sifooyinka jirka ee curiyeyaasha (elements)

Sifooyinka jirku waxay qeexaan sida curiyaha (element) u muuqdo oo u dhaqmo.



Xaaladda walaxda: gaas, dareere, adag.

Xoogga: xoog leh ama daciif ah.

Kulayl-qabashada (thermal conductivity): awoodda lagu qaado ama lagu qaadin karin kulaylka.



Muuqaalka: sida walaxdu u egtahay. tusaale: dhalaalaysa, caajis ah.

Sifooyinka jirka ee curiyeyaasha (elements)

Sifooyinka jirku waxay qeexaan sida curiyaha (element) u muuqdo oo u dhaqmo.

Ductile: waxaa la jiidi karaa silig.

Malleable: waxaa la qaloocin karaa qaab iyada oo aan jabbin marka xoog (force) la saaro.

Koronto-qabashada (electrical conductivity): awoodda lagu qaado ama lagu qaadin karin korontada.



Tusaalooyinka sifooyinka jirka ee curiyeyaasha (elements) kala duwan.

Aluminium:

- barta dhalaalidda (melting point) = 660°C
- wax-qaadid fiican oo kulayl (thermal) iyo koronto (electrical) ah
- jilicsan marka loo barbardhigo curiyeyaasha (elements) kale ee birta ah
- la jajabin karo (malleable)
- la soo dhuuqi karo (ductile)
- dhalaalaya (shiny)



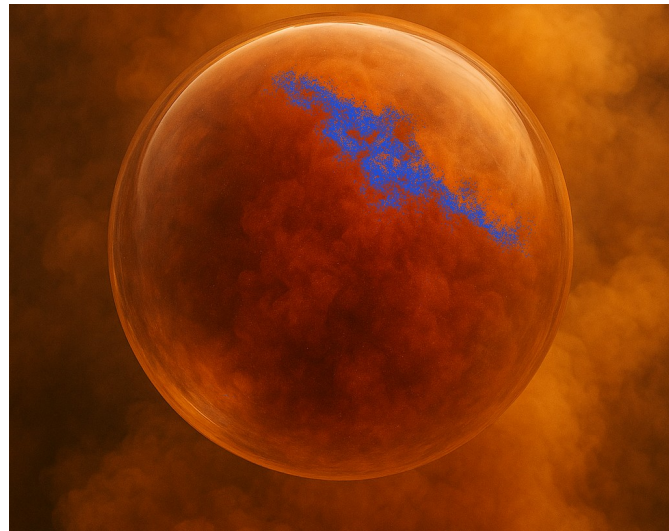
aluminium

Sifooyinka jireed (physical properties) ee curiyeyaasha (elements)

Tusaalooyinka sifooyinka jireed (physical properties) ee curiyeyaasha (elements) kala duwan.

Bromine:

- barta karkarinta (boiling point) = 59°C
- midab cagaar-casaan (dull orange)
- dareere (liquid) heerkulka qolka (room temperature)
- ur xun (unpleasant smell)



bromine

Sifooyinka jireed (physical properties) ee curiyeyaasha (elements)

Run mise been?

Sifooyinka jireed (physical properties) ee aluminium waa inay tahay dhalaalaya (shiny), la jajabin karo (malleable) iyo dareere (liquid) heerkulka qolka (room temperature).



Run



Been



Sabab u sheeg jawaabtaada

a

Qaar ka mid ah sifooyinka jireed (physical properties) ee aluminium waa inay tahay dhalaalaya (shiny), la soo dhuuqi karo (ductile) iyo dareere (liquid) heerkulka qolka (room temperature).

b

Qaar ka mid ah sifooyinka jireed (physical properties) ee aluminium waa inay tahay dhalaalaya (shiny), la jajabin karo (malleable) iyo adag (solid) heerkulka qolka (room temperature)



1a) Sixi hadalada Isra iyo Axmed adoo dooranaya ikhtiyaarka saxda ah ee qawska (brackets) ku jira.

Isra



Curiye (element) wuxuu leeyahay (go'an/go'aan kala duwan/midna) dhibic dhalaal ah. Curiye (element) wuxuu leeyahay (go'an/go'aan kala duwan/midna) dhibic karkar ah.

Curiye (element) waa (had iyo jeer/mararka qaar/marna) ka samaysan yahay hal nooc oo atom (atom) ah.



Axmed

1a) Sax Isra iyo Axmed hadalkooda adoo dooranaya ikhtiyaarka saxda ah ee qawska ku jira.

Isra



Curiye (element) wuxuu leeyahay dhibic dhalaal go'an.
Curiye (element) wuxuu leeyahay dhibic karkar go'an.

Curiye (element) had iyo jeer wuxuu ka kooban yahay hal nooc oo atom ah.



Axmed

1b) Sax Isra iyo Axmed
hadalkooda adoo dooranaya
ikhtiyaarka saxda ah ee qawska
ku jira.

Atom kaliya oo curiye
(element) ah wuxuu leeyahay
sifooyin (isku mid ah/kala
duwan) marka loo eego tiro
badan oo curiyaha ah.

Atomyada curiye (element) (waa isku
midab/kala midab ah/midab ma laha).
Tusaale, atomyada naxaasta (copper)
waa (midab naxaas ah/midab
la'aan/midab bir qalin ah).

**Isra****Axmed**

1b) Sax Isra iyo Axmed
hadalkooda adoo dooranaya
ikhtiyaarka saxda ah ee qawska
ku jira.

Atom kaliya oo curiye (element) ah
wuxuu leeyahay sifooyin kala duwan
marka loo eego tiro badan oo
curiyaha ah.

**Axmed****Isra**

Atomyada curiye (element) midab
ma laha. Tusaale, atomyada
naxaasta (copper) waa kuwo
midab la'aan ah.

Aqoonsi maadooyinka kuwa curiye (element) ah iyo kuwa aan curiye (element) ahayn.

maadada (substance)	barta dhalaalka (°C) (melting point (°C))	barta karkarinta (°C) (boiling point (°C))	noocyada atom-ka ee maadada ku jira (types of atom in substance)	curiye (element) mise ma aha curiye (element)?
A	98	150	1	
B	0	100	2	
C	15-17	80-85	6	
D	32	65	2	
E	-290	-185	1	
F	1265-1280	1300-1392	5	

2)

maadada (substance)	barta dhalaalka (°C) (melting point (°C))	barta karkarinta (°C) (boiling point (°C))	noocyada atom-ka ee maadada ku jira (types of atom in substance)	curiye (element) mise ma aha curiye (element)?
A	98	150	1	curiye (element)
B	0	100	2	ma aha curiye (element)
C	15-17	80-85	6	ma aha curiye (element)
D	32	65	2	ma aha curiye (element)
E	-290	-185	1	curiye (element)
F	1265-1280	1300-1392	5	ma aha curiye (element)

- 3) Kani waa dhuxul (coal), waxa uu ka samaysan yahay kaarboon (carbon).
Dooro sifooyinka curiye (element) kaarboon (carbon) liiska.

Liiska sifooyinka:



3) Kani waa dhuxul (coal), wuxuu ka samaysan yahay kaarboon (carbon).
Doooro sifooyinka kaarboon (carbon) liiska.

aan la kala bixin karin (not ductile)

caajis ah (dull)

jajaban (brittle)

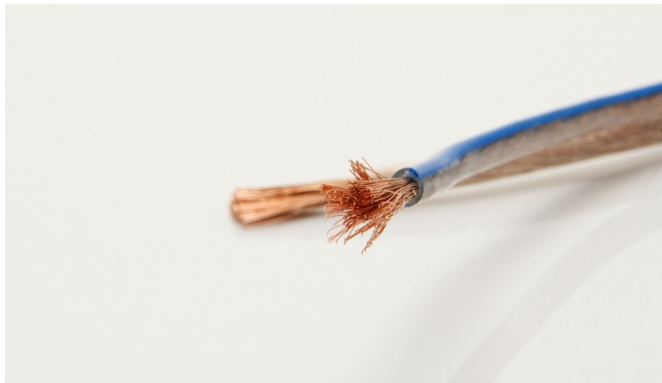
xaaladda maadada - adag heerkulka qolka



- 4) Fiiladani waxay ka samaysan yihiin naxaas (copper).
 - a) Liis garo sifooyinka naxaasta (copper).
 - b) Sharax sida aad u ogaatay in naxaastu (copper) leedahay sifadan.

Liiska sifooyinka:

- ma aha koronto qaade (not an electrical conductor)



- xaaladda walaxda ee heerkulka qolka (state of matter at room temperature)

- 4) Fiiladani waxay ka samaysan yihiin naxaas (copper).
- a) Tax sifooyinka naxaasta (copper).



b) Sharax sida aad u ogaatay in naxaastu (copper) leedahay sifadan.

la jiid karo (ductile) - sawirku wuxuu muujinayaa fiilooyin

dhalaalaya (shiny) - sawirku wuxuu muujinayaa inay dhalaalayso

koronto-socod (electrical conductor) - loo isticmaalo fiilooyinka korontada

la qaabayn karo (malleable) - fiilooyinka naxaasta (copper) waa la qaabayn karaa iyaga oo aan jabin

xoog badan (strong) - way adag tahay in la jebiyo

Sifooyinka curiyeyaasha (elements)



Sifooyinka jireed ee curiyeyaasha (elements)



Sifooyinka kiimikada iyo isbeddellada curiyeyaasha (elements)

Sifooyinka kiimikada iyo isbeddellada curiyeyaasha (elements)

Curiye kastaa (element) wuxuu leeyahay sifooyin kiimikada oo gaar ah.

Mid ka mid ah sifooyinka kiimikada ee birta (iron) waa inay si tartiib ah ula falceliso oksijiinta (oxygen) si ay u samayso walax cusub oo la yiraahdo bir-oksaydh (iron oxide) (miridh).

Sifo kiimikada waa sida walax ugu falceliso kiimikooyin gaar ah, tusaale:

- biyo (water)
- aashito (acids)
- oksijiin (oxygen)

Walxo cusub had iyo jeer waa la sameeyaa.



Sifooyinka kiimikada iyo isbeddellada curiyeyaasha (elements)



Run mise been?

Tusaale sifo kiimikada: curiyaha (element) hydrogen wuxuu si qarax ah ula falceliyaa oksijiinta (oxygen), waxaa la sameeyaa badeecad cusub.



Run



Been

Sabab u sheeg jawaabtaada

- a** Hydrogen si qarax ah ula falcelinta oksijiinta (oxygen) waa sifo kiimikada ee hydrogen. 
- b** Hydrogen falcelinta si uu u sameeyo badeecad cusub waa tusaale sifo jireed.

Sifooyinka kiimikada iyo isbeddellada curiyeyaasha (elements)

Curiyeyaasha (elements) leh sifooyin isku mid ah ayaa si wada jir ah loogu habeeyaa shaxda xilliyeedka (periodic table).

1 H 1																	4 He 2
7 Li 3	9 Be 4											11 B 5	12 C 6	14 N 7	16 O 8	19 F 9	20 Ne 10
23 Na 11	24 Mg 12											27 Al 13	28 Si 14	31 P 15	32 S 16	35.5 Cl 17	40 Ar 18
39 K 19	40 Ca 20	45 Sc 21	48 Ti 22	51 V 23	52 Cr 24	55 Mn 25	56 Fe 26	59 Co 27	59 Ni 28	63.5 Cu 29	65 Zn 30	70 Ga 31	73 Ge 32	75 As 33	79 Se 34	80 Br 35	84 Kr 36
85 Rb 37	88 Sr 38	69 Y 39	91 Zr 40	93 Nb 41	96 Mo 42	98 Tc 43	101 Ru 44	103 Rh 45	106 Pd 46	108 Ag 47	112 Cd 48	115 In 49	119 Sn 50	122 Sb 51	128 Te 52	127 I 53	131 Xe 54
133 Cs 55	137 Ba 56	* 72	178 Hf 73	181 Ta 74	184 W 75	186 Re 76	190 Os 77	192 Ir 78	195 Pt 79	197 Au 80	201 Hg 81	204 Tl 82	207 Pb 83	209 Bi 84	209 Po 85	210 At 86	222 Rn 86

shaxda xilliyeedka (periodic table)

Tusaale sifo jireed (physical property):
 - curiyayaashan (elements)
 - dhammaantood waa jilicsan yihiin.

[illegible]

4
H
2

	11 B	12 C	14 N	16 O	19 F	20 Ne
	5	6	7	8	9	10
	27 Al	28 Si	31 P	32 S	35.5 Cl	40 Ar
	13	14	15	16	17	18
65 Zn	70 Ga	73 Ge	75 As	79 Se	80 Br	84 Kr
	31	32	33	34	35	36
112 Cd	115 In	119 Sn	122 Sb	128 Te	127 I	131 Xe
	49	50	51	52	53	54
201 Hg	204 Tl	207 Pb	209 Bi	209 Po	210 At	222 Rn
	81	82	83	84	85	86

Run mise been?

Curiyayaasha (elements) isla qaybta (part) miiska xilliyeedka (periodic table) waxay u dhaqmaan si isku mid ah midba midka kale.



Run



Been



Sabab u sheeg jawaabtaada

a

Curiyayaasha (elements) leh sifooyin kiimiko (chemical) iyo jireed (physical) oo isku mid ah waxay ku dhow yihiin midba midka kale miiska xilliyeedka (periodic table).



b

Curiyayaasha (elements) waxaa loo habeeyey taariikhda (date) laga helay miiska xilliyeedka (periodic table).

Ardayda (students) kee/kutub qeexaya sifooyinka kiimikada (chemical properties) curiye (element)?

Caasha



Sida uu u dhalaalayo (shiny) curiye (element).

Sida curiye (element) ula falcelin doono (react) kiimikooyin (chemicals) kale.



Cali

Marka curiye (element) xoog (strong) yahay.

Walxo (substances) cusub ayaa la sameeyaa marka uu falceliyo (reacts).

Barta karkarinta (boiling point) curiye (element).



Suad



Cabdi



Yacquub

1) Ardaydee (ama ardayda) ku tilmaamaya sifooyinka kiimikaad ee curiye (element)?

Caasha



Sida uu u dhalaalayo (shiny) curiye (element).

Sida curiye (element) uu ula falgalo kiimikooyinka kale.



Cali

Marka curiye (element) uu xooggan yahay.

Walxo cusub ayaa la sameeyaa marka uu falgalo.

Heerkulka karkarinta ee curiye (element).



Cabdi



Yacquub



Suad



Ardaydee (ama ardayda) ku tilmaamaya sifooyinka jireed ee curiye (element)?

**Caasha**

Heerkulka dhalaalka ee curiye (element).

**Cabdi**

Haddii curiye (element) uu adag yahay.

Haddii curiye (element) uu la falgalo koloriin.

**Cali**

Haddii curiye (element) uusan falgalin.

Yacquub**Suad**

Heerkulka uu qalajku (silver) ku dhalaalo.



2) Ardaydee (ama ardayda) ayaa qeexaya sifooyinka jireed ee curiye (element)?



Caasha

Heerka dhalaalka ee curiye (element).

Haddii curiye (element) uu falceliyo koloriin (chlorine).



Cali



Cabdi

Haddii curiye (element) uu adag yahay.

Haddii curiye (element) uu yahay mid aan falcelin (unreactive).

Yacquub



Heerkulka qalinka (silver) ku dhalaalo.

Suad



Qalinku (silver) waa curiye (element). Halkan waxaa ah liis sifooyinka qalinka (silver).

U kala saar sifooyinka kiimikada (chemical) iyo kuwa jireed (physical).

heerka dhalaalka = 962°C

adag

wuxuu la falceliyaa koloriin (chlorine)

wuxuu sameeyaa walxo cusub markuu taabto oksijiin (oxygen)

wuxuu qaadi doonaa koronto (electricity)

wuxuu la falceliyaa aashitada hydrochloric (hydrochloric acid)

waa la qaloocin karaa qaabab kala duwan dhalaalaya marka la nadiifiyo

sifooyinka jireed ee qalinka (silver)	sifooyinka kiimikada ee qalinka (silver)
barta dhalaalka = 962°C adag wuxuu qaadi doonaa koronto (electricity) waa la qaloocin karaa qaabab kala duwan dhalaalaya marka la nadiifiyo	wuxuu la falgalaa koloriin (chlorine) wuxuu sameeyaa walxo cusub markuu la xiriiro oksijiin (oxygen) wuxuu la falgalaa aashitada hydrochloric (hydrochloric acid)

Curiyeyaasha (elements) waa nadiif kiimiko ah laakiin way isla falgali karaan.

Curiye kastaa wuxuu leeyahay barta dhalaalka iyo karkarinta go'an.

Curiye kastaa wuxuu leeyahay sifooyin jireed iyo kiimiko oo gaar ah.

Sifooyinka curiyeyaasha (elements) way ka duwan yihiin kuwa atom (atom) keliya.

Curiyeyaasha (elements) leh sifooyin isku mid ah ayaa si wada jir ah loogu habeeyay shaxda xilliyeedka (periodic table).