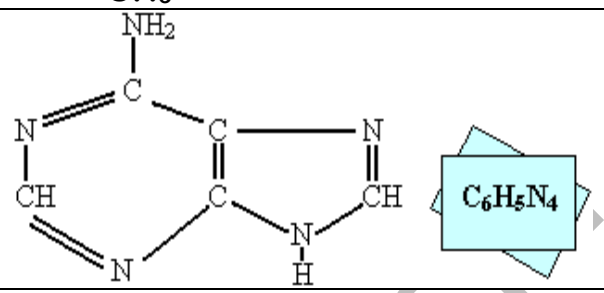
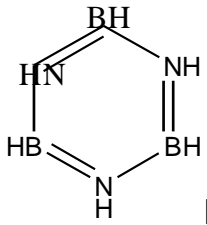



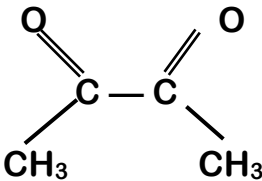
KISLOTALAR	
Arsenit kislota	H_3AsO_3
Bromat kislota	$HBrO_3$
Bromid kislota	HBr
Dixromat kislota	$H_2Cr_2O_7$
Fosfit kislota	H_3PO_3
Ftorid kislota	HF
Gipobromid kislota	$HBrO$
Gipofosfit kislota	H_3PO_2
Gipoxlorid kislota	$HClO$
Gipoyodid kislota	HJO
Karbonat kislota	H_2CO_3
Manganat kislota	H_2MnO_4
Metaborat kislota	HBO_2
Metafosfat kislota	HPO_3
Metasilikat kislota	H_2SiO_3
Nitrat kislota	HNO_3
Nitrit kislota	HNO_2
Ortoborat kislota	H_3BO_3
Ortofosfat kislota	H_3PO_4
Ortosilikat kislota	H_4SiO_4
Ortoyodat kislota	H_5JO_6
Permanganat kislota	$HMnO_4$
Persulfat kislota	$H_2S_2O_4$
Peroxlorat kislota	$HClO_4$
Peryodat kislota	HJO_4
Rodanid kislota	$HSCN$
Selenat kislota	H_2SeO_4
Selenid kislota	H_2Se
Selenit kislota	H_2SeO_3
Sianat kislota	$HOCN$
Sianid kislota	HCN
Silikat kislota	H_2SiO_3
Sulfat kislota	H_2SO_4
Sulfid kislota	H_2S
Sulfit kislota	H_2SO_3
Tetraxromat kislota	$H_2Cr_4O_{13}$
Trimetafosfat kislota	$H_3(PO_3)_3$
Trixromat kislota	$H_2Cr_3O_{10}$
Xlorat kislota	$HClO_3$
Xlorid kislota	HCl
Xlorit kislota	$HClO_2$
Xromat kislota	H_2CrO_4
Yodat kislota	HJO_3
Yodid kislota	HJ

MODDALAR VA ULARNING NOMLARI

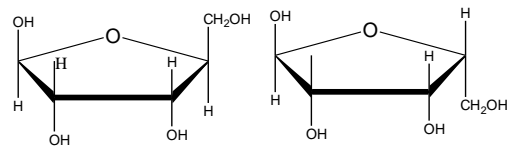
Modda nomi	Formulasi
2-metil-butadiyen-1,3 yoki izopren	$\begin{array}{c} \text{CH}_2 = \text{C} - \text{CH} = \text{CH}_2 \\ \\ \text{CH}_3 \end{array}$
Adenin	
Adipin kislota	HOOC — (CH ₂) ₄ — COOH neylon tolasi olish uchun ishlatiladi.
Ablest	3MgO • 2SiO ₂ • 2H ₂ O
Achchiqtosh	KAl(SO ₄) ₂ • 12H ₂ O
Achchiqtuz (infimiz tuzi, taxir tuz)	MgSO ₄ • 7H ₂ O
Adsarbsida	Bir modda ustiga ya'ni yuzasiga ikkinchi bir moddaning yutilishidir.
Adsorbent	Yuzasida yutilish jarayoni yuz beradigan moddalar.
Akril kislota	CH ₂ = CH — COOH
Akronitral	CH ₂ = CH — C ≡ N
Akrolein	$\text{CH}_2 = \text{CH} - \overset{\text{O}}{\parallel}{\text{C}} - \text{H}$
Alanin	$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Albaster (yarim kuydirilgan gips)	CaSO ₄ • 0,5H ₂ O
Albit	Na ₂ O • Al ₂ O ₃ • 6SiO ₂
Albit	[Na(AlSi ₃ O ₈)], Na ₃ O • Al ₂ O ₃ • 6SiO ₂
Aldama rux	ZnS
Alebaster	2CaSO ₄ • H ₂ O
Allen	CH ₂ = C = CH ₂
Alunit	K ₂ SO ₄ • Al ₂ (SO ₄) ₃ • 2Al ₂ O ₃ • 6H ₂ O
Alunit	K ₂ SO ₄ • Al ₂ (SO ₄) ₃ • Al ₂ O ₃ • 6H ₂ O
Alyumel	Ni [95%] • Al [1,8–2,5%] • Mn [1–2,2%] • Si [0,88–1,15%] dan iborat Qotishma xromel va alyumel elektor xosi temperatura o'zgartirishida juda sezgir kater bo'gani uchun termoo'lchagichlar, termoparalar, yasamasi ishlatiladi.

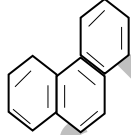

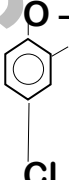
Alyuminiy digidrofosfat	$\text{Al}(\text{H}_2\text{PO}_4)_3$
Alyuminiy gidrofosfat	$\text{Al}_2(\text{HPO}_4)_3$
Alyuminiy karbid	Al_4C_3
Alyuminiy sulfat	$\text{Al}_2(\text{SO}_4)_3$
Amblironit	$\text{LiAl}(\text{PO}_4)\text{F}$
Amil (pentil) radikal	C_5H_{11}
Amilen, metilatsetilen, propin	$\text{CH} \equiv \text{C} - \text{CH}_3$
Aminobenzol (anilin)	$\text{C}_6\text{H}_5 - \text{NH}_2$
Aminoetan kislota	$\begin{array}{c} \text{CH}_2 - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Aminosirka kislota	$\begin{array}{c} \text{CH}_2 - \text{COOH} \\ \\ \text{NH}_2 \end{array}$
Amitist (agat), qum, kvars	SiO_2
Ammiak, azot gidridi	NH_3
Ammiakli selitra	NH_4NO_3
Ammiakli selitra	NH_4NO_3
Ammofos	$\text{NH}_4\text{H}_2\text{PO}_4 \cdot (\text{NH}_4)_2\text{HPO}_4$
Ammofos	$\text{NH}_4\text{H}_2\text{PO}_4 \cdot (\text{NH}_4)_2\text{HPO}_4$
Ammofos	$\text{NH}_4\text{H}_2\text{PO}_4$ yoki $(\text{NH}_4)_2\text{HPO}_4$
Ammoniy digidroortofosfat	$\text{NH}_4\text{H}_2\text{PO}_4$
Ammoniy dixromat	$(\text{NH}_4)_2\text{Cr}_2\text{O}_7$
Ammoniy gidroortofosfat	$(\text{NH}_4)_2\text{HPO}_4$
Ammoniy sianat	NH_4CNO
Ammoniy sulfide	$(\text{NH}_4)_2\text{S}$
Ammoniy temir (III) achchiqtosh	$(\text{NH}_4)\text{FeSO}_4)_2 \cdot 12\text{H}_2\text{O}$
Ammoniy temir achchiqtosh	$(\text{NH}_4)\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
Ammoniy xlorid	NH_4Cl
Ammoniyli selitra	NH_4NO_3
Amorf qumtuproq	$\text{SiO}_2 \cdot n\text{H}_2\text{O}$
Angidrit	CaSO_4
Anilin (benzil amin, aminobenzol)	$\text{C}_6\text{H}_5\text{NH}_2$
Anorganik benzol	 <p>bunda 3 $\uparrow\uparrow$ bog` o`zaro qoplashmagan</p>
Anorit	$\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$ yoki $\text{Ca}(\text{Al}_2\text{Si}_2\text{O}_8)$
Anortit	$\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$
Antimonit	Sb_2S_3

Antoamin	$\text{C}_{14}\text{H}_{33}$ yoki $\text{C}_{14}\text{H}_{33}$
Appatit	$\text{Ca}_5(\text{PO}_4)_3\text{F}_2(\text{OH})_2$
Arabinoza	$\text{C}_5\text{H}_{10}\text{O}_5$
Araxidon kislota	$\text{C}_{19}\text{H}_{31}\text{COOH}$
Argentit	Ag_2S
Argentit (kumush yaltirog'i)	Ag_2S
Argentit, kumush yaltirog'i	Ag_2S
Arginin	$\text{NH}_2-\underset{\text{NH}}{\underset{\parallel}{\text{C}}}-\text{NH}-\text{CH}_2-\underset{\text{NH}_2}{\underset{ }{\text{CH}_2}}-\text{CH}_2-\text{CH}-\text{COOH}$
Arsenit kislota	H_3AsO_3
Asbest	$\text{CaO} \cdot 3\text{MgO} \cdot 4\text{SiO}_2$
Asbest	$3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$
Asharit	$2\text{MgO} \cdot \text{B}_2\text{O}_3 \cdot \text{H}_2\text{O}$
Asparagin	$\text{HOOC}-\underset{\text{NH}_2}{\underset{ }{\text{CH}}}-\text{CH}_2-\text{CONH}_2$
Asparagin kislota	$\text{HOOC}-\text{CH}(\text{NH}_2)-\text{CH}_2\text{COOH}$
Astbest	$3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$
Astraxanit	$\text{Na}_2\text{SO}_4 \cdot \text{MgSO}_4 \cdot 4\text{H}_2\text{O}$
Atsetaldegid (sirka aldegid yoki metanal)	CH_3-CHO yoki $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$
Atsetamid (Sirka kislotaning mazi)	$\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{NH}_2$
Atsetat tola	$\text{C}_6\text{H}_7\text{O}_2$ $\begin{matrix} \text{OCOCH}_3 \\ \text{OCOCH}_3 \\ \text{OCOCH}_3 \end{matrix}$
Atsetilen (etin)	$\text{HC} \equiv \text{CH}$ yoki C_2H_2
Atseton (binarsaton), dimetilketon, propanon	$\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$
Auratlar	$\text{KAuO}_2 \cdot 3\text{H}_2\text{O}$
Azafoska	$(\text{NH}_4)_3\text{PO}_4$
Azid kislota	HN_3 yoki $\text{H}-\text{N}=\text{N} \equiv \text{N}$
Babbatlar	Pb [65%] • Sn [19–17%] • Sb [15–17%] • Cu [2%] metallar saqlagan qotishmalar bo'lib padoshnik ishlab chiqarishning asosiy materiali hisoblanadi.
Balost	CaSO_4
Barit	BaSO_4 (oq ↓)
Bariy peroksid	BaO_2
Bariy selenat	BaSeO_4
Bariy sulfatning nordon tuzi	$\text{Ba}(\text{HSO}_4)_2$
Bariyli shpat	$\text{BaO} \cdot \text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$
Bariyli suv	$\text{Ba}(\text{OH})_2$

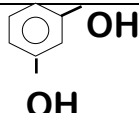
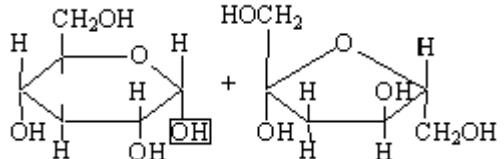
Bastnezit	$(\text{Ce, La})\text{FCO}_3$
Benzil spirt	 $\text{CH}_2 - \text{OH}$
Benzol	C_6H_6
Benzoy kislota	$\text{C}_6\text{H}_5\text{COOH}$
Beril	$(\text{Be}_3\text{Al}_2)\text{Si}_6\text{O}_{18}$
Berill	$3\text{BeO} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$
Berinit	H_2BeO_2
Berlin sarig'i (berlin zangorisi, lazuri)	$\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$
Bertole tuzi	KClO_3
Biatsetal (diketon)	
Billur (xrustal) shisha	$\text{K}_2\text{O} \cdot \text{PbO}_2 \cdot 6\text{SiO}_2$
Billur (xrustal) shisha	$\text{K}_2\text{O} \cdot \text{PbO} \cdot 6\text{SiO}_2$
Binafsha shisha	$\text{Na}_2\text{O} \cdot \text{MnO}_2 \cdot 6\text{SiO}_2$
Binopar qorishmasi (oxakli qorishmasi), so'ndirilgan oxak	$\text{Ca}(\text{OH})_2$
Bipolyar ion	$[\text{H}_3\text{N}^+ - \text{CH}_2 - \text{COO}^-]$
Bishofit	$\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Bishofit	$\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Boksid (giltuproq)	$\text{Al}_2\text{O}_3 \cdot n\text{H}_2\text{O}$
Bor (ohaktosh, marmar, marmarid, kuydirilmagan oxak, stalogint, stalaptit), oq loy	CaCO_3
Bor karbid	B_4C_3
Bor nitrid	BN yoki $(\text{BN})_3$
Boranlar	B_2H_6
Bornit	Cu_5FeS_4
Braunit	Mn_2O_3
Braunit	Mn_2O_3
Bronza	Misning tarkibida 20% gacha Sn saqlagan, qotishmasi oson quyiladi: podshipnik, polirenlarning xalqalari klapanlar ishlab chiqarishda va badiiy buyumlar, quyqalar, quyishda ishlatiladi.
Bura	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$
Butadiyen 1,3 (divinil)	$\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$
Butadiyen kauchuk	$(-\text{CH}_2 - \text{CH} = \text{CH} - \text{CH}_2 -)$ Bu kauchuk polimerlarining sis va trans

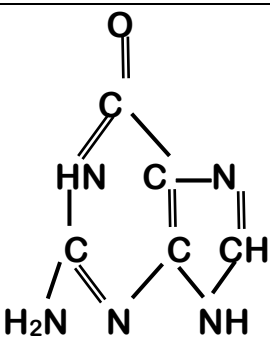
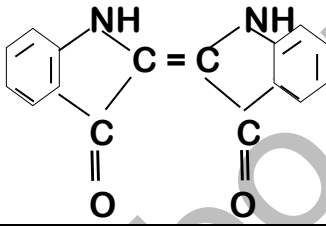
	zvenolari tasodifan bir-biriga ulanadi.
Butadiyen stirol kauchugi	$(-CH_2-CH=CH-CH_2-\underset{\text{C}_6\text{H}_5}{\text{CH}}-CH_2-)$
Byotit	$K(\text{Mg}, \text{Fe})_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$
Byuret	$\text{NH}_2-\text{CO}-\text{NH}-\text{CO}-\text{NH}_2$
Chili selitrasi	NaNO_3
Chili selitrasi	NaNO_3
Cho'yan	$[\text{Fe } 93\%] \cdot [\text{C } 4,5\%] \cdot [\text{Si } 0,5-2\%] \cdot [\text{Mn } 1,3\%] \cdot [\text{P } 0,02-2,5\%] \cdot [\text{S } 0,005-0,08\%]$
Chumoli aldegid	HCHO yoki $\text{HC} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{H} \end{array}$
Chumoli kislota	HCOOH
Chumoli kislota amidi, formaldegid	$\text{H}-\overset{\text{O}}{\parallel}{\text{C}}-\text{NH}_2$
Dala shpati (albit)	$[\text{Na}(\text{AlSi}_3\text{O}_8)]$
Dala shpati (anortit)	$[\text{Ca}(\text{Al}_2\text{Si}_2\text{O}_8)]$
Dala shpati (ortaklaz)	$[\text{K}(\text{AlSi}_3\text{O}_8)], 6\text{SiO}_2 \cdot \text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3$
Dala shpati (selzian)	$[\text{Ba}(\text{Al}_2\text{Si}_2\text{O}_8)]$
Datolit	$2\text{CaO} \cdot \text{B}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot \text{H}_2\text{O}$
Defoliant	$\text{Mg}(\text{ClO}_3)_2$ g'o'za bargini to'kishta ishlatiladi
Deraza oynasi	$\text{Na}_2\text{O} \cdot \text{CaO} \cdot 6\text{SiO}_2$
Diamid, gidrazin	N_2H_4
Didsian	$\begin{array}{c} \text{C} \equiv \text{N} \\ \\ \text{C} \equiv \text{N} \end{array}$ CN_2
Difosfat kislota (pirofosfat)	$\text{H}_4\text{P}_2\text{O}_7$
Difosfin	P_2H_4
Digidroksoaluminium karbonat	$[\text{Al}(\text{OH})_2]_2\text{CO}_3$
Digidroksoaluminium xlorid	$\text{Al}(\text{OH})_2\text{Cl}$
Dikremniy kislota	$\text{H}_6\text{Si}_2\text{O}_7$ yoki $2\text{SiO}_2 \cdot 3\text{H}_2\text{O}$
Dimetil amin	$\text{CH}_3-\text{NH}-\text{CH}_3$
Dimetilnitroza amin	$(\text{CH}_2)_2\text{N}-\text{N}=\text{O}$
Dimetilsilikat kislota	$\text{H}_2\text{Si}_2\text{O}_5$ yoki $2\text{SiO}_2 \cdot \text{H}_2\text{O}$
Dimolibden kislota	$\text{H}_2\text{Mo}_2\text{O}_7$
Dinitroglikonpol (kuchli portlovchi)	$\begin{array}{c} \text{CH}_2-\text{O}-\text{NO}_2 \\ \\ \text{CH}_2-\text{O}-\text{NO}_2 \end{array}$
Dinitroselluloza	$(\text{C}_6\text{H}_7\text{O}_2) \begin{array}{l} \nearrow \text{CH}_2-\text{O}-\text{NO}_2 \\ \rightarrow -\text{CH}_2-\text{O}-\text{NO}_2 \\ \searrow \text{CH}_2-\text{O}-\text{OH} \end{array}$

Dioksan	$\begin{array}{c} \text{CH}_2 - \text{O} - \text{CH}_2 \\ \qquad \qquad \\ \text{CH}_2 - \text{O} - \text{CH}_2 \end{array}$
Ditsian	C_2N_2
Divinil kauchuk	$\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$ kauchuk chiziqli va sterioizchil tuzilishga ega sintetik kauchuk monomeri.
Dixromat kislota, biromit	$\text{H}_2\text{Cr}_2\text{O}_7$
Diyuralyuminiy	asosiy qism Al • Cu [3,5%] • Mg, Ni, Mn [1%] metallar saqlagan mehanik ta'sirga chidamli, lekin yong'in qotishmasida, samalyotsoz, mashinasoz va boshqa asbobsoz
Dizoksiriboza	$\text{C}_5\text{H}_{10}\text{O}_4$
Dizoksiribozaning aldegid shakli	$\begin{array}{ccccccc} \text{CH}_2 & - & \text{CH} & - & \text{CH} & - & \text{CH}_2 & - & \text{C} \\ & & & & & & & & // \\ \text{OH} & & \text{OH} & & \text{OH} & & & & \text{O} \\ & & & & & & & & \backslash \\ & & & & & & & & \text{H} \end{array}$
Dizoksiribozaning keton shakli	$\begin{array}{ccccccc} \text{CH}_2 & - & \text{CH} & - & \text{C} & - & \text{CH} & - & \text{CH}_2 \\ & & & & & & & & \\ \text{OH} & & \text{OH} & & \text{O} & & \text{OH} & & \text{OH} \end{array}$
Dizoksiribozaning siklik shakli (keton)	 <p>A-shakli b-shakli</p>
Doimiy qattqlik	$\text{CaSO}_4 \cdot \text{MgSO}_4$
Dolomit	$\text{CaCO}_3 \cdot \text{MgCO}_3$
Ebonit	S [25 – 40%] Agar kauchukka S ko'p qo'shilsa kauchuk qattiq mo'rt va elastikligini yo'qotadi. Xosil bo'lgan modda ebonit deyiladi.
Eritroza (tetrozalarga mansub) aldegid shakli	$\begin{array}{ccccccc} \text{CH}_2 & - & \text{CH} & - & \text{CH} & - & \text{C} \\ & & & & // & & \backslash \\ \text{OH} & \text{OH} & \text{OH} & & \text{O} & & \text{H} \end{array}$
Eritroza (tetrozalarga mansub) keton shakli	$\begin{array}{ccccccc} \text{CH}_2 & - & \text{CH} & - & \text{C} & - & \text{CH}_2 \\ & & & & & & \\ \text{OH} & \text{OH} & \text{O} & & \text{OH} & & \text{OH} \end{array}$

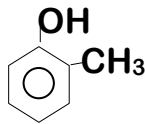
Eruvchan shisha	$K_2O \cdot Na_2O \cdot 6SiO_2$
Eruvchan shisha	Na_2SiO_3, K_2SiO_3
Etan	C_2H_6 ($CH_3 - CH_3$)
Etan kislota	CH_3COOH
Etandiol, etilenglikol	$CH_2 - OH$ $CH_2 - OH$
Etanol, etil spirt	C_2H_5OH
Etil spirt, etanol	C_2H_5OH
Etilen	C_2H_4 ($CH_2 = CH_2$) uning molekulasida π bog' xosil bo'lishida qatnashmagan P elektronlar qatnashadi.
Etilenglikol, etandiol	$CH_2 - OH$ $CH_2 - OH$
Etin (atsetilen)	C_2H_2 ($CH \equiv CH$)
Felin suyuqligi	$Cu(OH)_2$ va vino kislotaning Na va K li tuzi aralashmasi
Fenantren (antrasenning izomeri)	
Fenil radikali	$C_6H_5 -$
Fenilamin	$C_6H_5NH_2$
Feniletilen, vinilbenzol, stirol	$CH = CH_2$ 
Fenoksisirka 2,4 dioxlor kislota	$O - CH_2 - COOH$  Cl uning Na va K li tuzlari gerbitsidlar sifatida ishlatiladi.
Fenol	C_6H_5OH
Fenolformaldegid smolasi	$\left(\begin{array}{c} OH \\ \\ \text{benzene ring} \\ \\ CH_2 - \end{array} \right)_n$
Fenoxit	Kr_2SiO_4
Ferrat kislota	H_2FeO_4
Ferraxrom	$FeO \cdot Cr_2O_3$
Flyuorit	CaF_2
Formalin	formaldegidning 35 – 40% li eritmasi
Formiamid	$H - C \begin{array}{l} \text{O} \\ // \\ \text{NH}_2 \end{array}$
Formiat kislota	$HCOOH$
Fosfat angidrid	P_2O_5
Fosfin	PH_3

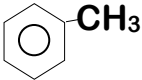

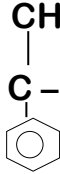
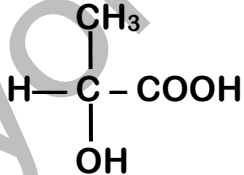
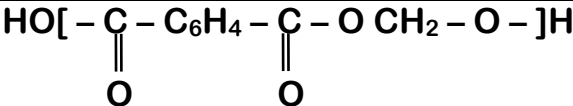
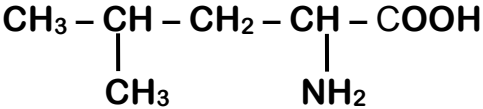
Fosfit kislota	H_3PO_3
Fosforit kukuni	$Ca_3(PO_4)_2$
Fosgen	CCl_2O yoki $COCl_2$
Fotoelementlar	Cs yoruglik energiyasini elektr energiyasiga aylantiradi.
Freon	CCl_2F_2
Fruktoza	$C_6H_{12}O_6$
Fruktoza, meva shakari	$C_6H_{12}O_6$ yoki $\begin{array}{ccccccc} CH_2 & - & CH & - & CH & - & CH & - & C & - & CH_2 \\ & & & & & & & & & & \\ OH & & OH & & OH & & OH & & O & & OH \end{array}$
Ftor peroksid	F_2O_2
Ftorapatit	$3Ca_3(PO_4)_2 \cdot CaF_2$
Fumar kislota	$\begin{array}{c} H - C - COOH \\ \\ HOOC - C - H \end{array}$
Furan	$\begin{array}{c} HC - CH \\ \quad \\ HC - CH \\ \diagdown \quad / \\ O \end{array}$
Galenit	PbS
Galit	$NaCl$
Galmay	$ZnCO_3$
Galmei	$ZnCO_3$
Gals (pb yaltirog'i)	PbS
Gausmanit	Mn_3O_4
Gausmanit	Mn_3O_4
Geksaaminnikel (II) xlorid	$Ni[(NH_3)_6Cl_2]$
Geksaammiakat	$[Me(NH_3)_6]^+$
Geksaxloran	$C_6H_6Cl_6$
Geksaxlorsiklogeksan	$C_6H_6Cl_6$
Geksoamino Nikel (III) xlorid	$Ni(NH_3)_6Cl_2$
Gematit	Fe_2O_3
Gematit (qizil temirtosh)	Fe_2O_3
Gemimorfit	$2H_4Si_2O_7(OH)_2 \cdot H_2O$
Gemoglobin	$(C_{738}H_{1166}O_{208}S_2Fe)_4$
Generator gazi	$CO + N_2 + 4184 \text{ kJ}$
Geteropoli kislota	$H_7[PO_3(MeO_7)_3]$
Getit	$2Fe_2O_3 \cdot 2H_2O$
Gidrazin, diamid	N_2H_4 yoki H_2N-NH_2
Gidrokaxonin	$\begin{array}{c} \text{OH} \\ \\ \text{OH} \end{array}$
Gidroksilamin	NH_2OH
Gidroksoalyuminiy karbonat	$Al(OH)CO_3$

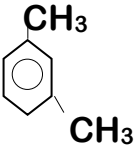
Gidroksoamin	NH_2OH
Gidroksokalsiy perxlorat	$\text{Ca}(\text{OH})\text{ClO}_4$
Gidroksoniy ioni	H_3O^+
Gidroxinon	 $\text{HO} - \text{C}_6\text{H}_4 - \text{OH}$
Gidrozin	$\text{NH}_2 - \text{CH} - \text{COOH}$ $\text{CH}_2 - \text{C}_6\text{H}_4 - \text{OH}$
Giltuproq	Al_2O_3
Giltuproq	Al_2O_3
Gipofosfit	HPO_2
Gipofosfit kislota	H_3PO_2
Giponitrit	$\text{H}_2\text{N}_2\text{O}_2$
Gips	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
Glauber tuzi (Mibrit)	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
Glauberit	$\text{CaSO}_4 \cdot \text{Na}_2\text{SO}_4$
Glikonal	NH_2 $\text{CH}_2 - \text{C} \begin{matrix} \text{O} \\ \parallel \\ \text{OH} \end{matrix}$
Gliozem	Al_2O_3
Glioksal	$\text{OHC} - \text{CHO}$
Glitserin	$\text{CH}_2(\text{OH}) - \text{CH}_2(\text{OH}) - \text{CH}_2(\text{OH})$
Glituin	NH_2 $\text{CH}_2 - \text{C} \begin{matrix} \text{O} \\ \parallel \\ \text{OH} \end{matrix}$
Glutamin kislota	$\text{NH}_2 - \text{CH} - \text{COOH}$ $\text{CH}_2 - \text{CH}_2 - \text{COOH}$
Glyukon kislota	$\text{CH}_2\text{OH} - (\text{CH} - \text{OH})_4 - \text{C} - \text{OH}$
Glyukoza (uzum shakari) (aldegid spirt)	$\text{C}_6\text{H}_{12}\text{O}_6$
Glyukoza ning aldegid shakli	$\text{CH}_2 - \text{CH} - \text{CH} - \text{CH} - \text{CH}_2 - \text{C}$ OH OH OH OH H
Glyukoza ning xalqa shakli	 $\alpha\text{-D-glyukoza} \quad \beta\text{-D-fruktoza}$


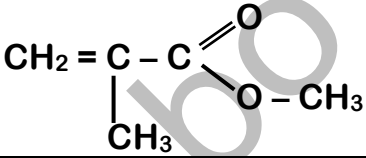
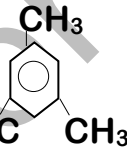
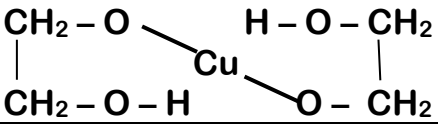
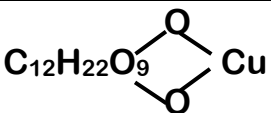
Granit	$N(Al_3Si)_4O_8$
Griniar reaktivi	CH_3MgCl
Grinokit	CdS
Guanin	 <div style="border: 1px solid black; display: inline-block; padding: 5px; margin-left: 20px;">$C_5H_5N_5$</div>
Ichimlik soda	$NaHCO_3$
Imenit (temir titan)	$FeTiO_3$
Indigo	
Infraqizil nurlarga sezgir fotoelement	In
Ingliz tuzi (taxir tuz)	$MgSO_4 \cdot 7H_2O$
Insulin	$C_{254}H_{377}N_{65}O_{75}S_6$ $Mr = 6000g$
Iotsich reaktivi	$CH \equiv CMgCl$
Is gazi	CO
Izoamil radikali	$CH_3 - \underset{\substack{ \\ CH_3}}{CH} - CH_2 - CH_2 -$
Izobutilformiat, chumoli kislotaning izobutil efiri	$HCOOCH_2 - CH(CH_3) - CH_3$
Izoleysin	$NH_2 - \underset{\substack{ \\ CH_3}}{CH} - COOH$ $CH_3 - CH - CH_2 - CH_3$
Izooktan	$CH_3 - \underset{\substack{ \\ CH_3}}{CH} - CH_2 - \underset{\substack{ \\ CH_3}}{CH} - CH_3$
Izopren, 2-metil-butadiyen-1,3	$CH_2 = \underset{\substack{ \\ CH_3}}{C} - CH = CH_2$ (tabiiy kauchuk monomeri)
Izopropilbenzol (kumol)	$CH_3 - \underset{\substack{ \\ \text{benzene ring}}}{CH} - CH_3$
Javel suvi	$(KOH + Cl_2)$ yoki $KCl \cdot KClO \cdot H_2O$
Javel suzi	$KClO \cdot KCl$

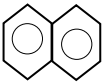
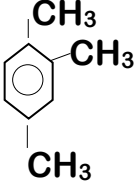
Jez	Tarkibida 10% dan 50% gacha Zn saqlagan Cu qotishmasi asbobsozlikda va motorsozlikda ishlatiladi.
Jez Qotishmasi	Cu_3Zn_2
Kainit	$KCl \cdot MgSO_4 \cdot 3H_2O$
Kainit	$KCl \cdot MgSO_4 \cdot 3H_2O$
Kaliy alyuminiyli achchiqtosh	$K_2SO_4 \cdot Al_2(SO_4)_3$ yoki $KAl(SO_4)_2, KAl(SO_4)_2 \cdot 12H_2O$
Kaliy digidrofosfat	KH_2PO_4
Kaliy dixromat	$K_2Cr_2O_7$
Kaliy geksagidroksooplumbat	$K_4[Pb(OH)_6]$
Kaliy geksatsiono – (II) ferrat	$K_4[Fe(CN)_6]$
Kaliy permanganat	$KMnO_4$
Kaliy peroksid	K_2O_2
Kaliy stearat (suyuq sovun)	$C_{17}H_{35}COOK$
Kaliy superoksid	K_2O_4
Kaliy tetraxromat	$K_2Cr_4O_{13} \cdot 12H_2O$
Kaliy trixromat	$K_2Cr_3O_{10}$
Kaliy xlorat	$KClO_3$
Kaliyli selitra	KNO_3
Kalloksilen	Tabobatda qo'llashga qulay tug'diruvchi xususiyatga ega. U dinitroselluloza spirt va dietil efir aralashmasini eritish bilan olinadi. Selluloza mono va diefiri (N = 11,17%) aralashmasi "Kalloksilen" deyiladi.
Kalomel	Hg_2Cl_2
Kalsinatsil soda	Na_2CO_3
Kalsiy digidrofosfat	$Ca(H_2PO_4)_2$
Kalsiy fosfat	$Ca_3(PO_4)_2$
Kalsiy gidrofosfat	$CaHPO_4$
Kalsiy karbid	CaC_2
Kalsiy saxarad	$C_6H_7O \begin{matrix} O \\ / \quad \backslash \\ (OH)_3 \\ \backslash \quad / \\ O \end{matrix} Ca$
Kalsiy saxarid	$C_{12}H_{22}O_{11}Ca$
Kalsiy sianid	$Ca(CN)_2$
Kalsiyli selitra	$Ca(NO_3)_2$
Kalsiy narilgan soda	Na_2CO_3
Kaolin (toza tuproq)	$Al_2O_3 \cdot 2SiO_2 \cdot 3H_2O$
Kaolinit	$Al_2Si_2O_5(OH)_4$ yoki $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$ kremniyning tabiatda eng ko'p tarqalgan birikmasi.
Kapron (poliamid tola)	$(-NH-(CH_2)_5-C-)n$

	$\begin{array}{c} \parallel \\ \text{O} \end{array}$
Kapron kislota	$\text{CH}_3 - (\text{CH}_2)_4 - \text{COOH}$
Karbamid	$\text{CO}(\text{NH}_2)_2$
Karbamid (siydikchil), mochevina	$\text{CO}(\text{NH}_2)_2$
Karbonsimetilselluloza	$\text{C}_6\text{H}_7\text{O}_2(\text{OH})_2 - \text{O} - \text{CH}_2 - \text{COOH}$
Karbol kislota (fenol)	$\text{C}_6\text{H}_5\text{OH}$
Karbonil	CH_3OH
Karborund	SiC
Karborund yoki Kremniy (IV) karbid	SiC
Karnallit	$\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Karnolit	$\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Karnotit	$\text{K}_2\text{O} \cdot 2\text{VO}_3 \cdot 3\text{H}_2\text{O}$
Karpolat tola	$\begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{CH}_2 \\ \diagup \quad \diagdown \\ \text{H}_2\text{C} \quad \text{C} = \text{O} \\ \diagdown \quad \diagup \\ \text{CH}_2 - \text{CH}_2 - \text{CH}_2 \end{array}$
Kassiterit	SnO_2
Kaustik soda	NaOH
Kernit	$\text{Na}_2\text{B}_4\text{O}_7 \cdot \text{H}_2\text{O}$
Kimyoviy shisha	$\text{K}_2\text{O} \cdot \text{CaO} \cdot 6\text{SiO}_2$
Kinovar	HgS
Kir soda	Na_2CO_3
Kislotali selitra	KNO_3
Kizerit	$\text{MgSO}_4 \cdot \text{H}_2\text{O}$
Klechatka (paxta tolasi, selluloza)	$\text{C}_6\text{H}_{10}\text{O}_5$
Ko'k shisha	$\text{Na}_2\text{O} \cdot \text{CoO} \cdot 6\text{SiO}_2$
Koks	C (95% toza C)
Koks gazi	H [35%] • CO [20%] • CH_4 [15%] • CO_2 [18%] • N [11%]
Konstantal	Cu [60%] • Ni [38-40%]
Korund	Al_2O_3
Kraxmal	$\text{C}_6\text{H}_{10}\text{O}_5$
Krezol	
Kriolit	Na_3AlF_6 yoki $3\text{NaF} \cdot \text{AlF}_3$
Kristall soda	$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
Krokoit	PbCrO_4
Krotonil	$\text{HC} \equiv \text{C} - \text{CH}_2 - \text{CH}_3$
Ksenon tetraftorid	XeF_4
Ksenotim	$(\text{V}, \text{Eu}, \text{Cd})\text{PO}_4$
Ksilol	CH_2

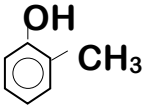
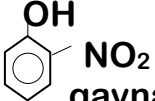
	
Kuldiruvchi gaz	N ₂ O tibbiyotda narkozga ishlatiladi.
Kumol (Izopropilbenzol)	CH ₃ - CH - CH ₃ 
Kumol gidroperoksid	CH ₃ - C - O - O H 
Kumush yaltirog'i (argentit)	Ag ₂ S
Kupret	(C ₂ H ₂) <i>n</i>
Kuprit	Cu ₂ O
Kuydirilgan (so'ndirilgan, oxak no'mi) oxak	CaO
Kuydirilgan magneziya	MgO
Kuydirilmagan oxak	CaCO ₃
Kvars (qum, shisha, oqitist, agat, emma)	SiO ₂
Laborak suvi	(NaOH + Cl ₂)
Laktoza (sut shakari)	C ₁₂ H ₂₂ O ₁₁
Laktoza, sut kislota	
Latepis	Kauchuk eritmasi "Latepis" deyiladi.
Lautarit	Ca(JO ₃) ₂
Lavsan (poliefir) tolasi, polietilen tereftal	HO[- C - C ₆ H ₄ - C - O CH ₂ - O -] _n H 
Lazurit	(Na, Ca) ₈ (Al, Si) ₂₂ O ₂₄ SO ₄
Lepidolit	Li ₂ KAl[Si ₄ O ₁₀ (F, H ₂ O) ₂]
Lepidolit	Li ₂ KAl[Si ₄ O ₄ (F, H ₂ O) ₂]
Leytsin	CH ₃ - CH - CH ₂ - CH - COOH 
Leytsit	K ₂ O • Al ₂ O ₃ • 4SiO ₂
Ligandlar	Kompleks birikmalarning asosiy tarkibiy qismidan biridir. Kimyoviy bog'lanishda ishtirok etmaydi. Elektron jufti bo'lgan manfiy zayadli ionlar: Cl ⁻ , Br ⁻ , J ⁻ , A ⁻ , CN ₃ ⁻ , CN ⁻ , OH ⁻ , SO ₄ ²⁻ , NO ₂ ⁻ , NO ₃ ⁻ , CO ₃ ²⁻ , S ²⁻ , CH ₃ COO ⁻ , HCOO ⁻ v/h va neytral

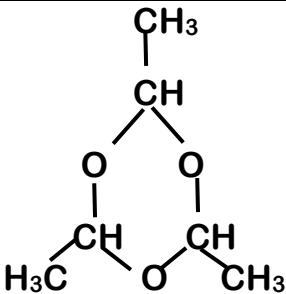
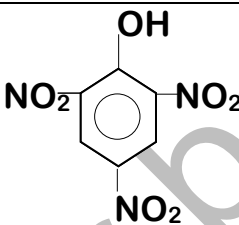
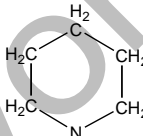
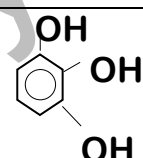
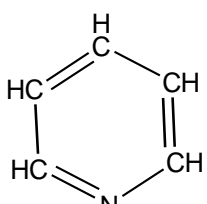
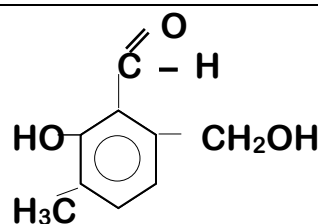
	molekulalar: H ₂ O, NH ₃ , CO, NO, C ₆ H ₆ , C ₂ H ₂ lar kiradi.
Limon kislota	$\text{HOOC} - \text{CH}_2 - \underset{\text{COOH}}{\overset{\text{OH}}{\text{C}}} - \text{CH}_2 - \text{COOH}$
Limonit	2Fe ₂ O ₃ • 3H ₂ O
Linol	C ₁₇ H ₃₁ COOH
Linol kislota	C ₁₇ H ₃₁ COOH
Linolein kislota	C ₁₇ H ₂₉ COOH
Linolin	C ₁₇ H ₂₉ COOH
Linolin	C ₁₇ H ₂₉ COOH (3 ta qo'sh bog')
Lizin	$\text{NH}_2 - (\text{CH}_2)_4 - \underset{\text{NH}_2}{\text{CH}} - \text{COOH}$
Lyapis	AgNO ₃
Magnetit	Fe ₃ O ₄
Magnezial sement	MgO • MgCl ₂
Magnezit	MgCO ₃
Magneziya	MgO
Magnitli temirtosh	Fe ₃ O ₄
Magniy amid	Mg(NH ₂) ₂
Magniy digidrofosfat	Mg(H ₂ PO ₄) ₂
Magniy imid	MgNH
Makroo'g'itlar	10ta C, O, H, N, P, K, S, Ca, Mg, Fe
Malaxit	Cu(OH) ₂ • CuCO ₃ yoki Cu ₂ (OH) ₂ CO ₃
Malein kislota, Fumar kislota trans-sis izomeri	$\begin{array}{c} \text{CH} - \text{COOH} \\ \\ \text{CH} - \text{COOH} \end{array}$
Malon kislota	HOOC - CH ₂ - COOH
Maltoza (don shakari), saxaroza izomeri	C ₁₂ H ₂₂ O ₁₁
Manganat kislota	H ₂ MnO ₄
Margimush	As ₂ O ₃
Marmartosh, bor (ohaktosh, marmar, marmarid, kuydirilmagan oxak, stalogint, stalaptit), oq loy	CaCO ₃
Metafosfat kislota	HPO ₃
Metakreazol	
Metakremniy kislota	H ₂ SiO ₃
Metakril kislota (2 metil	$\text{CH}_2 = \underset{ }{\text{C}} - \text{COOH}$

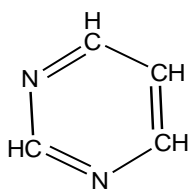
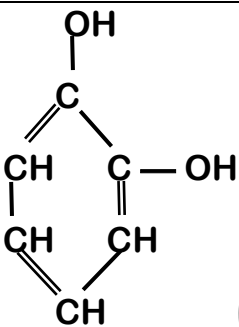
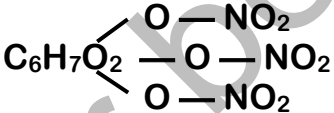
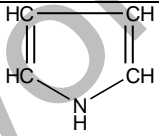
propilen kislota)	CH_3
Metan	CH_4
Metan (chumoli) kislota	HCOOH
Metanal (chumoli aldegid, formaldegid)	HCHO
Metanitrofenol	 <p>qaynash t^0 ning 97°C dan yuqoriroq bo'lishining sababi metanitrofenolda molekulararo H bog'lanish mavjudligidir.</p>
Metasilikat kislota	H_2SiO_3 yoki $\text{SiO}_2 \cdot \text{H}_2\text{O}$
Metil xlorid	CH_3Cl
Metilamin	$\text{CH}_3 - \text{NH}_2$
Metilmerkaptan	$\text{CH}_3 - \text{SH}$
Metilmetakrilat kislota	
Meuskovit	$\text{K}_2\text{Al}_4(\text{AlSi}_3\text{O}_4)_2(\text{OH})_2\text{O}_4$
Mezitelin	
Mikroo'g'itlar	B, Cu, Co, Mn, Zn, Mo, J
Millon reaktivi	$\text{Pb}(\text{NO}_3)_2 \cdot \text{HNO}_3$
Mirabilit	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
Mis glikolyat	
Mis kolchedani	CuFeS_2
Mis kolchedani (xalkopirit)	CuFeS_2
Mis kuporosi	$[\text{Cu}(\text{H}_2\text{O})_4]\text{SO}_4 \cdot \text{H}_2\text{O}$ yo $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Mis saxarad	
Mis to'tiyosi	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Mis xloridning asos tuzi	$\text{Cu}(\text{OH})\text{Cl}$
Mis yaltirog'i, xalkozin	Cu_2S
Mitrabit (glauber tuzi)	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
Mochevina (karbamid)	$\text{CO}(\text{NH}_2)_2$
Momsula, oq fosfor	P_4
Monatsid	$(\text{Ge}, \text{La}, \text{Nd})\text{PO}_4$
Mor tuzi	$\text{Fe}(\text{NH}_4)_2(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$

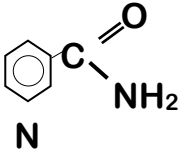
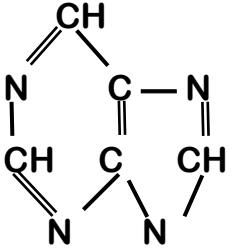
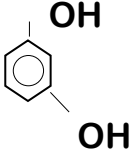
Moy (butan) kislota	C_3H_7COOH
Moy aldegid	C_3H_7CHO
Muvaqqat qattqlik	$CaHCO_3 \cdot MgHCO_3$
Naftalin	 $C_{10}H_8$
Narkoz efiri, dietil efiri	$C_2H_5 - O - C_2H_5$ asabni bo'shashtirish xossasiga ega bo'lganligi uchun tibbiyotda qo'llaniladi.
Nasturan	U_3O_8
Natriy disulfid	Na_2S_2
Natriy fenolyat	C_6H_5ONa
Natriy kuprit	$Na_2[Cu(OH)_4]$
Natriy plumbat	Na_2PbO_2
Natriy stearat, qattiq sovun	$C_{17}H_{35}COONa$
Natriy tetragid - roksoberillat	$Na_2[Be(OH)_4]$
Natriyli selitra	$NaNO_3$
Natron (xlorli) oxak	$Ca(ClO)_2$
Naylon 6,6 tolasi	$HO - \left[\overset{\overset{O}{ }}{C} - (CH_2)_4 - \overset{\overset{O}{ }}{C} - \overset{\overset{H}{ }}{N} - (CH_2)_6 - NH \right] -$
Nefelin	$Na_2O \cdot Al_2O_3 \cdot 2SiO_2$ yoki $Na_2[Si_2Al_2O_8]$
Neopentan	$\begin{array}{c} CH_3 \\ \\ CH_3 - C - CH_3 \\ \\ CH_3 \end{array}$
Nikel tetrakarbamid	$Ni(CO)_4$
Nitron (poliakrilonitron)	$\left[-CH_2 - \underset{\underset{CH_2 \equiv N}{ }}{CH} - \right]_n$
Nitropropan	$C_3H_7 - NO_2$ suvda kam eriydigan suyuqlik
Nixrom	$Ni [60\%] \cdot Fe [14 - 16\%] \cdot Cr [24 - 26\%]$ iborat qotishma, yuqori elektr qarshiligiga ega bo'lgani uchun isitish moslamalari ishlab chiqarishda ishlatiladi.
Norvegiya selitrasi	$Ca(NO_3)_2$
Nosimmetrik trimetilbenzol	
Novshadil spirt	NH_4OH
O'lik gips, suvsiz gips, kalsiy	$CaSO_4$

sulfat	
O'q o'tmaydigan shisha	$K_2O \cdot PbO \cdot nB_2O_3$ tashqi ta'sirga chidamli shisha
O'ta og'ir suv	T_2O (T) – tritiy
Oddiy shisha	$Na_2O \cdot CaO \cdot 6SiO_2$
Oddiy superfosfat	$Ca(H_2PO_4)_2 \cdot 2CaSO_4$
Og'ir suv	D_2O (D) – deyteriy
Oksalat kislota	$HOOC - COOH$
Oksoozon fluorid	F_2O_4
Olein kislota	$CH - (CH_2)_7 - CH_3$ $CH - (CH_2)_7 - COOH$ yoki $C_{17}H_{35}COOH$
Oleum	$H_2SO_4 \cdot SO_3$ yoki $H_2S_2O_7$
Olevin	Mg_2SiO_4
Olivin	$(Mg, Al)SiO_4$
Olma kislota	$COOH - CH - CH_2 - COOH$ OH
Oltin kislota	$H[AuCl_4]$
Oltinugurt guli	S 444,6°C da to'q qo'ng'ir bug' xosil qilib qaynaydi. Agar S bug'i tez sovitsa S ning juda mayday kristallaridan iborat mayin kukun xosil bo'ladi, u Oltinugurt guli deyiladi.
Oq chil	$Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$ kremniyning tabiatda eng ko'p tarqalgan birikmasi. Silikat sanoatida foyans va chinni olinadi.
Oq fosfor, momsula	P_4
Oq loy, marmartosh, bor (ohaktosh, marmar, marmarid, kuydirilmagan oxak, stalogint, stalaptit),	$CaCO_3$
Oq slyuda	$K_2O \cdot 3Al_2O_3 \cdot 6SiO_2 \cdot 2H_2O$
Oqartirgich oxak yoki xlorli oxak	$CaCl(ClO)$
Oqartiruvchi xlor, xlorli oxak	$Ca(ClO)_2 \cdot CaCl_2$
Organik shisha	$CH_2 = C - COOCH_3$ CH ₃
Organik shisha (polimetil metakriat)	$\begin{array}{c} O \\ \\ C - O - CH_3 \\ \\ (-CH_2 - C -)_n \end{array}$

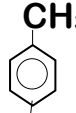
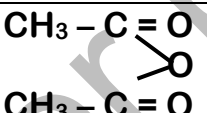
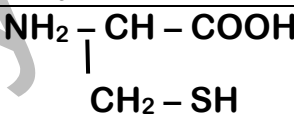
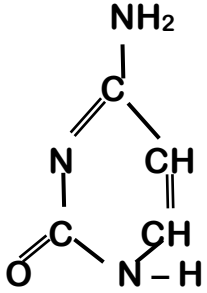
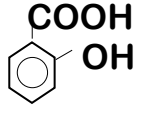
	$\begin{array}{c} \\ \text{CH}_3 \\ \text{Yoki } (-\text{CH}_2-\text{C}(\text{CH}_3) \\ (\text{COOCH}_3)-)_n \end{array}$
Ortoklaz (dala shpati)	$\text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$ yoki KAlSi_3O_8
Ortokreazol	
Ortokremniy kislota	H_4SiO_4
Ortomanganat kislota	H_4MnO_4
Ortonitrofenol	 <p>qaynash t^0 ning 45°C bo'lishida uning ichki molekulariyar H bog'lanish mavjudligidir.</p>
Ortosilikat kislota	H_4SiO_4 yoki $\text{SiO}_2 \cdot 2\text{H}_2\text{O}$
Ortoyodat kislota	H_5JO_6
Oxak mumi so'ndirilmagan oxak, kuydirilgan oxak	CaO
Oxak so'ndirilmagan	CaO
Oxak suti	Sutga o'xshash loyda (suspenziya). U mo'l so'ndirilgan oxak suvda aralashtirilganda xosil bo'ladi. Oxak suti xlorli oxak tayyorlashda, qand ishlab chiqarishda, o'simliklarning kasalliklariga qarshi ishlatiladigan aralashmalar tayyorlashda, daraxtlarning tanasini oqlashda ishlatiladi.
Oxak suvi	$\text{Ca}(\text{OH})_2$ ning Oxak sutini ishlatishda olinadigan tiniq eritmasi.
Oxak va qorishma	so'ndirilgan oxak $\text{Ca}(\text{OH})_2$ qim suv aralashma
oxakli qorishmasi(binopar qorishmasi), so'ndirilgan oxak	$\text{Ca}(\text{OH})_2$
Oxakli suv, so'ndirilgan oxak	$\text{Ca}(\text{OH})_2$
Oxaktosh, marmartosh, bor (marmar, marmarid, kuydirilmagan oxak, stalogint, stalaptit), oq loy	CaCO_3
Oynakka rang beradigan	Cr_2O_3 (yashil), CaO (ko'k), MnO_2 (to'q qizil)
Ozonforid	F_2O_3
Palmitin kislota, pentadekan	$\text{C}_{15}\text{H}_{31}\text{COOH}$


kislota	
Paraldegid	
Paxta tolasi, selluloza	$(C_6H_{10}O_5)_n$
Pelorgon kislota	$CH_3 - (CH_2)_7 - COOH$
Permanganat kislota	$HMnO_4$
Perovietik	$CaTiO_3$
Perxlorat kislota	$HClO_4$
Peryodat	$HJO_4 (H_5JO_6)$
Petalit	$Li_2O \cdot Al_2O_3 \cdot 8SiO_2$
Pikrin kislota, 2,4,6-trinitrotoluol	
Piperidin	 <p>Yoki $C_5H_{10}NH$</p>
Piragallol	
Piridin	<p>u dorivor modda,</p>  <p>sulfidni sintez qilishda ishlatiladi C_5H_5N</p>
Piridoksal	

Pirimidin	 <div style="border: 1px solid black; display: inline-block; padding: 2px; margin-left: 10px;">$C_4H_4N_2$</div>
Pirit, temir kolchedani	FeS_2
Pirofor	CrO
Pirokatexin, 1,2 benzoldiol	
Piroksilin, trinitroselluloza	$C_6H_7O_2$ 
Pirolyuzit	MnO_2
Pirrol	 <div style="border: 1px solid black; display: inline-block; padding: 2px; margin-left: 10px;">C_4H_5N</div> <p style="text-align: center;">kuchsiz kislota xossasini namoyon qiladi.</p>
Plavik kislota	HF
Plyumbat kislota	$H_2[PbO_2]$
Po'lat	$[Fe\ 98,3\%] \cdot [C\ 0,3-1,7\%]$
Poliakrilonitrat	$(-CH_2 - \underset{\substack{ \\ CN}}{CH} -)_n$
Poliefir tolasi, lavsan	$[-OC - C_6H_4 - COOCH_2 - CH_2O -]_n$
Polietilen	$(-CH_2 - CH_2 -)_n$
Polikaprolaktam	$[-NH - (CH_2)_5 - CO -]_n$
Polimetilmetakrilat	$(-CH_2 - \underset{\substack{ \\ Cl}}{\overset{\substack{CH_3 \\ }}{C}} - C -)_n$
Polistirol	$(-\underset{\substack{ \\ \text{C}_6\text{H}_5}}{CH} - CH_2 -)_n$
Polivinilxlorid	$(-CH_2 - \underset{\substack{ \\ Cl}}{CH} -)_n$

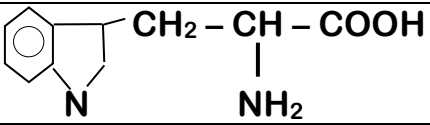
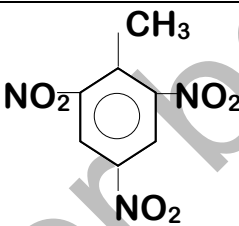
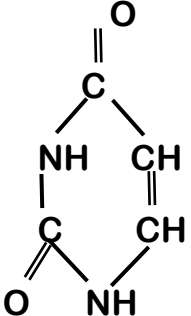
Pollutsit	$CsAl(SiO_3)_2$
Potash	K_2CO_3
PP vitamin	
Pretsipitat o'g'iti	$CaHPO_4 \cdot 2H_2O$
Propargir spirt	$HC \equiv C - CH_2 - OH$
Propil spirt	C_3H_7OH
Propilen	$CH_2 = CH - CH_3$
Propion kislota	$CH_3 - CH_2 - COOH$
Purin	 yoki $C_5H_3N_4$
Qahrabo kislota	$C_2H_4 \cdot (COOH)_2$ yoki $HOOC - CH_2 - CH_2 - COOH$
Qaldiroq gaz	$2H_2 \cdot O_2$
Qattiq sovun	$C_{17}H_{35}COONa$
Qiyin suyuqlanadigan shisha	$K_2O \cdot CaO \cdot 6SiO_2$
Qizil fosfor	P_2
Qizil qon tuzi	$K_3[Fe(CN)_6]$
Qizil shisha	$Na_2O \cdot Cu_2O \cdot 6SiO_2$
Qizil temirtosh	Fe_2O_3
Qo'ng'ir rangli gaz	NO_2
Qo'ng'ir temirtosh	$2Fe_2O_3 \cdot 3H_2O$
Qo'rg'oshin qiyoti	PbO
Qo'rg'oshin yaltirog'i	PbS
Qo'sh superfosfat	$Ca(H_2PO_4)_2$
Qon gemoglobin	$(C_{738}H_{1166}O_{208}S_2Fe)_4$
Qora porox	$[KNO_3 - 75\%] \cdot [C - 15\%] \cdot [S - 10\%]$
Qum, kvarts	SiO_2
Quruq muz	CO_2
Qutbsiz molekullar	$CH_4, CO_2, CS_2, CCl_4, BeCl_2, BeH_2, CF_4$ (teflon), SF_6, BF_3, SO_3 , sikloalkanlar.
Rezortsin	
Riboza aldegid shakli	$CH_2 - CH - CH - CH - C \begin{matrix} \text{O} \\ \parallel \\ \text{H} \end{matrix}$ OH OH OH OH
Riboza keton shakli	$CH_2 - CH - CH - C - CH_2$

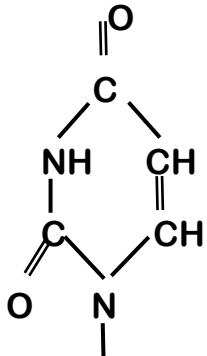
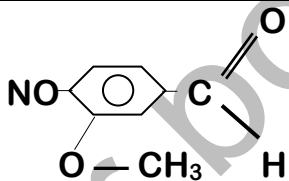

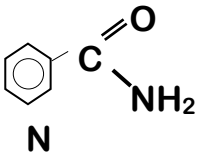
	OH OH OH O OH
Rodanid kislota	HSCN
Rubin shisha	Shishaga oltin (Au) qo'shilsa faqat nurni o'tkazadigan rubin shisha hosil bo'ladi.
Rux aldamasi	ZnS
Rux aldamasi	ZnS
Rux kuporosi	ZnSO ₄ · 7H ₂ O
Sariq qon tuzi	K ₄ [Fe(CN) ₆]
Sassolin	H ₃ BO ₃ · nH ₂ O
Saxaroza	C ₁₂ H ₂₂ O ₁₁
Segnet tuzi	KNaC ₄ H ₄ O ₆ · 4H ₂ O
Selenat kislota	H ₂ SeO ₄
Selenit kislota	H ₂ SeO ₃
Selestin	SrSO ₄
Sellobioza	C ₁₂ H ₂₂ O ₁₁
Sellyuloza	$\begin{array}{c} \text{C}_6\text{H}_{10}\text{O}_5 \\ \text{C}_6\text{H}_7\text{O}_2 \begin{array}{l} \nearrow \text{OH} \\ \text{---} \text{OH} \\ \searrow \text{OH} \end{array} \end{array} \quad \text{Cu(OH)}_2$ <p>Shveysv reaktivi eritmasidayaxshi eriydi.</p>
Sellyuloza ksantosenati, viskoza	$\text{C}_6\text{H}_7\text{O}_2(\text{OH}_2)_2 - \text{O} - \text{C} \begin{array}{l} \text{---} \text{S} - \text{NH}_2 \\ \parallel \\ \text{S} \end{array}$
Sellyuloza triatasetati	C ₆ H ₇ O ₂ (O - C(O)CH ₃) ₃
Sellyuloza trinitrati	C ₆ H ₇ O ₂ (ONO ₂) ₃
Selsian	[Ba(Al ₂ Si ₂ O ₈)]
Sementit, temir karbid	Fe ₃ C
Seolitlar	Ni ₂ Al ₂ Si ₄ O ₁₂
Serin	$\begin{array}{c} \text{NH}_2 - \text{CH} - \text{COOH} \\ \\ \text{CH}_2 - \text{OH} \end{array}$
Serit	Ge ₂ Si ₂ O ₇
Serpenit	3MgO · 2SiO ₂ · 2H ₂ O
Shakar	C ₁₂ H ₂₂ O ₁₁
Shisha, deraza, oyna	Na ₂ O · CaO · SiO ₂
Shovlin (oksalat) kislota	HOOC - COOH
Shox arog'i, zar suvi	HCl · 3HNO ₃
Shpinellar	M ₂ O · M ₂ O tarkiblilar
Shvetser reaktivi	Cu ammiakli eritma [Cu(NH ₃) ₄](OH) ₂ uldan selluloza
Sianid kislota	HCN
Siderit	FeCO ₃

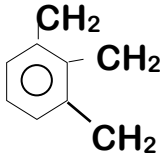
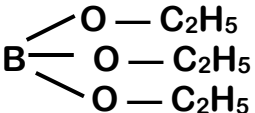
Siderit, shpatli temirtosh	FeCO_3
Silan	SiH_4
Silfinit	$\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$
Silikat nefelin	$\text{Na}_2[\text{Si}_2\text{Al}_2\text{O}_8]$
Silumin	Al [86 – 88%] • Si [12 – 14%] dan iborat qotishma o'lchov va signal boruvchi moslamalarda ishlatiladi.
Silvin	KCl
Silvinit	$\text{NaCl} \cdot \text{KCl}$
Simob tuzlari (hayot uchun xafli)	$\text{Hg}(\text{CN})_2$
Simol	 $\text{CH}_3 - \text{CH} - \text{CH}_3$
Sinkat	$\text{Na}_7\text{Al}_6\text{S}_2\text{O}_{24}$
Sinkat kislota	H_2ZnO_2
Sintetik kauchuk	$\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$ (– $\text{CH}_2 - \text{CH} = \text{CH} - \text{CH}_2 -$) $_n$
Sintez gazi	$\text{CO} \cdot 2\text{H}_2$
Sirka angidriid	 $\text{CH}_3 - \text{C} = \text{O}$ $\text{CH}_3 - \text{C} = \text{O}$ $(\text{CH}_3\text{CO})_2\text{O}$
Sirka kislota	CH_3COOH
Sirka kislota	CH_3COOH
Sistein	 $\text{NH}_2 - \text{CH} - \text{COOH}$ $\text{CH}_2 - \text{SH}$
Sitozin, 2-oksi-6-aminopirimidin	
Siydikchil, karbamid	$\text{CO}(\text{NH}_2)_2$
Skipidar	$\text{C}_{10}\text{H}_{15}$
Slyuda	$\text{K}_2\text{O} \cdot 3\text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2 \cdot 2\text{H}_2\text{O}$
So'ndirilmagan oxak	CaO
Solitsil kislota	$\text{LiAl}(\text{SiO}_3)_2$
Solitsil kislota	
Sorbit	$\text{CH}_2(\text{OH}) - (\text{CH} - \text{OH})_4 - \text{CH}_2 - \text{OH}$
Spodumen	$\text{Li}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2$ yoki $\text{LiAl}(\text{SiO}_4)_2$
Stearin kislota	$\text{C}_{17}\text{H}_{35}\text{COOH}$

Stearin kislota	$C_{17}H_{35}COOH$
Stibin	SbH_3
Stibin	SbH_3
Stirol, Vinilbenzol, Feniletilen	$CH = CH_2$ 
Stronsianit	$SrCO_3$
Sulema	$HgCl_2$
Superfosfat	$Ca(H_2PO_4)_2 \cdot CaSO_4$
Surik, bo'yoq	Pb_3O_4
Sut kislota	$CH_3 - CH - COOH$ OH
Suv gazi	$CO \cdot H_2$
Suvsizlantirilgan soda	Na_2CO_3
Suyak tolqoni	$Ca_3(PO_4)_2$
Suyak tolqoni, fosforit	$Ca_3(PO_4)_2$
Suyuq sovun	$C_{17}H_{35}COOK$
Tabiiy kauchuk monomeri, izopren	$CH_2 = C - CH = CH_2$ CH_3
Talk	$3MgO \cdot 4SiO_2 \cdot H_2O$
Tanakor, bura	$Na_2B_4O_7$
Taxir tuz, shpliz tuzi	$MgSO_4 \cdot 7H_2O$
Teflon	$(-CF_2 - CF_2 -)_n$
Temir (II) gidroksonitrat	$Fe(OH)NO_3$
Temir (III) gidrofosfat	$Fe_2(HPO_4)_3$
Temir kuporosi	$FeSO_4 \cdot 7H_2O$
Temir kuporosi	$FeSO_4 \cdot 7H_2O$
Temir kuyindisi, magnitli temirtosh	Fe_3O_4
Temir rodanid	$Fe(SCN)_3$
Tenar ko'ki	$Co(AlO_2)_2$
Tenardit	Na_2SO_4
Tereftal kislota	$HOOC - \text{C}_6\text{H}_4 - COOH$ yoki $C_6H_4 \cdot (COOH)_2$
Termit	$(Al + Fe_3O_4)$ yoki $4Al_2O_3 \cdot 9Fe$
Termolit	$Ca_2Mg_5(Si_4O_{11})_2(OH)_2$
Tetraamin mis (II)	$[Cu(NH_3)_4]^{2-}$
Tetraborat kislota	$H_2B_4O_7$
Tetrafosfor	P_4
Tetraftorborat	$H[BF_4]$

Tetragidrofuran	$ \begin{array}{c} \text{CH}_2 - \text{CH}_2 \\ \quad \\ \text{CH} - \text{CH} \\ \diagdown \quad / \\ \text{O} \end{array} $
Tetratianat kislota	$\text{H}_2\text{S}_4\text{O}_6$
Texnik soda	NaOH
Timil radikali	$ \begin{array}{c} \text{O} \\ \\ \text{C} \\ / \quad \backslash \\ \text{HN} \quad \text{C} - \text{CH}_3 \\ \backslash \quad / \\ \text{C} = \text{CH} \\ \\ \text{O} \\ \\ \text{N} \end{array} $
Timin, 5-metil-2,6-dioksipirimidin	$ \begin{array}{c} \text{O} \\ \\ \text{C} \\ / \quad \backslash \\ \text{NH} \quad \text{C} - \text{CH}_3 \\ \backslash \quad / \\ \text{C} = \text{CH} \\ \quad \\ \text{O} \quad \text{NH} \end{array} $
Tiofen	$ \begin{array}{c} \text{CH} - \text{CH} \\ \quad \\ \text{CH} \quad \text{CH} \\ \backslash \quad / \\ \text{S} \end{array} $
Tiosulfat	$\text{H}_2\text{S}_2\text{O}_8$
Tirozin	$ \begin{array}{c} \text{NH}_2 - \text{CH}_2 - \text{COOH} \\ \\ \text{CH}_2 - \text{C}_6\text{H}_4 - \text{OH} \end{array} $
To'q yashil shisha	$\text{Na}_2\text{O} \cdot \text{FeO} \cdot 6\text{SiO}_2$
Tolishpok	$\text{Ca}_3(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$
Toluol, metil benzol	$\text{C}_6\text{H}_5\text{CH}_3$
Tomas shlak	$\text{Ca}_3(\text{PO}_4)_2 \cdot \text{CaO}$
Tortveytit	$(\text{Y}, \text{Sc})_2\text{Si}_2\text{O}_7$
Triasetilselluloza, triatsetat selluloza	$(\text{C}_6\text{H}_7\text{O}_2)(\text{CH}_3\text{COO})_3$
Triborat kislota	$\text{H}_5\text{B}_3\text{O}_7$
Tribornitroamid	$\text{B}_3\text{N}_3\text{H}_6$
Trimetafosfat kislota	$4\text{H}_3(\text{PO}_3)_3$ yoki $3\text{P}_4\text{O}_{10} \cdot 6\text{H}_2\text{O}$

Trimetilamin	$\begin{array}{c} \text{CH}_3 - \text{N} - \text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
Trinitroselluloza, piroksilin	$\text{C}_6\text{H}_7\text{O}_2 \begin{array}{l} \diagup \text{O} - \text{NO}_2 \\ \diagdown \text{O} - \text{NO}_2 \\ \text{O} - \text{NO}_2 \end{array}$
Triptofan	
Tristearin	$\begin{array}{c} \text{O} \\ \\ \text{CH}_2 - \text{O} - \text{C} - \text{C}_{17}\text{H}_{35} \\ \\ \text{O} \\ \\ \text{CH}_2 - \text{O} - \text{C} - \text{C}_{17}\text{H}_{35} \\ \\ \text{O} \\ \\ \text{CH}_2 - \text{O} - \text{C} - \text{C}_{17}\text{H}_{35} \end{array}$
Trotil	
Tserussit	PbCO_3
Turnbul ko'ki	$\text{Fe}_3[\text{Fe}(\text{CN})_6]_2$
Tuyaminit	$\text{CaO} \cdot 2\text{MnO}_2 \cdot \text{V}_2\text{O}_5 \cdot 8\text{H}_2\text{O}$
Uchlamchi butilamin	$\begin{array}{c} \text{NH}_2 \\ \\ \text{CH}_3 - \text{C} - \text{CH}_3 \\ \\ \text{CH}_3 \end{array}$
Uglerod monoksid, is gazi	CO
Uran qorasi	$(\text{UO}_2 \cdot \text{UO})_2$
Uratsil, 2,6-dioksimiprimidin	

Uridil radikali	
Uviol shisha	Shisha tarkibiga Fe_2O_3 qo'shilsa, ultrabinafsha nurlarni o'tkazmaydigan (uviol) shisha hosil bo'ladi.
Valerian (pentan) kislota	C_4H_9COOH U o'simliklardan olinadi.
Valin	$NH_2-CH-COOH$ $CH_3-CH-CH_3$
Vanadiy karbid	VC
Vanillin	
Venil	CH_2-CH_2
Vinil (etenil) radikali	$CH_2=CH-$
Vinil atsetat	$CH_2=CH-COOCH_3$
Vinil benzol (stiroi, feniletilen)	$CH=CH_2$ 
Vinil spirt	$CH_2=CH-OH$
Vinil xlorid	$CH_2=CH-Cl$
Vino kislota	$HOOC-CH(OH)-CH(OH)-COOH$
Vino spirit	CH_3-CH_2-OH
Viskoza	$C_6H_7O_2(OH)_2-O-C(=S)-S-Na$
Vismutin	BiH_3
Vitamin B ₁₂	$C_{63}H_{90}O_{14}N_{14}PCa$
Vitamin PP	
Viterit	$BaCO_3$
Volfram karbidi	WC

Vstinaltrimetilbenzol	
Xalkopirit	CuFeS_2
Xalkopirit	CuFeS_2
Xalkozin	Cu_2S
Xalkozin, mis yaltirog'i	Cu_2S
Xavo gazi	CO [30%] • N_2 [60%] • CO_2 [10%]
Xavorang shisha	$\text{Na}_2\text{O} \cdot \text{CuO} \cdot 6\text{SiO}_2$
Xayot uchun havfli aralashma	$\text{AlCl}_3 \cdot \text{NaCl}$
Xibin apatit	$\text{Ca}_3(\text{PO}_4)_2$
Xind selitrasi	KNO_3
Xindiston selitrasi	HNO_3
Xlorli oxak	$\text{Ca}(\text{ClO})_2 \cdot \text{CaCl}_2$
Xlorli suv	HClO
Xlornitroriamin plumbat (IV) sulfat	$[\text{Pb}(\text{NH}_3)_3\text{NO}_2\text{Cl}]\text{SO}_4$
Xloroform	CHCl_3
Xlorpren	$\text{CH}_2 = \underset{\text{Cl}}{\text{C}} - \text{CH}_2 = \text{CH}_2$
Xom cho'yan	Fe_3C
Xrom geksa karbinol	$\text{Cr}(\text{OH})_6$
Xrom temirtosh	$\text{FeO} \cdot \text{Cr}_2\text{O}_3$
Xromel	Ni [90%] • Cr [10%]
Xromli aralashma	$(\text{K}_2\text{Cr}_2\text{O}_7 + \text{H}_2\text{SO}_4)$
Yarim kuydirilgan gips (alebaster)	$\text{CaSO}_4 \cdot 0,5\text{H}_2\text{O}$
Yashil rang berib yonadigan modda	
Yashil shisha	$\text{Na}_2\text{O} \cdot \text{Cr}_2\text{O}_3 \cdot 6\text{SiO}_2$
Yodargirit	AgJ
Yodargirit	AgJ
Yoqut	$[\text{Cr}(\text{H}_2\text{O})_4\text{Cl}_2]\text{Cl} \cdot 2\text{H}_2\text{O}$ (tog' yashil rangida)
Zar suvi, shox arog'i	$\text{HCl} \cdot 3\text{HNO}_3$

MODDA	IZOMERI
2 metil propaning dixlorli xosilasi	3 ta
2 xil H_2 , 3 xil O_2 izotopidan tuzilgan peroksidlar soni	18 ta

2,2 dimetil butanning monoxlorli xosilasi	3 ta
2,2 dimetil propaning monoxlorli xosilasi	1 ta
Butanning ... ta izomeri bo'lib, ularda ... ta 1 lamchi, ... ta 2lamchi va ... ta 3 lamchi C atomlari bo'ladi.	2 ta izomer: 5 ta 1 lamchi, 2 ta 2lamchi, 1 ta 3 lamchi
$C_{10}H_{22}$	75 ta
$C_{13}H_{28}$	802 ta
$C_{20}H_{42}$	336`319 ta
C_3H_5Cl	4 ta (sis – trans 1 ta)
$C_3H_5NO_2$	8 ta (sis – trans 2 ta)
$C_3H_5NO_2$	5 ta ochiq zanjirli izomer
$C_3H_5NO_2$	8 ta (2 ta sis – trans)
C_3H_5R	3 ta bir valentli radikal
$C_3H_6ClCOOH$	5 ta izomer
$C_3H_6O_2$	5 ta ochiq zanjirli izomer
$C_3H_7O_2N$	2 ta kislota izomeri
C_3H_7OH	2 ta izomer spirt
$C_3H_8O_2$	3 ta izomer
C_3H_9N tarkibli aminning nechta izomeri mavjud.	4 ta izomer
C_3H_9OH	3 ta spirt
C_4H_{10}	2 ta
C_4H_{10}	5 ta to'yinmaganlar izomer (alken – 3ta, alkin – 2ta)
C_4H_{10}	4 ta monoxlorli izomeri
C_4H_{10} tarkibli alkanning barcha izomeridagi C atomining oksidlanish darajasi yig'indisi ... ga teng.	Normal butan (-10) + 2 metil propan (-10) = -20
$C_4H_{10}O$ formulaga to'g'ri keladigan birlamchi spirtlar va oddiy efirlar sonini ko'rsating.	2 ta birlamchi spirtlar va 3 ta oddiy efirlar
$C_4H_{10}O_2$	6 ta ikki atomli spirt
$C_4H_{11}N$	8 ta ochiq izomer
$C_4H_{11}N$	4 ta birlamchi aminlar soni
C_4H_4	2 ta ochiq zanjirli izomer
C_4H_6	6 ta (2 ta sis – trans) barcha izomer
C_4H_6	4 ta (2ta -diyen va 2 ta -in) izomer

$C_4H_6O_2$	4 ta to'yinmagan ugv. li kislota
$C_4H_6O_2$	10 ta (2 ta sis – trans) to'yinmagan kislota va efir
C_4H_7Cl	11 ta (3 ta sis – trans)
$C_4H_7NO_2$	10 ta ochiq va yopiq zanjirli
$C_4H_7NO_2$	4 ta yopiq zanjirli
$C_4H_7NO_2$	8 ta aminokislota
C_4H_8	6 ta (3 ta –yen, 2 ta sikloalkan va 1 ta sis – trans)
C_4H_8	6 ta (-in, -diyen, -en)
C_4H_8	2 ta sikloparafin
C_4H_8O	5 ta (1 ta sis – trans) yopiq, 5 ta (1 ta sis – trans) ochiq
C_4H_8O	2 ta aldegid, 1 ta keton, 4 ta to'yinmagan spirt
C_4H_8O	11 ta barcha izomer
C_4H_8O	4 ta to'yinmagan zanjirli spirt, 4 ta to'yinmagan oddiy efir
$C_4H_8O_2$	6 ta (2 ta kislota va 4 ta murakkab efir)
C_4H_9CHO tarkibli aldegidning (tarkibida – CHO tutgan) ... ta izomer mavjud.	4 ta
C_4H_9COOH	4 ta karbon kislota
$C_4H_9NO_2$ tarkibli aminokislota izomerlari nechta.	5 ta
$C_4H_9O_2N$	5 ta aminokislota (2 ta aldegid)
C_4H_9OH	4 ta optik izomer
C_4H_9OH	6 ta struktura izomer
C_4H_9R	2 ta to'yingan ugv. izomer
C_5H_{10}	6 ta sikloalkan (2 ta sis-trans)
C_5H_{10}	7 ta –yen va 6 ta yopiq halqali (2 geometrik)
C_5H_{10}	6 ta (1 ta sis – trans) barcha ochiq izomerlar
C_5H_{10}	5 ta turli sikloparafinlar
$C_5H_{10}O$	4 ta aldegid
$C_5H_{11}Br$ tarkibli alkanning galogenli izomeri nechta bo'lishi mumkin.	7 ta
$C_5H_{11}COOH$	8 ta karbon kislota
$C_5H_{11}NO_2$	12 ta aminokislota
$C_5H_{11}OH$ tarkibli bir atomli spirtning ... ta	8 ta

izomeri bo'ladi.	
$C_5H_{11}R$	8 ta R izomerlar soni
C_5H_{12}	3 ta
C_5H_{12}	3 ta to'yingan ugvl.
C_5H_{12}	8 ta monogalogenli xosila
$C_5H_{12}O$ tarkibli oddiy efir izomerlari ... ta	4 ta
C_5H_8	6 ta alkadiyen
C_5H_8	3 ta alkin
C_5H_8	10 ta: [3 ta -in] va [7 ta -diyen(1 ta sis - trans)]
C_6H_{10}	3 ta alkinlar
C_6H_{10}	7 ta -diyenlar ugvlari asosiy zanjirda 5 ta C
C_6H_{12}	7 ta to'yingan sikloalkan
C_6H_{12}	10 ta sikoparafinlar geometrik
C_6H_{12}	6 ta, 2 ta geometrik, asosiy zanjir 5 ta C
C_6H_{12}	13 ta alkenlar soni izomer
C_6H_{12}	3:0 ta asosiy zanjirda 4 ta C bo'lgan alken
C_6H_{12}	20 ta siklo va alkenlar soni
C_6H_{12} tarkibli sikloalkan izomerlari soni -	12 ta: siklogeksan, metilsiklopentan, 1,1-dimetilsiklobutan, 1,2-dimetilsiklobutan, sis 1,3-dimetilsiklobutan, trans 1,3-dimetilsiklobutan, etilsiklobutan, propilsiklopropan, izopropilsiklopropan, 1-metil 2-etilsiklopropan, 1,1,2-trimetilsiklopropan, 1,2,3-trimetilsiklopropan,
$C_6H_{12}O$	6 ta keton
$C_6H_{12}O$	8 ta aldegid soni
$C_6H_{12}O_2$	7 ta kislota izomer
$C_6H_{12}O_2$	6 ta tarmoqlanmagan R li murkkab efir
$C_6H_{13}OH$	17 ta spirt izomerlar soni
C_6H_{14}	5 ta
$C_6H_3(CH)_3$	8 ta aromatik izomerlar (halqasida birikkan R da 18 ta birlamchi 5 ta ikkilamchi 1 ta uchlamchi 0 ta to'rtlamchi C bor)
$C_6H_3NO_2Cl_2$	6 ta dixlorli nitrobenzol
C_7H_{12}	8 ta aromatik R (I-18 ta, II-5 ta, III-1 ta, IV-0 ta)
C_7H_{14}	27 ta alken
$C_7H_{14}O$	15 ta keton
$C_7H_{15}OH$	39 ta izomerlar soni
C_7H_{16}	9 ta

C_7H_{16}	9 ta alkan to'yingan s.n
C_7H_{16}	5 ta, asosiy zanjirda 5 ta C atomi
C_7H_{16}	1 ta, asosiy zanjirda 4 ta C atomi
C_7H_{16}	3 ta, 1 ta uchlamchi C atomiga ega alkan
C_7H_{16}	2 ta, 2 ta uchlamchi C atomiga ega alkan
C_7H_{18}	14 alkin
C_7H_7Br	4 ta galogenli aromatik izomer
$C_7H_7NO_2$	4 ta aromatik nitrobirikma
C_7H_9N	4 ta aromatik amin
C_8H_{10}	4 ta benzol halqali
C_8H_{10} tarkibli aromatik ugv.ning nechta izomeri bo'lishi mumkin.	4 ta
$C_8H_{10}O$	19 aromatik izomerlar
$C_8H_{10}O_2$	4 ta aromatik birikmalar Ag ko'zgu reaksiyasiga qatnashadi. (oksialdegid va oksikon hisobga olmang)
$C_8H_6O_2$	4 ta aromatik kislota
C_8H_7Cl	5 ta aromatik birikma
$C_8H_8O_2$	8 ta karboksil va murakkab efir bo'lgan birikmalar, Ag ko'zgu reaksiyasiga kirishadi.
$C_8H_8O_2$	1 ta gidrolizga qatnashadigan
$C_8H_8O_2$	4 ta aromatik birikmalar, Ag ko'zgu reaksiyasiga qatnashadi. (oksialdegid va oksiketoza xisobga olmang)
$C_8H_8O_2$	Aromatik birikmalarning 4 tasi Na metali bilan reaksiyaga kirishadigan (aldegid va oksiketoza xisobga olmang)
C_9H_{10}	7 ta aromatik s.n.lar (1 ta sis – trans)
C_9H_{12}	8 ta aromatik trimetil benzol
C_9H_{18}	154 ta alkenlar soni
C_9H_{20}	35 ta alkanlar soni
Dibrombenzolda	3 ta
Dibrompropaning	4 ta
Dimetil benzoy aldegidning	6 ta
Dixlor nitrobenzol	6 ta
Geksanning ... ta izomeri bo'lib, ularda ... ta uchlamchi uglerod atomi bo'ladi?	5 ta izomer; 4 ta uchlamchi C
Geksanning ... ta izomeri bo'lib, ularda 3lamchi uglerod atomi	5 ta izomer: 3lamchi 4 ta.

bo'ladi.	
Geksanning izomerlari va barcha izomerlaridagi 2lamchi, 3lamchi, 1 lamchi va 4 lamchi C larning yig'indisini ko'rsating.	5 ta izomer: 2lamchi 9, 3lamchi 4, 1 lamchi 16, 4 lamchi 1.
Izobutilformiat gidolizida hosil bo'lgan spirtning tarkibida OH-tutgan ... ta izomeri bo'ladi.	2 ta izobutilspirt
Izobutnning monoxlorli xosilasi	2 ta
Massalari 16, 17, 18 u.b ga teng bo'lgan O atomlari tutgan ozon molekulari necha xil bo'ladi.	10 ta
N. butanning dixlorli xosilasi	6 ta
N. pentanning monogaloidli xosilasi	3 ta
Pentanning barcha izomerlari soni ... ta bo'lib, ulardagi C larning ... tasi 1 lamchi C atomi hisoblanadi.	3 ta izomer: 9 ta 1 lamchi
Pentanning barcha izomerlari soni ... ta bo'lib, ulardagi C larning ... tasi 2lamchi C atomi hisoblanadi.	3 ta izomer: 4 ta 2 lamchi
Pentinning izomerlari –	3-metilbutin-1, izopren, metiletilatsetilen, 3-metilbutin-1, pentadiyen-1,4
Siklogeksanning uch a'zoli halqa tutgan izomerlar soni –	6 ta
Tarkibi C_5H_{10} bo'lgan sikloparafinning izomerlari soni nechta.	6 ta (1 ta sis-trans)
Tarkibi $C_5H_{10}O_2$ bo'lgan bir asosli karbon kislotaning izomerlari ... ta	4 ta

Uglerod (^{12}C) va 3 xil kislorod izotoplari (^{16}O , ^{17}O , ^{18}O) dan t/t CO_2 molekulari nechta bo'lishi mumkin.	6 ta
Vodorodning ^1H , ^2D , ^3T va kislorodning ^{16}O , ^{17}D , ^{18}T izotoplari necha xil H_2O xosil qilishi mumkin.	21 ta

ELEMENTLAR HAQIDA MA'LUMOT

No	Elementlar formulasi	Kashf etilgan yili, kim tomonidan	MA'NOSI
1	H	1776, ingliz G. Kavendish	Suv tug'diruvchi
2	He	1868, ing N. Loker va fr J. Jansen	Quyosh
3	Li	1817, shved A. Arfvedson	Tosh
4	Be	1798, fransuz N. L. Voklen	"Berill" minerali nomidan olingan
5	B	1808, J. L. Gey-Lyussak, G. Devi va L. J. Tenar	"Bura" so'zidan olingan
6	C	Qadimdan ma'lum	Ko'mir xosil qiluvchi
7	N	1772, shotland D. Rezerford	(xayotsiz), selitra tug'diruvchi
8	O	1771, shved K. Sheele	Kislota tug'diruvchi
9	F	1771, shved K. Sheele	Yemiruvchi
10	Ne	1898, ingliz U. Ramzay va M. U. Travers	Yangi
11	Na	1807, ingliz G. Devi	Sirka qo'shilsa qaynab ketuvchi, soda
12	Mg	1775, J. Blek	"Magnezi" Gretsiyadagi joyning nomi
13	Al	1825, Daniyalik X. K. Ersted	Achchiqtosh
14	Si	1824, I. Berselius	(qoya), lotincha tarjimasi

			chaqmoqtosh
15	P	1669, X. Brand	Shu'la sochuvchi, yorug'lik tarqatuvchi
16	S	Qadimdan ma'lum	
17	Cl	1774, K. Sheele	Yashil, ko'k – sariq
18	Ar	1894, ing U. Ramzay va D. Relee	Yalqov
19	K	1807, ingliz G. Devi	Dengiz o'simtalarining kuli (ishqor)
20	Ca	1808, ingliz G. Devi	Yumshoq tosh (oxaktosh)
21	Sc	1879, Shvetsariyalik L. F. Nilson	Skandinaviya sharafiga
22	Ti	1771, ingliz U. Gregor	Mifologiya qahramoni
23	V	1801, Meksikalik A.M. Del Rio	Qadimgi skandinavlarining xudosi freya vanadiysining sharafiga
24	Cr	1797, fransuz N.M.Voklen	Bo'yoq
25	Mn	1774, shved K.Sheele va Yu. Gan	
26	Fe	Qadimdan ma'lum	Yulduz elementi, mustahkamlik
27	Co	1735, G. Brand	Tog'ning duxi
28	Ni	1751,	Mis shaytoni (dyavol)
29	Cu	Qadimdan ma'lum	Kipr orolining nomidan olingan
30	Zn	Qadimdan ma'lum	Oq, lotincha tarjimasi yuk
31	Ga	1875, fransuz G.E. Lekok de Bua – Bodran	Qadimgi Fransiyaning nomi
32	Ge	1881, K.A. Vinkler	Germaniya sharafiga
33	As	1789, A. Lavuazye	Mineral bo'yoq (lotincha

			tarjimasi)
34	Se	1817, shved I. Berselius, G. Gan	Oy
35	Br	1826, fr A.J. Balar, nemis S. Levig	Badbo'y, sassi
36	Kr	1898, ingliz U. Ramzay va M. U. Travers	Yashirin
37	Rb	1861, R.V. Bunzey va german G. Kirxgof	To'q qizil
38	Sr	1808, G. Devi	Shotlandiyadagi joy nomini bildiradi
39	Y	1774, Finlyandiyalik Yu. Gadolin	Shaharning nomi
40	Zr	1798, Germanlik M.G. Klaprot	Arabcha "sakun" – kinovar
41	Nb	1801, I. Xatchet	Qadimgi Yunon mifologiyasiga ko'ra Nibeya Tantalning qizidir
42	Mo	1878, K. Sheele	Qo'rg'oshinning lotincha nomi
43	Tc	1937, italyan K. Pere va E. Serge	Sun'iy
44	Ru	1808, polyak E. Siyadeskiy	Rossiya sharafiga
45	Rh	1804, ingliz U.X. Vollaston	Atirgul
46	Pd	1803, ingliz U.X. Vollaston	Pallada asteroidi sharafiga
47	Ag	Qadimdan ma'lum	Ravshan, lotincha tarjimasi tovlanuvchi
48	Cd	Nemis F. Shtromeer	Rux rudasi
49	In	1863, nemis Rayx va G. Rixter	Indigo – ko'k chiziq
50	Sn	Qadimdan ma'lum	Qattiq, lotincha tarjimasi barqaror
51	Sb	Qadimdan ma'lum	Qoshni qoraga bo'yash

52	Te	1782, rumin F.I. Myuller fon Reyxenshteyn	Yer
53	J	1886, fransuz ximigi B. Kurtua	Binafsha
54	Xe	1898, U. Ramzay, M. U. Travers	Noma'lum
55	Cs	1806, I.R. Bunzen, G.R. Kirxgof	Ko'k – xavorang
56	Ba	1774, shved K. Sheele	Og'irlik (og'ir)
57	La	1839, shved K. Mosander	Yashirinmoq, qochmoq
58	Ce	1803, I. Berselius, V. Gizenger	Sereri yulduzi sharafiga
59	Pr	1885, Avstriya K.Auer fon Velsbax	
60	Nd	1885, Avstriya K.Auer fon Velsbax	
61	Pm	1945, AQSHlik J. Marinsk, L. Glenden, I. Koriyell	
62	Sm	1879, Lekok de Buabodran	
63	Eu	1901, E. Demarse	
64	Gd	1886, frans Lekok de Buabodran	
65	Tb	1843, K. Mosander	
66	Dy	1886, frans Lekok de Buabodran	Topilishi qiyin
67	Ho	1878, P. Kleve	Joyning nomidan olingan
68	Er	1843, K. Mosander	
69	Tm	1879, P. Kleve	
70	Yb	1794, Yu. Gadolin	Shaxarning nomidan olingan
71	Lu	1907, J. Urben	
72	Hf	1923, D.Xeveshi, D.Koster (Daniya)	Daniya poytaxti Kopengagenni ng qadimgi nomi
73	Ta	1802, A. Eksberg	Mifologiya qahramoni
74	W	1751, K. Sheele	Og'ir tosh
75	Re	1925, V. Hoddak	Reyn daryosining sharafiga

76	Os	1804, ingliz S. Tennat	hid
77	Ir	1804, ingliz S. Tennat	Kamalakrang
78	Pt	Qadimdan ma'lum	Kumushcha (kichik kumush)
79	Au	Qadimdan malum	
80	Hg	Qadimdan malum	Suyuq kumush (yunoncha tarjimasi)
81	Tl	1861, U. Kruks	Yashil novda
82	Pb	Qadimdan ma'lum	
83	Bi	Qadimdan ma'lum	Oq massa
84	Po	1848, polyak Pyer va Mariya Sadovskaya Kyuri	Polsha sharfiga
85	At	1940, AQSHlik D.R. Korson	Beqaror
86	Rn	1900, F. Dorn	Nur
87	Fr	1939, Margarit Perey	Fransiya sharfiga
88	Ra	1898, fransuz Pyer va Mariya Sadovskaya Kyuri	Nurli
89	Ac	1899, fransuz A. Debern	Birinchi nur
90	Th	1828, I. Berselius	Sayyora nomidan olingan
91	Pa	1918, Otto Gan	Sayyora nomidan olingan
92	U	1798, M.G. Klaprot	Sayyora nomidan olingan
93	Np	1940, E.M. Makmillan, F. Abelson	
94	Pu	1940, AQSHlik G.T. Siborg	Kyurilar sharfiga
95	Am	1944, AQSHlik G.T. Siborg	
96	Cm	1944, AQSHlik G.T. Siborg	
97	Bk	1949, S. Tomson	A. Eynshteyn sharfiga
98	Cf	1950, S. Tomson	
99	Es	1952, J. Choppin	D. I. Mendeleyev sharfiga
100	Fm	1952, J. Choppin	(A. B. nobel sharfiga)
101	Md	1955, AQSHlik A. Giorso	Ravshan, lotincha

			tarjimasi tovlanuvchi
102	(No)	1958, AQSHlik A. Giorso	Rux rudasi

AYRIM QIZIQARLI SAVOLLARGA JAVOBLAR

SAVOLLAR	JAVOBLAR
“bosh guruhcha elementlar atomlarida tashqi pog’onaning elektronlar soni guruh tartib raqamiga teng” degan qoidadan chetlashish qaysi element atomida kuzatiladi	Geliy
“Elektron sakrash” kuzatiladigan elementlar	Cr ¹ , Cu ¹ , Nb ¹ , Mo ¹ , Ru ¹ , Rh ¹ , Pd ² , Ag ¹ , Pt ¹ , Au ¹
“Kuldiruvchi gaz” deb ataladigan moddani ko’rsating	N ₂ O
“Shirin” ta’mgaga ega, lekin juda zaharli tuzni aniqlang	Pb(CH ₃ COO) ₂
“Tulkining dumi” deb ataladigan gaz	NO ₂
Arxeologik qazilmalarni yoshini aniqlashda uglerodning qaysi izotopidan foydalaniladi	C ¹⁴
Atomning elektron pog’onalar soni nimaga teng bo’ladi	Davr raqamiga
Berselius fanga 4 ta termini kiritgan bular	Allotropiya, Kataliz, Organik kimyo, Izomeriya
Binar birikma	Ikki elementdan iborat birikmalar (oksidlar, sulfidlar, nitidlar, karbidlar)
Bir xil sharoitda va bir xil massada olingan qaysi gazning hajmi eng katta bo’ladi	O ₂
Bog’lanish turi qutbli, lekin molekulasiz qutbsiz moddalar	CS ₂ , CO ₂ , CH ₄ , CCl ₄ , BeCl ₂ , BeH ₂ , SF ₆ , CF ₄ (teflon), BF ₃ , SO ₃ , sikloalkanlar.
Bukilganda ovoz chiqaradigan metal	Sn
Cho’g’lanma lampa ishlab chiqarishda ishlatiladigan metallar	W, Pb, Sn, Sb, Fe, Cu, Zn
d – pog’onachasida elektronlar maksimal soni nechaga teng	10 ta elektron
Electron buluti shaklini qaysi kvant son belgilaydi	Orbital kvant son
Electron energiyasini qaysi kvant son belgilaydi	Bosh va orbital kvant son

Elektroliz yo'li bilan olinadigan metallar	Na, K, Cs, Ca, Mg, Al, Au, Cl ₂ , F ₂ , NaOH, HOH, KClO ₃
Elektroliz yo'li bilan olinadigan metallar	Na, K, Cs, Ca, Mg, Al, Au, Cl ₂ , F ₂ , NaOH, HOH, KClO ₃
Elementlarni davriy sistemadagi o'rnini uning qaysi belgisi belgilaydi	Protonlar soni
Eng aktiv metal	Cs va Fr
Eng og'ir metal	Os ($\rho = 22,5 \text{ g/sm}^3$)
Eng qarshiligi katta metal	W
Eng qattiq metal	Cr
Eng yaxshi elektr o'tkazuvchi	Ag \rightarrow Cu \rightarrow Au \rightarrow Al
Eng yengil metal	Li ($\rho = 0,534 \text{ g/sm}^3$)
f – pog'onachasida elektronlar maksimal soni nechaga teng	14 ta elektron
Faqat bitta kislota gaz va suv aralashmasiga aylantiradigan kislota va gazni aniqlang	HF va SiF ₄
Fotoelement	Cs
Juda yuqori temperaturada gidrid bug'i zichligi kislorodning zichligiga teng bo'lgan elementni aniqlang	Si
Karborund tarkibida C dan boshqa qanday element bo'ladi	Si
Kimyo sohasida birinchi Nobel mukofoti sovrindori	Ya. X. Vant – Goff
Kislota ham asos bo'ladigan modda	HSO ₄ ⁻ [gidrosulfat]
Koka – kola ichimligiga qo'shiladigan gaz	CO ₂
Konsentrlangan H ₂ SO ₄ bilan reaksiyaga kirishmaydigan metal/	Fe, Cr, Al, Au
Metallarni qaysi birini zichligi alyuminiyning yaqin bo'lsa ham, Al dan 3 marta mustahkam	Ti
O'simliklarga yashil rang bera oladigan metal	Mg
O'zbekiston oltin qazib olish bo'yicha nechanchi o'rinda turadi	7
O'zbekiston oltin zaxirasi bo'yicha nechanchi o'rinda turadi	4
Odam va hayvon tanasiga mustahkamlik (qattqlik) beruvchi moddalar qanday elementlardan iborat	P, O, Ca
p – pog'onachasida elektronlar maksimal soni nechaga teng	6 ta elektron
Pog'onachalardagi elektronlarning maksimal soni qanday formula orqali	2n ²

topiladi	
Pog'onachalardagi energetik xolatlar (orbitallar) sonini qaysi kvant son belgilaydi	Bosh kvant son
Qanday maqsadlarda radiodetallarni bazi kontaktlari Qimmatbaho metallar bilan qoplandi	Oksidlovchilardan saqlash uchun
Qaysi anorganik moddani suvdagi eritmasi "novshadil spirt" deyiladi	NH ₃
Qaysi elementga uning oddiy modda holatidagi hidiga qarab nom berilgan	Br
Qaysi elementlarda proton va neytronlar soni bir xil emas	Li, Be, B, F, Na, K
Qaysi elementlarni oddiy modda holatidagi rangiga qarab nom berilgan	Cl ₂ , J ₂
Qaysi gazlar zaharsiz bo'lgan holda, ularni ichida qolgan xayvonlar nobud bo'ladi	CO ₂ , N ₂
Qaysi kislota kuchsiz, lekin kuchli zahar hisoblanadi	HCN
Qaysi kislota metallar zangini, quyqasini tozalashda ishlatiladi	Oksalat kislota
Qaysi kislota qattiq xolatda bo'ladi	Ortofosfat kislota [H ₃ PO ₄]
Qaysi kislotani eritmasi "salqin ichimlik" deyiladi	H ₂ CO ₃
Qaysi metal "vabo" bilan kasallanadi	Sn
Qaysi metal bilan xat yozish mumkin	Pb
Qaysi metallarga suv tegishi bilan yonib ketadi	K, Na, Rb, Cs, Fr
Qaysi moddaning qizdirilishi natijasida qoldiq qolmaydi	NH ₄ Cl
Qizdirilgan mis (II) oksid ustidan qaysi gaz o'tkazilsa, qizg'ish rang paydo bo'ladi	Vodorod
Qutbsiz molekullar	
Radioaktiv elementlarni o'rganib, 2 marta Nobel mukofotini olgan olimlar	M.Sadovskaya Kyuri
Respublikamizda qidirib topilgan neft konlari soni	160
s – pog'onachasida elektronlar maksimal soni nechaga teng	2 ta elektron
Sanoatda "kaustik soda" nomi bilan ishlatiladigan modda	NaOH
Shakardan ham shirin bo'lgan qaysi modda toshko'mir smolasidan olinadi	Saxarin
Sublimatlanish xossasiga ega bo'lgan moddani aniqlang	CO ₂ , J ₂ , oq P
Texnikada "kuporos moyi" deb ataladigan	H ₂ SO ₄

kislota	
Tish poroshogi tarkibida qanday tuz bo'ladi	CaCO ₃
Yer sharida eng ko'p tarqalgan metallni aniqlang	Al
Yerda eng ko'p tarqalgan, dastlab olingan Ag dan 270 marta qimmat bo'lgan metal	Al
Yonayotgan qaysi moddani CO ₂ bilan o'chirib bo'lmaydi	Mg
Zn(OH) ₂ ni Mg(OH) ₂ dan farqini qaysi reaktiv yordamida aniqlash mumkin	NaOH

KRISTALL PANJARA TURLARI

moddalar			
MOLEKULYAR	NOMOLEKULYAR		
Molekulyar kristall panjara	Ion kristall panjara	Atom kristall panjara	Metall kristall panjara
Metalmas+ Metalmas	Metal + Metalmas	Metalmas + Metalmas	Metal + Metall
Xossalari: a) Kristall panjara tugunlarida molekula tutadi. b) Bog'lanishi kovalent. c) Suyuqlanish va qaynash t ⁰ lari past. d) Diaelektrik – elektr tokini o'tkazmaydi. e) Suvda yomon eriydi. f) Mo'rt bo'ladi. g) Sublimatlanish — qizdirilganda suyuqlanmasdan gaz xolatga o'tadigan fizik xodisa.	Xossalari: a) Kristall panjara tugunlarida ionlar tutadi. b) Bog'lanishi ionli. c) Suyuqlanish va qaynash t ⁰ lari yuqori. d) Qattiq xolatda tokni o'tkazmaydi, lekin suyuqlanmasi eritmalari tokni yaxshi o'tkazadi. e) Suvda yaxshi eriydi. f) Qutbsiz erituv-chilarda erimaydi. g) Qattiqligi yuqori.	Xossalari: a) Kristall panjara tugunlarida atomlar tutadi. b) Bog'lanishi puxta kovalent. c) Suyuqlanish va qaynash t ⁰ lari eng yuqori. d) Elektr tokini o'tkazmaydi (diaelektrik yoki yarim o'tkazgich). e) Suvda erimaydi. f) Qutbsiz erituv-chilarda erimaydi. g) Eng qattiq.	Xossalari: a) Kristall panjara tugunlarida metal kationlari tutadi. b) Metal bog'lanishli. c) Suyuqlanish va qaynash t ⁰ lari yuqori. d) Elektr tokini suyuqlanmasi va qattiq xolati juda yaxshi o'tkazadi. e) Suvda erimaydi. f) Qutbsiz erituv-chilarda erimaydi. g) qattiqligi mustahkam h) Delokallashgan. i) Plastik, bolg'alanuvchan
Vakili: gaz [H₂,	Vakili: MeO,	Vakili: C_{(Olmos),}	Vakili: sof metall

Gal ₂ , CO ₂ (Quruq Muz), C ₆ H ₆ , O ₃ , oq P, S, O ₂ , N ₂ , ...] <i>suyuq, kukun, organic spirtlar, CO(NH₂)₂, ...</i>	MeH, tuzlar, asoslar, CaO, LiH, KOH, NaCl, Ba(HCO ₃) ₂ , [Ba(OH) ₂] ₂ S, Me _x O ₂ , K ₄ [Fe(CN) ₆], ...	Be, B, Si, qizil P, qora P, C (Grafit), kvars (SiO ₂), qum (SiO ₂), karborund (SiC), ...	va metall qotishmalari (Na va K qotishmasi), Ca, Ba, Fr, Fe, Cu, ...
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IZOTOP, IZOBAR, IZOTON, IZOELEKTRON haqida

IZOTOP	Bir xil: ✓ yadro zaryadi ✓ protonlar soni ✓ elektronlar soni Xar xil: 1) atom massasi 2) neytronlar soni	O_8^{16} O_8^{17} O_8^{18} , H_1^{11} H_1^{12} H_1^{13} , Ca_{20}^{40} Ca_{20}^{42} Ca_{20}^{43} , F_9^{19} (1ta), K_{19}^{39} K_{19}^{40} , Cu_{29}^{63} Cu_{29}^{65} , Fe (6 ta), Hg (7 ta), Xe (9 ta), Sn (10 ta).
IZOBAR	Bir xil: ✓ atom massasi Xar xil: 1) yadro zaryadi 2) protonlar soni 3) neytronlar soni 4) elektronlar soni	Ar_{18}^{40} K_{19}^{40} Ca_{20}^{40} , Cu_{29}^{65} Zn_{30}^{65} , Cd_{48}^{112} Sn_{50}^{112}
IZOTON	Bir xil: ✓ neytronlar soni Xar xil: 1) atom massasi 2) yadro zaryadi 3) protonlar soni 4) elektronlar soni	Cr_{24}^{52} Mn_{25}^{53} Fe_{26}^{56} N = 28 ta, Xe_{54}^{136} Ba_{56}^{138} La_{57}^{139} , N = 28 ta
IZOELEKTRON	Bir xil: ✓ elektronlar soni Xar xil: 1) atom massasi 2) yadro zaryadi 3) protonlar soni 4) neytronlar soni	O_2^- F^- Ne Na^+ Mg^{2+} Al^{3+} $\bar{e} = 10$ ta, CH_4 NH_3 H_2O $\bar{e} = 10$ ta

ATOM TARKIBI

Yadro zaryadi	Protonlar (P) soni	Elektronlar (ē) soni	Neytronlar (N) soni	Elektron qobiqlar	Atom (Ar) massasi	Abso lyut (A _{abs}) mas sasi
Tartib raqamiga teng	Tartib raqamiga teng	Tartib raqamiga teng	$N = Ar - P$	Davr raqamiga teng	Davriy jadvalda berilgan	$A_{abs} = \frac{Ar}{Mr} \cdot 10^{23}$

YADROVIY REAKSIYALAR	
Yadroga birikish (qulash, bombardimon, nurlantirish, yog'dirish, ta'sir qilish, yutilish, qamrab olish)	Yadrodan ajralish (yemirilish, otilib chiqish, parchalanish, sochish,)
Bunda birikkan zarrachaning massa va zaryadlari yadroning massa va zaryadlariga qo'shiladi: ${}_{92}^{238}\text{U} + {}_2^4\alpha \rightarrow {}_{94}^{242}\text{Pu}$; ${}_{92}^{238}\text{U} + {}_0^1n \rightarrow {}_{92}^{239}\text{U}$; ${}_{92}^{238}\text{U}$;	Bunda ajrali chiqan zarrachaning massa va zaryadlari yadroning massa va zaryadlaridan ayiriladi: ${}_{92}^{238}\text{U} \rightarrow {}_{90}^{234}\text{Th} + {}_2^4\alpha$; ${}_{92}^{238}\text{U} + {}_2^4\alpha \rightarrow {}_{90}^{234}\text{Th}$;
!!! ${}_{-1}^0\beta$ va ${}_{-1}^0\bar{e}$ uchun teskari amal bajariladi ya'ni biriksa ayiriladi: ${}_{93}^{237}\text{Np} + {}_{-1}^0\beta ({}_{-1}^0\bar{e}) \rightarrow {}_{92}^{237}\text{U}$!!! ${}_{-1}^0\beta$ va ${}_{-1}^0\bar{e}$ uchun teskari amal bajariladi ya'ni ajralsa qo'shiladi: ${}_{97}^{247}\text{Bk} \rightarrow {}_{98}^{247}\text{Np} + {}_{-1}^0\beta ({}_{-1}^0\bar{e})$

RADIOAKTIV ZARRACHALAR			
BELGI SI	NOMLANISHI	MASSASI	ZARYADI
${}_{2}^4\alpha$	Alfa	4 g	+2
${}_{-1}^0\beta$	Betta	0 g	-1
${}_{1}^1\text{P}$	Proton	1 g	+1
${}_{1}^2\text{D}$	Deyteriy	2 g	+1
${}_{1}^3\text{T}$	Tritiy	3 g	+1
${}_{0}^1n$	Neytron	1 g	0
${}_{-1}^0\bar{e}$	Elektron	0 g	-1
${}_{+1}^0\beta$	Pozitron	0 g	+1
${}_{0}^0\gamma$	Gamma	0 g	0

DAVRIY JADVALDAN FOYDALANISH
Davr raqami Qobiqlar soni, tashqi elektronlar qobig'ining raqmini bildiradi.
Guruh raqami Bosh a guruhcha elementlarining maksimal (yuqori) valentliklarini bildiradi (kislrod va ftor bundan mustasno). Bitta guruhchada joylashgan elementlarning kimyoviy

Tartib
raqami

xossalari ham bir xil bo'ladi.
Yadro zaryadi, elektronlar soni va protonlar sonini
bildiradi.

Formula	Yadrolararo masofa (nm)	Gibridlanishi	Valent burchagi
Al ₂ Br ₆	Al-Br 0,222 ± 0,002 Al-Br` 0,238 ± 0,002		118 ± 3° 87 ± 6°
Al ₂ Cl ₆	Al-Cl 0,208 ± 0,001 Al-Cl` 0,230 ± 0,002		123 ± 2° 79 ± 10°
As ₄	As-As 0,2435 ± 0,0004		60°
AsBr ₃	As-Br 0,2329 ± 0,0002 Br ... Br 0,3561 ± 0,005		99,7 ± 0,3°
AsCl ₃	As-Cl 0,21621 ± 0,0009		98,63 ± 0,37°
AsF ₃	As-F 0,17044 ± 0,00013		95,97 ± 0,28°
AsH ₃	As-H 0,15108 ± 0,00004		92,08 ± 0,04°
As ₄ O ₆	As-O 0,178 ± 0,002		99 ± 2°
BBr ₃	B-Br 0,18932 ± 0,00054 Br ... Br 0,32830 ± 0,00053		120°
BCl ₃	B-Cl 0,17421 ± 0,00044 Cl ... Cl 0,30134 ± 0,00060		120°
BF ₃	B-F 0,13110 ± 0,00001		120°
B ₂ H ₆	B-H 0,1196 ± 0,0008 B-H` 0,1339 ± 0,0006		122°
BJ ₃	B-J 0,2118 ± 0,0005 J ... J 0,3662 ± 0,008		101°
BaBr ₂	Ba-Br 0,299 ± 0,003		120°
BaCl ₂	Ba-Cl 0,282 ± 0,003		120 ± 10°
BaF ₂	Ba-F 0,232 ± 0,003		100°
BaJ ₂	Ba-J 0,320 ± 0,003		170°
BeBr ₂	Be-Br 0,191 ± 0,002		180°
BeCl ₂	Be-Cl 0,175 ± 0,002		180°
BeF ₂	Be-F 0,140 ± 0,003		180°
BeJ ₂	Be-J 0,210 ± 0,002		180°
BrF ₃	Br-F 0,18061 Br-F` 0,172		187,58°
BrF ₅	Br-F 0,1774 ± 0,0003 Br-F` 0,1689 ± 0,0008		86,22°
CO ₂	C-O 0,1167 ± 0,0006		84,8 ± 0,1°
CS ₂	C-S 0,15529 ± 0,0005		89,5 ± 0,1°
CaBr ₂	Ca-Br 0,267 ± 0,003		180°
CaCl ₂	Ca-Cl 251 ± 0,003		180°
CaF ₂	Ca-F 210 ± 0,003		140°
CaJ ₂	Ca-J 0,2867 ± 0,0015		180°

CdBr_2	$\text{Cd}-\text{Br}$ $0,237 \pm 0,002$	180°
CdCl_2	$\text{Cd}-\text{Cl}$ $0,221 \pm 0,002$	180°
CdF_2	$\text{Cd}-\text{F}$ $0,197 \pm 0,002$	180°
CdJ_2	$\text{Cd}-\text{J}$ $0,255 \pm 0,002$	180°
ClF_3	$\text{Cl}-\text{F}$ $0,1698 \pm 0,0005$ $\text{Cl}-\text{F}$ $0,1598 \pm 0,0005$	$87,5^\circ$
ClF_5	$\text{Cl}-\text{F}$ $0,167 \pm 0,005$ $\text{Cl}-\text{F}$ $0,158 \pm 0,005$	$86 \pm 0,5^\circ$
ClO_2	$\text{Cl}-\text{O}$ $0,1475$ $\text{O} \dots \text{O}$ $0,2524$	$117,7^\circ$
Cl_2O	$\text{Cl}-\text{O}$ $0,170038 \pm 0,000069$	$110,96 \pm 0,08^\circ$
Fe_2Cl_6	$\text{Fe}-\text{Cl}$ $0,211 \pm 0,003$ $\text{Fe}-\text{Cl}$ $0,228 \pm 0,003$	$128 \pm 3^\circ$ $92 \pm 3^\circ$
GeCl_4	$\text{Ge}-\text{Cl}$ $0,2113 \pm 0,0003$	$109,5^\circ$
GeF_6	$\text{Ge}-\text{F}$ $0,167 \pm 0,003$	$109,5^\circ$
HCN	$\text{H}-\text{C}$ $0,10655 \pm 0,00005$ $\text{C}-\text{N}$ $0,115321 \pm 0,000010$	180°
HN_3	HN $0,0975 \pm 0,0015$ NN $0,1237 \pm 0,0002$ $\text{N}-\text{N}$ $0,1133 \pm 0,0002$	114°
HNO_3	$\text{H}-\text{O}$ $0,0961$ $\text{O}-\text{N}$ $0,1405$ $\text{N}-\text{O}$ $0,121$	$102,2^\circ$ $115,9^\circ$ $130,2^\circ$
HOCl	$\text{H}-\text{O}$ $0,0959 \pm 0,0005$ $\text{O}-\text{Cl}$ $0,1689 \pm 0,0003$	$102,5 \pm 0,5^\circ$
H_2O	$\text{O}-\text{H}$ $0,095718 \pm 0,00003$	$104,52 \pm 0,05^\circ$
H_2O_2	$\text{O}-\text{H}$ $0,0965 \pm 0,0005$ $\text{O}-\text{O}$ $0,1452 \pm 0,0004$	$100 \pm 1^\circ$ ikki yoqlama burchagi $119,1 \pm 1,8^\circ$
H_2S	$\text{S}-\text{H}$ $0,13362$	$92,06^\circ$
H_2Se	$\text{Se}-\text{H}$ $0,1460 \pm 0,003$	$90,92 \pm 0,08^\circ$
H_2Te	$\text{Te}-\text{H}$ $0,1658$	$90,25^\circ$
HgCl_2	$\text{Hg}-\text{Cl}$ $0,2252 \pm 0,005$ $\text{Cl} \dots \text{Cl}$ $0,448 \pm 0,004$	$180 \pm 16^\circ$
MgBr_2	$\text{Mg}-\text{Br}$ $0,234 \pm 0,003$	180°
MgCl_2	$\text{Mg}-\text{Cl}$ $0,2186 \pm 0,0011$	180°
MgF_2	$\text{Mg}-\text{F}$ $0,1771 \pm 0,0010$	180°
MgJ_2	$\text{Mg}-\text{J}$ $0,252 \pm 0,003$	180°
NF_3	$\text{N}-\text{F}$ $0,1365 \pm 0,0002$	$102,37 \pm 0,03^\circ$
NH_3	$\text{N}-\text{H}$ $0,1030 \pm 0,0002$	$107,28^\circ$
NO_2	$\text{N}-\text{O}$ $0,1197$	$134,25^\circ$
N_2O	$\text{O}-\text{N}$ $0,11843$ $\text{N}-\text{N}$ $0,11282$	180°

O ₃	O—O 0,12717 ± 0,00002	116,78 ± 0,03 ⁰
OF ₂	O—F 0,1412	103,17 ⁰
P ₄	P—P 0,221 ± 0,002	60 ⁰
PBr ₃	P—Br 0,2220 ± 0,0003 Br ... Br 0,3424 ± 0,0006	101,0 ± 0,4 ⁰
PCl ₃	P—Cl 0,2043 ± 0,0005	100 ± 1 ⁰
PCl ₅	P—Cl 0,2124 ± 0,0009 P—Cl` 0,2020 ± 0,0007	120 ⁰ 90 ⁰
PF ₅	P—F 0,1577 ± 0,0005 P—F` 0,1534 ± 0,0004	120 ⁰ 90 ⁰
PH ₃	P—H 0,1415	93,60 ⁰
P ₄ O ₆	P—O 0,165 ± 0,002	127,5 ± 3 ⁰ 99 ± 3 ⁰
P ₄ O ₁₀	P—O 0,162 ± 0,002 P—O` 0,139 ± 0,002	123,5 ± 1 ⁰ 101,5 ± 1 ⁰ 116,5 ± 1 ⁰
POCl ₃	P—O 0,1455 ± 0,005 P—Cl 0,1989 ± 0,0002	103,7 ± 1 ⁰
POF ₃	P—O 0,1436 ± 0,0006 P—F 0,1524 ± 0,0003	101,3 ± 0,2 ⁰
PbBr ₂	Pb—Br 0,260 ± 0,003	95 ⁰
PbCl ₂	Pb—Cl 0,246 ± 0,002	96 ± 3 ⁰
PbF ₂	Pb—F 0,218 ± 0,002	90 ⁰
SCl ₂	S—Cl 0,2014 ± 0,0004	102,8 ± 0,2 ⁰
SF ₂	S—F 0,159208 ± 0,000008	98,197 ± 0,011 ⁰
SF ₄	S—F 0,1643 ± 0,0005 S—F` 0,1542 ± 0,0005	176,8 ± 2,5 ⁰ 103,8 ± 0,6 ⁰
SF ₆	S—F 0,1564	90 ⁰
SO ₂	S—O 0,1431 ± 0,0002 O ... O 0,2460 ± 0,0012	118,5 ± 1,0 ⁰
SO ₃	S—O 0,1418 ± 0,0003	120 ± 0,6 ⁰
SOCl ₂	S—O 0,1443 ± 0,0006 S—Cl 0,2076 ± 0,0006	96,1 ± 0,7 ⁰ 106,3 ± 0,6 ⁰
SO ₂ Cl ₂	S—O 0,1404 ± 0,0004 S—Cl 0,2011 ± 0,0005	123,5 ± 0,8 ⁰ 100,0 ± 0,7 ⁰ 107,7 ± 0,4 ⁰
SOF ₂	S—O 0,14127 ± 0,00003 S—F 0,15854 ± 0,00002	92,83 ± 0,002 ⁰ 106,82 ± 0,003 ⁰
SO ₂ F ₂	S—O 0,1405 ± 0,0003 S—F 0,1530 ± 0,0003	124 ± 0,2 ⁰ 108,3 ⁰ 96,12 ± 0,17 ⁰
SbBr ₃	Sb—Br 0,2490 ± 0,0003 Br—Br 0,376 ± 0,001	98,2 ± 0,6 ⁰
SbCl ₃	Sb—Cl 0,2333 ± 0,0003 Cl ... Cl 0,350 ± 0,002	97,2 ± 0,9 ⁰

SbCl ₅	Sb—Cl 0,243 ± 0,006 Sb—Cl` 0,231 ± 0,006		90° 120°
SbF ₃	Sb—F 0,1879 ± 0,0004		95,0 ± 0,8°
SbH ₃	Sb—H 0,17102		91,3 ± 0,3°
SiCl ₄	Si—Cl 0,2018 ± 0,0002		109,5°
SiF ₄	Si—F 0,1555 ± 0,0002 F ... F 0,2534 ± 0,0003		109,5°
SiH ₄	Si—H 0,14798 ± 0,00004		109,5°
SnCl ₂	Sn—Cl 0,2342		100°
SnCl ₄	Sn—Cl 0,2281 ± 0,0004		109,5°
SrBr ₂	Sr—Br 0,282 ± 0,003		180°
SrCl ₂	Sr—Cl 0,267 ± 0,003		130 ± 8°
SrF ₂	Sr—F 0,220 ± 0,003		140°
SrJ ₂	Sr—J 0,3009 ± 0,0015		180°
XeF ₂	Xe—F 0,1977 ± 0,00015		180°
XeF ₄	Xe—F 0,194 ± 0,001		90°
XeO ₃	Xe—O 0,176		103°
XeO ₄	Xe—O 0,1736 ± 0,002		180°
ZnBr ₂	Zn—Br 0,221 ± 0,001		180°
ZnCl ₂	Zn—Cl 0,205 ± 0,001		180°
ZnF ₂	Zn—F 0,181 ± 0,002		180°
ZnJ ₂	Zn—J 0,238 ± 0,002		180°

No	EL EM.	ATOM RADIUS	ION RADIUSI	SUYUQ . t°	QAY. t°	ZICHLI GI	2-IONLANISH POTENSIALI	3-IONLANISH POTENSIALI
1	H	0,79	1 ⁻ = 0,136 1 ⁺ = 0,000	-255,34	-252,87	8,99 E-5	—	—
2	He	0,49	0 = 0,136	-272,2	268,93 4	1,78 E-4	54,416	—
3	Li	2,05	1 ⁺ = 0,068	180,54	1342	0,53	76,638	122,4 51
4	Be	1,4	2 ⁺ = 0,034	1287	2472	1,85	18,211	153,8 93
5	B	1,17	3 ⁺ = (0,020)	2079	4000	2,34	25,154	37,93
6	C	0,91	4 ⁺ = 0,020 4 ⁻ = (0,260)	3825	4827	2,62	24,384	47,88 7
7	N	0,75	3 ⁺ = 5 ⁺ = 0,015 3 ⁻ = 0,148	-209,36	-195,8	1,25 E-3	29,601	47,44 8

8	O	0,65	2 ⁻ = 0,136	-218,4	-182,96 2	1,43 E- 3	31,117	54,93 4
9	F	0,57	1 ⁻ = 0,133	-219,62	-188,14	1,69 E- 3	34,97	62,70 7
10	Ne	0,51	0 = 0,160	-248,67	-246,04 8	8,99 E- 4	40,962	63,45
11	Na	2,23	1 ⁺ = 0,098	97,81	882,9	0,97	47,286	71,64 1
12	Mg	1,72	2 ⁺ = 0,074	648,8	1090	1,74	15,035	80,14 3
13	Al	1,82	3 ⁺ = 0,057	660,37	2519	2,7	18,227	28,44 7
14	Si	1,46	4 ⁺ = 0,039	1410	3265	2,33	16,345	33,49 2
15	P	1,23	3 ⁺ = 5 ⁺ = 0,035 3 ⁻ = 0,186	44,1	277	1,82	19,725	30,18
16	S	1,09	2 ⁻ = 0,182 6 ⁺ = (0,029)	115,21	444,6	2,07	23,33	34,83
17	Cl	0,97	1 ⁻ = 0,181 7 ⁺ = (0,026)	-100,93	-34,6	3,21 E- 3	29,81	39,61 1
18	Ar	0,88	0 = 0,192	-189,2	-185,7	1,78 E- 3	27,629	40,74
19	K	2,77	1 ⁺ = 0,133	63,25	759,9	0,86	31,625	45,72
20	Ca	2,23	2 ⁺ = 0,104	839	1484	1,55	11,871	50,90 8
21	Sc	2,09	3 ⁺ = 0,083	1541	2830	3	12,8	24,76
22	Ti	2	2 ⁺ = 0,078 3 ⁺ = 0,069 4 ⁺ = 0,064	1668	3287	4,5	13,58	27,49 1
23	V	1,92	2 ⁺ = 0,072 3 ⁺ = 0,067 4 ⁺ = 0,061 5 ⁺ = 0,040	1890	3407	5,8	14,65	29,31
24	Cr	1,85	2 ⁺ = 0,083 3 ⁺ = 0,064 6 ⁺ = 0,035	1857	2672	7,19	16,5	30,96
25	Mn	1,79	2 ⁺ = 0,091 3 ⁺ = 0,070 4 ⁺ = 0,052	1244	2061	7,43	15,64	33,66 7

			7+ = (0,046)					
2 6	Fe	1,72	2+ = 0,080 3+ = 0,067	1535	2861	7,86	16,18	30,65 1
2 7	Co	1,67	2+ = 0,078 3+ = 0,064	1495	2927	8,9	17,06	33,5
2 8	Ni	1,62	2+ = 0,074	1453	2913	8,9	18,168	35,17
2 9	Cu	1,57	1+ = 0,098 2+ = 0,080	1083	2567	8,96	20,292	36,83
3 0	Zn	1,53	2+ = 0,083	419,58	907	7,14	17,964	39,77 2
3 1	Ga	1,81	3+ = 0,062	29,78	2204	5,91	20,51	30,71
3 2	Ge	1,52	2+ = 0,065 4+ = 0,044	937,4	2830	5,32	15,934	34,22
3 3	As	1,33	3+ = 0,069 5+ = (0,047) 3- = 0,191	817	613	5,72	18,633	28,35 1
3 4	Se	1,22	2- = 0,103 4+ = 0,069 6+ = 0,035	217	684,9	4,79	21,19	30,82
3 5	Br	1,12	1- = 0,196 7+ = (0,039)	-7,2	58,78	3,12	21,8	36
3 6	Kr	1,03	0 = 0,198	-156,6	-152,3	3,71 E- 3	24,359	36,95
3 7	Rb	2,98	1+ = 0,149	38,89	686	1,53	27,28	40
3 8	Sr	2,45	2+ = 0,120	769	1384	2,6	11,03	43,6
3 9	Y	2,27	3+ = 0,097	1522	3338	4,47	12,24	20,52
4 0	Zr	2,16	4+ = 0,082	1852	4377	6,4	13,13	22,99
4 1	Nb	2,08	4+ = 0,067 5+ = 0,066	2468	4742	8,57	14,32	25,04
4 2	Mo	2,01	4+ = 0,068 6+ = 0,065	2617	4612	10,2	16,461	27,06
4 3	Tc	1,95	—	2172	4877	11,5	15,26	29,54
4 4	Ru	1,89	4+ = 0,062	2334	4150	12,2	16,76	28,47
4 5	Rh	1,83	3+ = 0,075 4+ = 0,065	1966	3695	12,4	18,08	31,06

4 6	Pd	1,79	4 ⁺ = 0,064	1552	2940	12,02	19,63	32,93
4 7	Ag	1,75	1 ⁺ = 0,113	961,93	2162	10,5	21,49	34,83
4 8	Cd	1,71	2 ⁺ = 0,099	320,9	765	8,65	16,908	37,48
4 9	In	2	1 ⁺ = 0,136 3 ⁺ = 0,092	156,61	2080	7,31	18,869	28,03
5 0	Sn	1,72	2 ⁺ = 0,102 4 ⁺ = 0,067	-231,97	2602	7,3	14,632	30,50 2
5 1	Sb	1,53	3 ⁺ = 0,090 5 ⁺ = 0,062 3 ⁺ = 0,208	630,74	1587	6,68	16,53	25,3
5 2	Te	1,42	2 ⁻ = 0,211 4 ⁺ = 0,089 6 ⁺ = (0,056)	449,5	989,9	6,24	18,6	27,96
5 3	I	1,32	1 ⁻ = 0,22 7 ⁺ = (0,050)	113,5	184,35	4,93	19,131	33
5 4	Xe	1,24	0 = 0,218	-111,9	-107,1	5,88 E- 3	21,21	32,1
5 5	Cs	3,34	1 ⁺ = 0,165	28,4	669,3	1,87	25,1	—
5 6	Ba	2,78	2 ⁺ = 0,138	725	1897	3,51	10,004	—
5 7	La	2,74	3 ⁺ = 0,104 4 ⁺ = 0,090	918	3464	6,7	11,059	19,17 4
5 8	Ce	2,7	3 ⁺ = 0,102 4 ⁺ = 0,088	798	3433	6,78	10,851	20,2
5 9	Pr	2,67	3 ⁺ = 0,100	931	3520	6,77	10,551	21,62
6 0	Nd	2,64	3 ⁺ = 0,099	1021	3074	7	10,727	22,07 6
6 1	Pm	2,62	3 ⁺ = 0,(098)	1042	3000	6,48	10,903	22,28 3
6 2	Sm	2,59	3 ⁺ = 0,097	1074	1794	7,54	11,069	23,42 3
6 3	Eu	2,56	3 ⁺ = 0,097	822	1527	5,26	11,245	24,92 6
6 4	Gd	2,54	3 ⁺ = 0,094	1313	3273	7,89	12,095	20,63 5
6 5	Tb	2,51	3 ⁺ = 0,089	1356	3230	8,27	11,525	21,91
6 6	Dy	2,49	3 ⁺ = 0,088	1412	2567	8,536	11,67	22,80 2

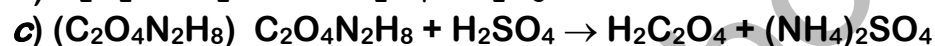
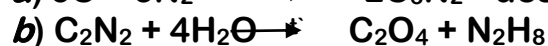
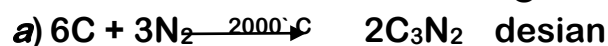
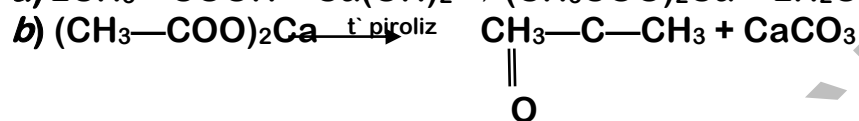
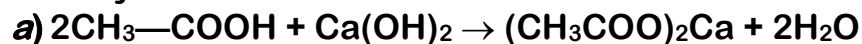
6 7	Ho	2,47	3 ⁺ = 0,086	1474	2700	8,8	11,805	22,84 3
6 8	Er	2,45	3 ⁺ = 0,085	1529	2868	9,05	11,929	22,73 9
6 9	Tm	2,42	3 ⁺ = 0,085	1545	1950	9,33	12,054	26,36 7
7 0	Yb	2,4	3 ⁺ = 0,081	819	1196	6,98	12,188	25,03
7 1	Lu	2,25	3 ⁺ = 0,080	1663	3402	9,85	13,888	20,95 7
7 2	Hf	2,16	4 ⁺ = 0,082	2227	4602	13,2	14,925	23,32
7 3	Ta	2,09	5 ⁺ = (0,066)	2996	5425	16,6	—	—
7 4	W	2,02	4 ⁺ = 0,068 6 ⁺ = 0,065	3410	5660	19,3	—	—
7 5	Re	1,97	6 ⁺ = 0,052	3180	5627	21	—	—
7 6	Os	1,92	4 ⁺ = 0,065	3054	5027	22,4	—	—
7 7	Ir	1,87	4 ⁺ = 0,065	2410	4130	22,42	—	—
7 8	Pt	1,83	4 ⁺ = 0,064	1772	3827	21,45	18,563	—
7 9	Au	1,79	1 ⁺ = (0,137)	1064,3	2808	19,32	20,521	—
8 0	Hg	1,76	2 ⁺ = 0,112	-38,87	356,58	13,546	18,759	34,20 2
8 1	Tl	2,08	1 ⁺ = 0,136 3 ⁺ = 0,105	303,5	1457	11,85	20,428	29,32 9
8 2	Pb	1,81	2 ⁺ = 0,126 4 ⁺ = 0,076	327,50 2	1740	11,34	15,028	31,94 3
8 3	Bi	1,63	3 ⁺ = 0,120 5 ⁺ = 0,074 3 ⁻ = 0,213	271,3	1560	9,8	16,687	25,55 9
8 4	Po	1,53	—	254	962	9,4	—	—
8 5	At	1,43	—	302	337	—	—	—
8 6	Rn	1,34	—	-71	-61,8	9,73 E- 3	—	—
8 7	Fr	—	—	27	677	—	—	—
8 8	Ra	—	2 ⁺ = 0,144	700	1140	5	10,148	—
8 8	Ac	—	3 ⁺ = 0,111	1050	3200	10,07	12,126	—

9								
9 0	Th	—	3 ⁺ =0,108 4 ⁺ =0,095	1750	4000	11,7	11,504	20,00 3
9 1	Pa	—	3 ⁺ =0,106 4 ⁺ =0,091	1600	—	15,4	—	—
9 2	U	—	3 ⁺ =0,104 4 ⁺ =0,088	1132	3818	18,9	—	—
9 3	Np	—	3 ⁺ =0,102 4 ⁺ =0,086	640	3902	20,45	—	—
9 4	Pu	—	3 ⁺ =0,101 4 ⁺ =0,085	641	3232	19,8	—	—
9 5	Am	—	3 ⁺ =0,100 4 ⁺ =0,080	994	2607	13,6	—	—
9 6	Cm	—	—	1340	—	13,5	—	—
9 7	Bk	—	—	—	—	—	—	—
9 8	Cf	—	—	—	—	—	—	—
9 9	Es	—	—	—	—	—	—	—
1 0 0	Fm	—	—	—	—	—	—	—
1 0 1	Md	—	—	—	—	—	—	—
1 0 2	(No)	—	—	—	—	—	—	—
1 0 3	Lr	—	—	—	—	—	—	—
1 0 4	Rf	—	—	—	—	—	—	—
1 0 5	Db	—	—	—	—	—	—	—
1 0 6	Sg	—	—	—	—	—	—	—
1 0 7	Bh	—	—	—	—	—	—	—
1	Hs	—	—	—	—	—	—	—

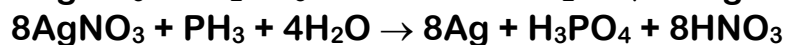
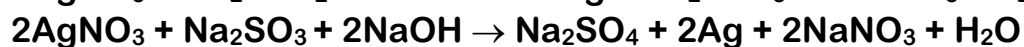
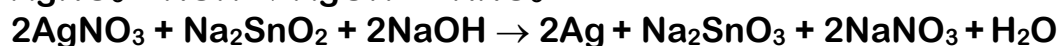
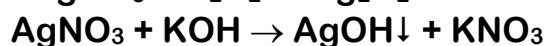
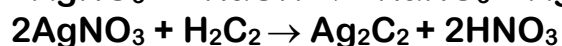
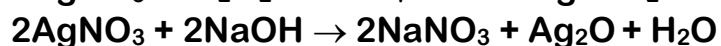
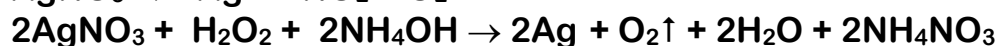
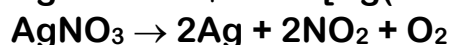
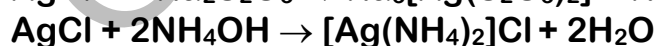
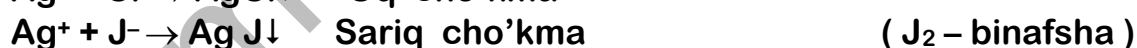
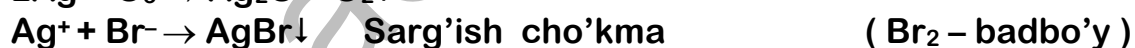
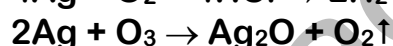
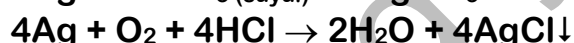
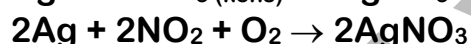
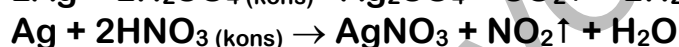
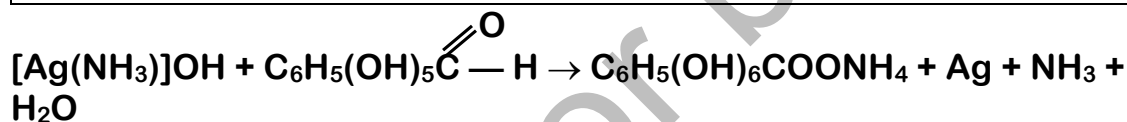
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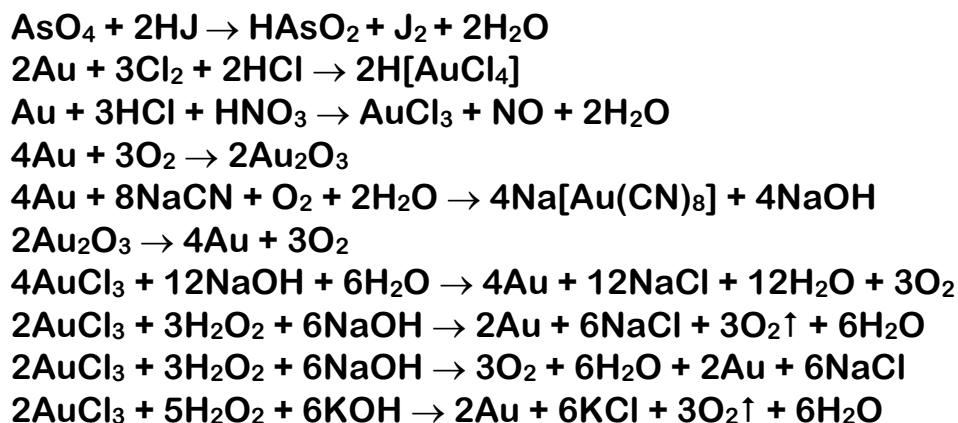
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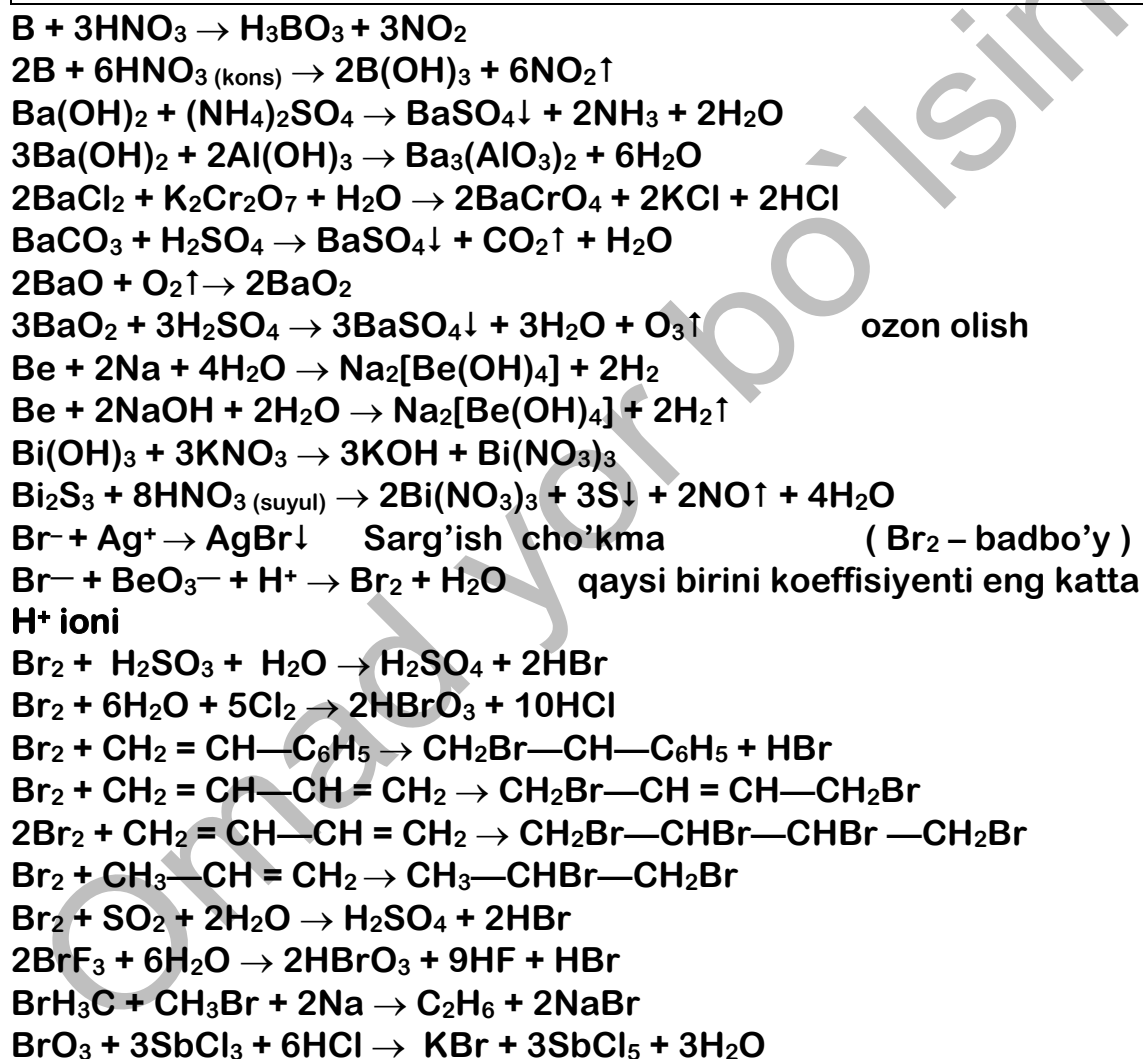
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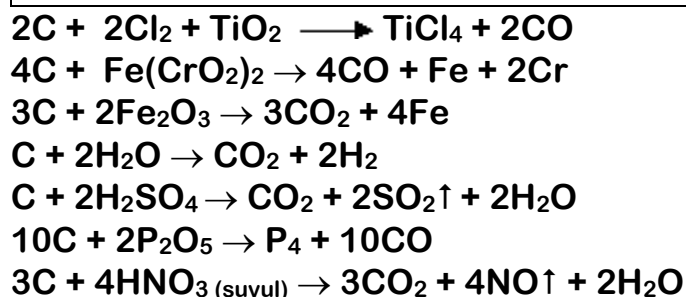


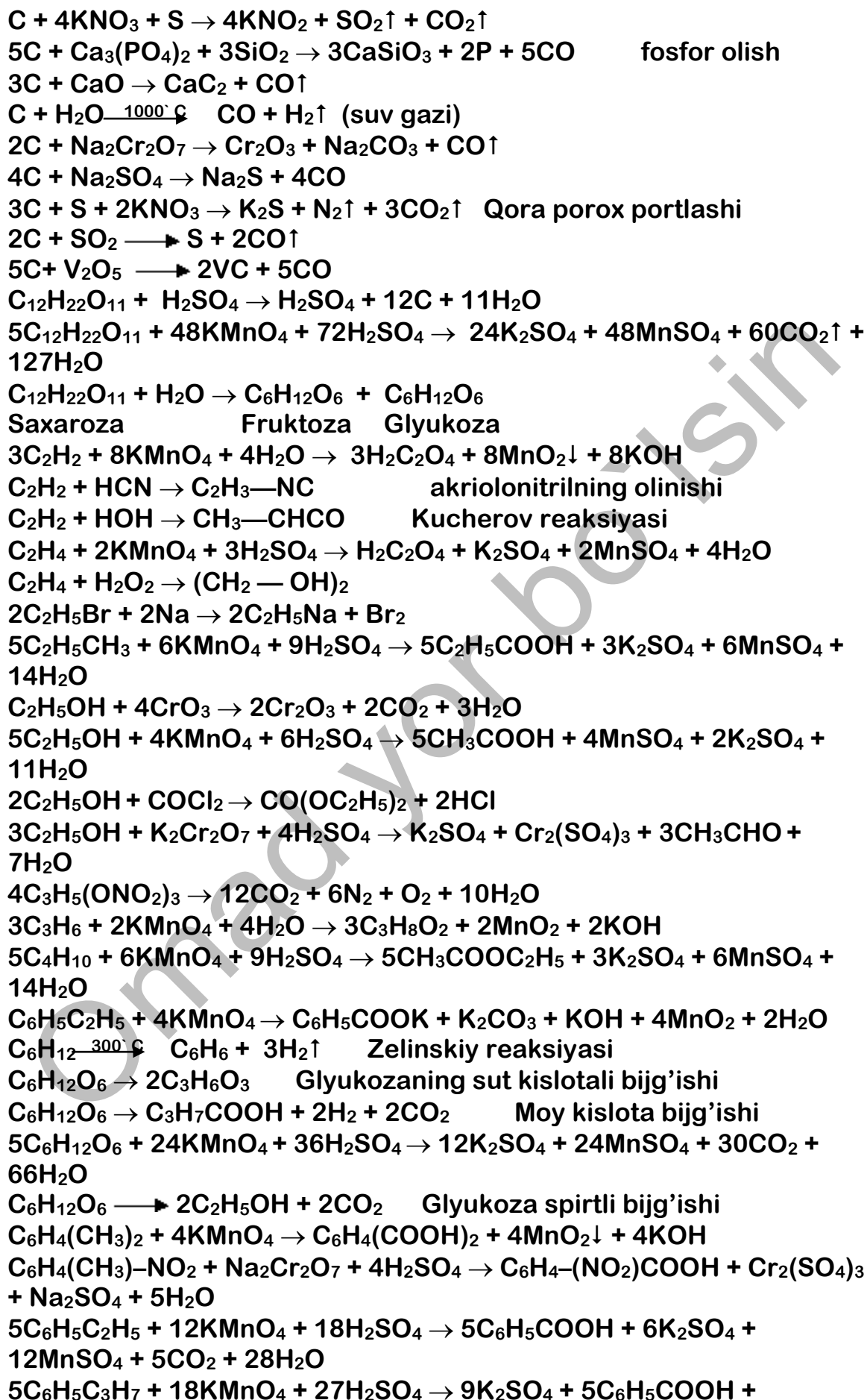


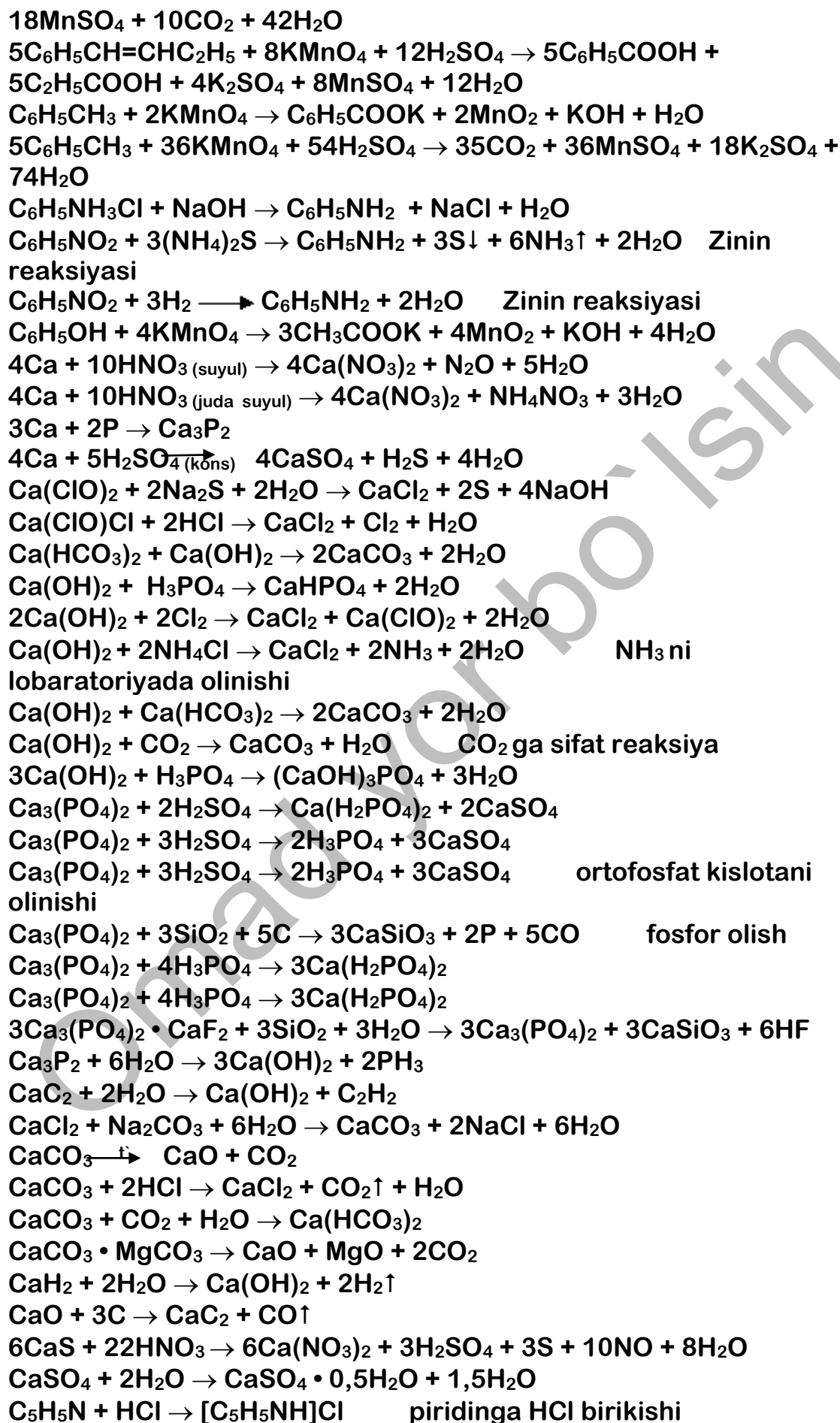
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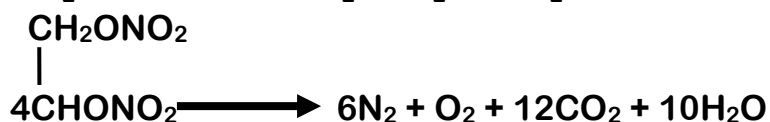
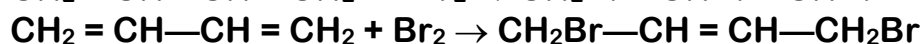
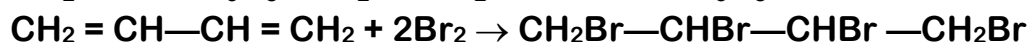
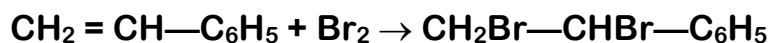
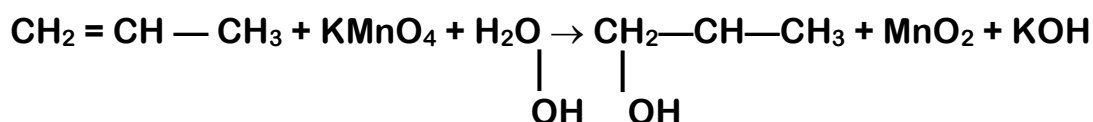


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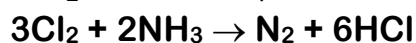
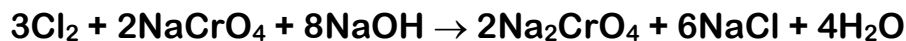
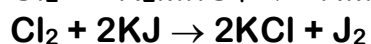
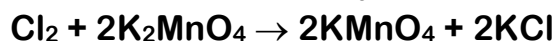
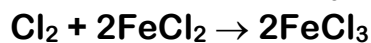
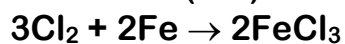
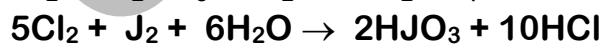
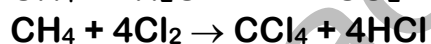
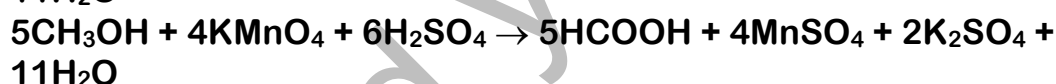
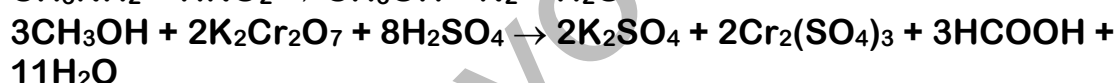
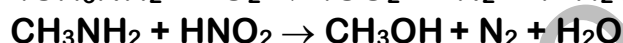
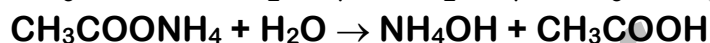
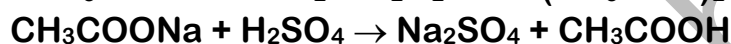
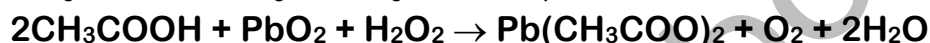
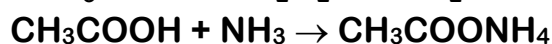
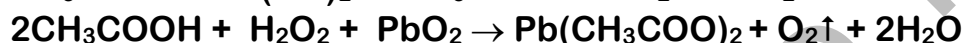
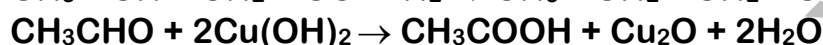
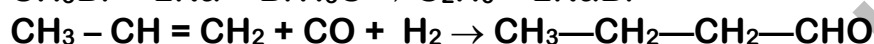
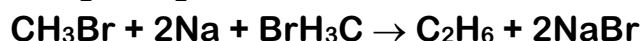




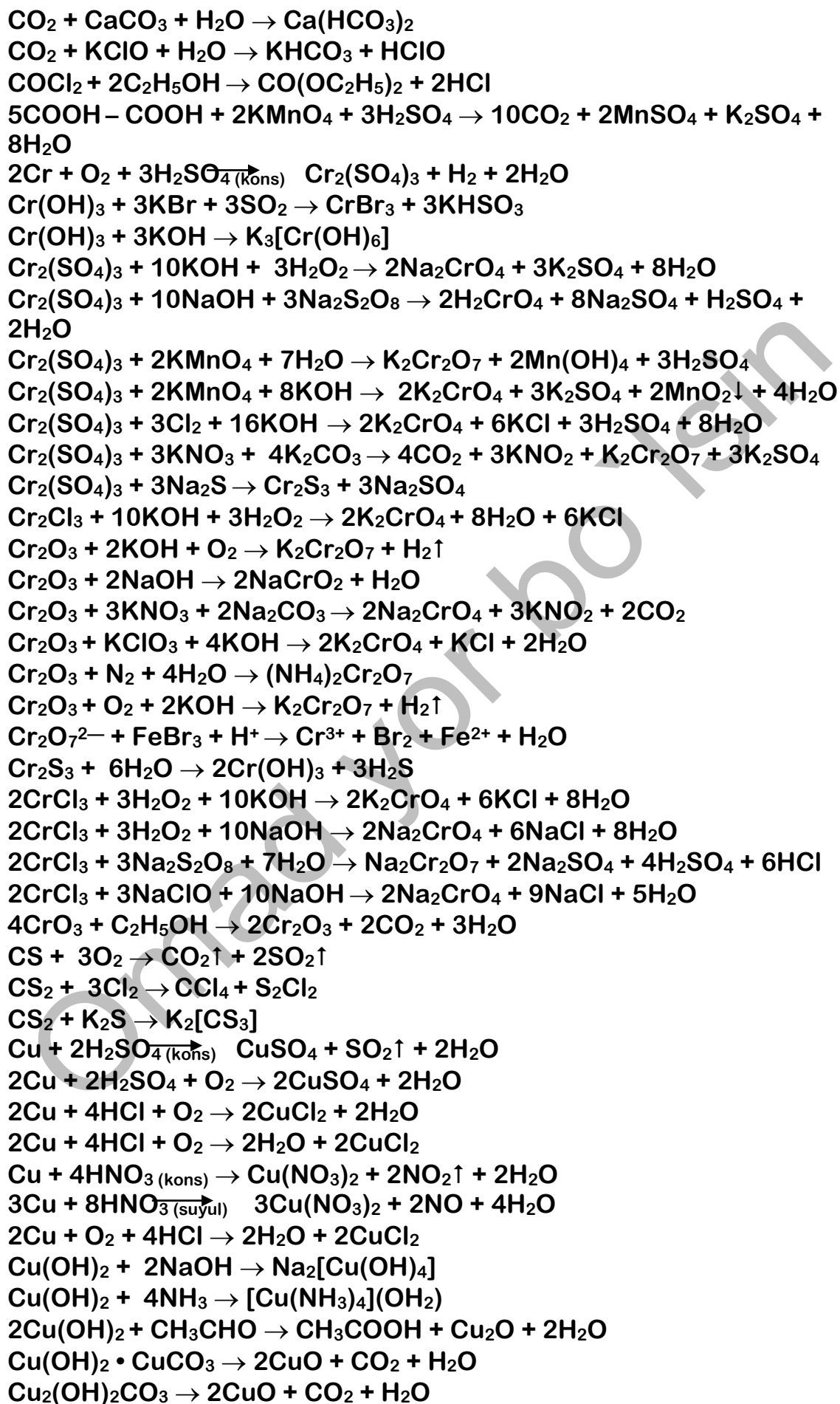


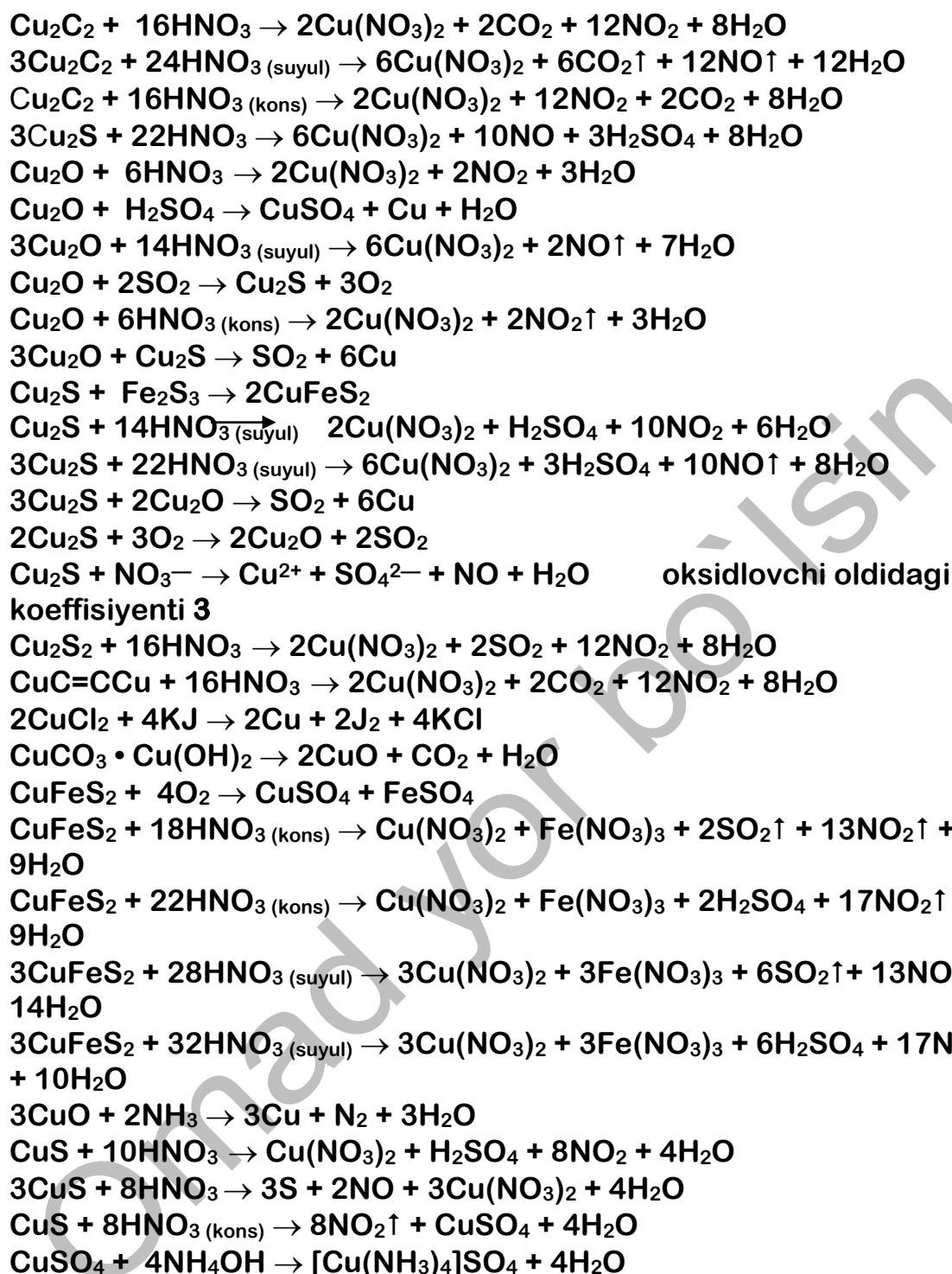
Nitroglitserin portlashi

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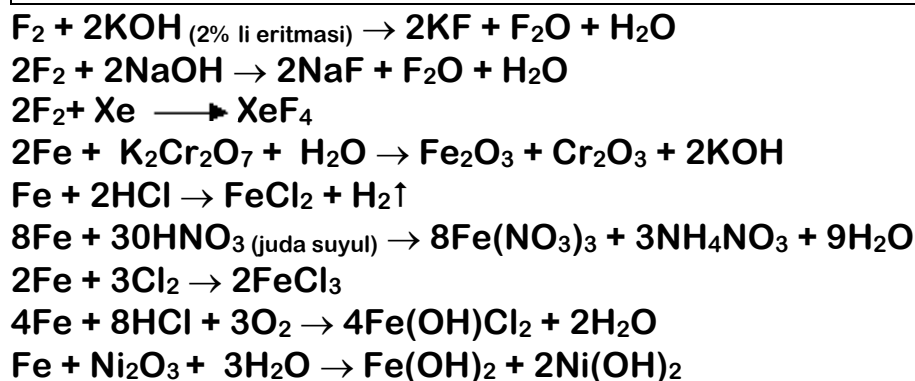




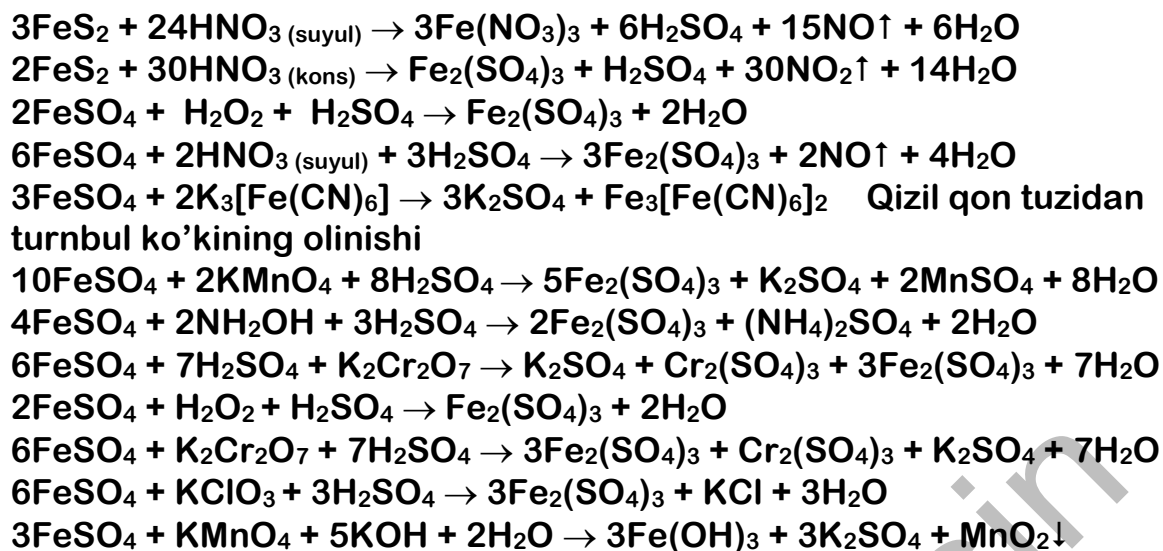




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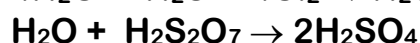
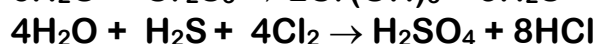
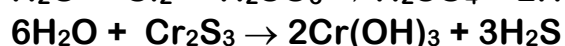
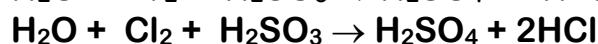
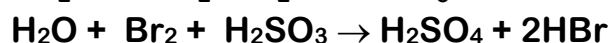
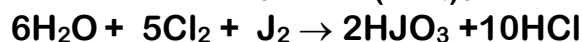
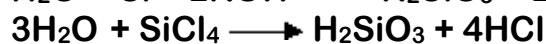
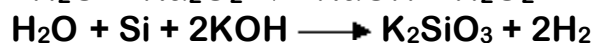
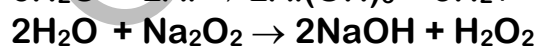
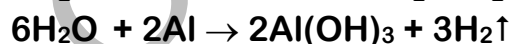
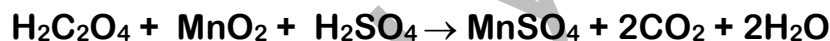
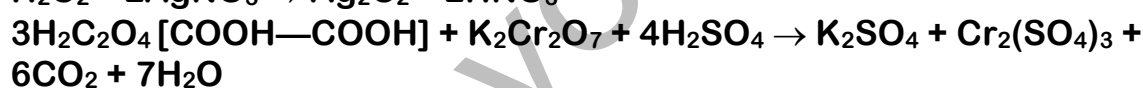
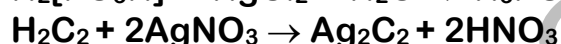
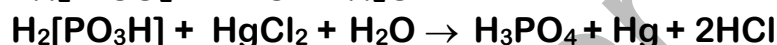
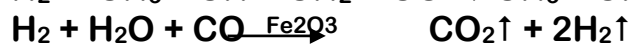
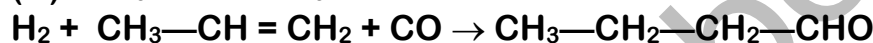
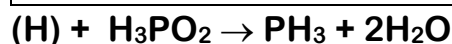


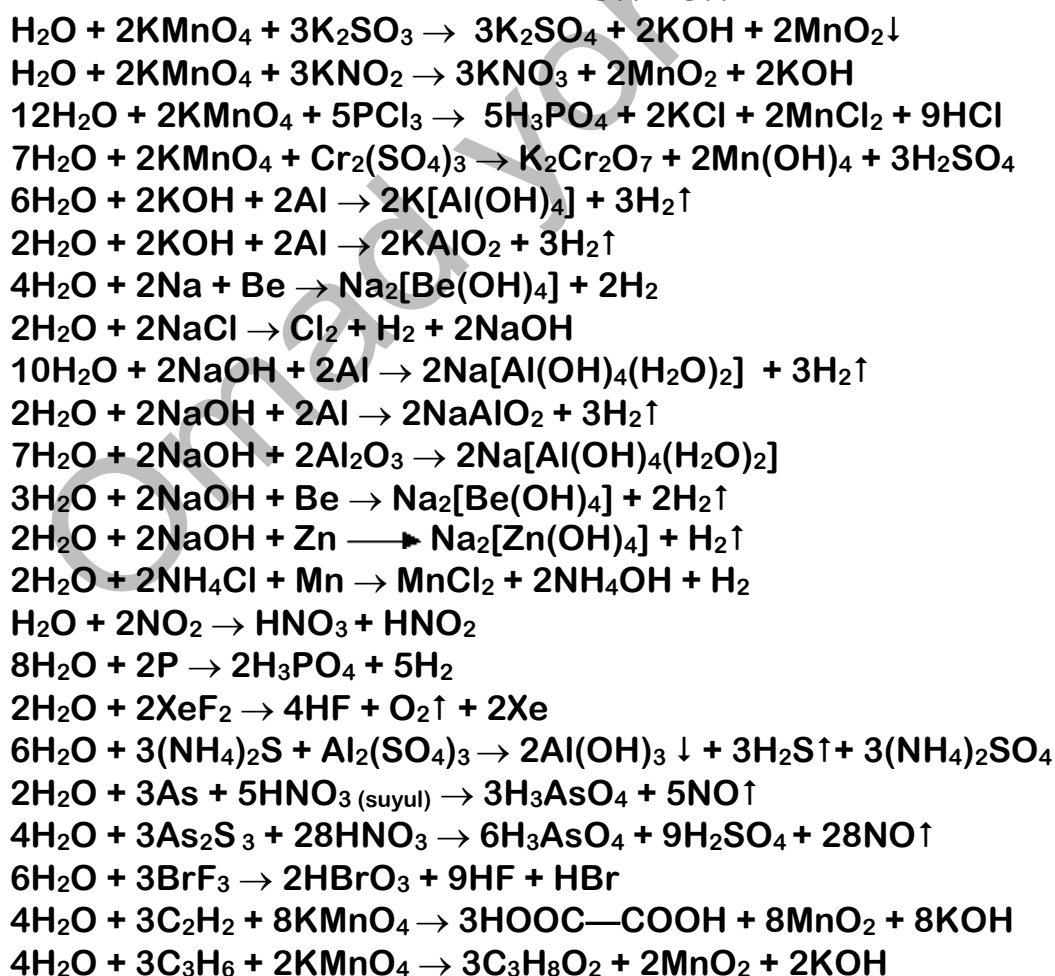
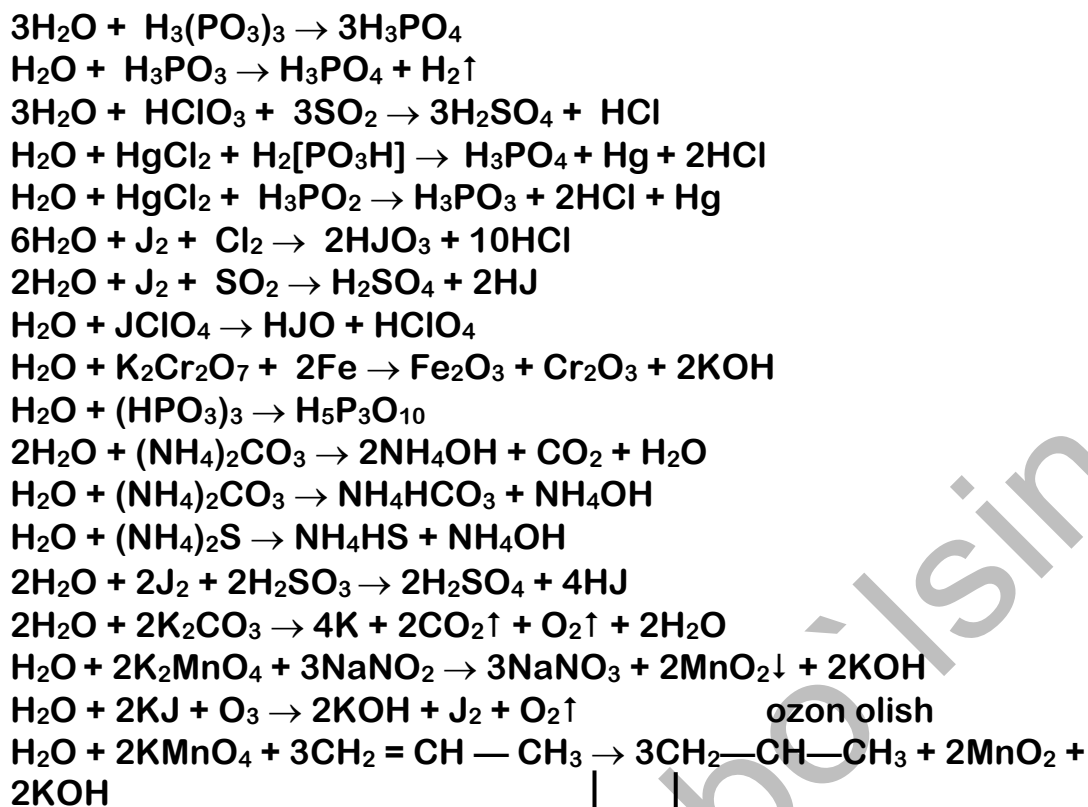


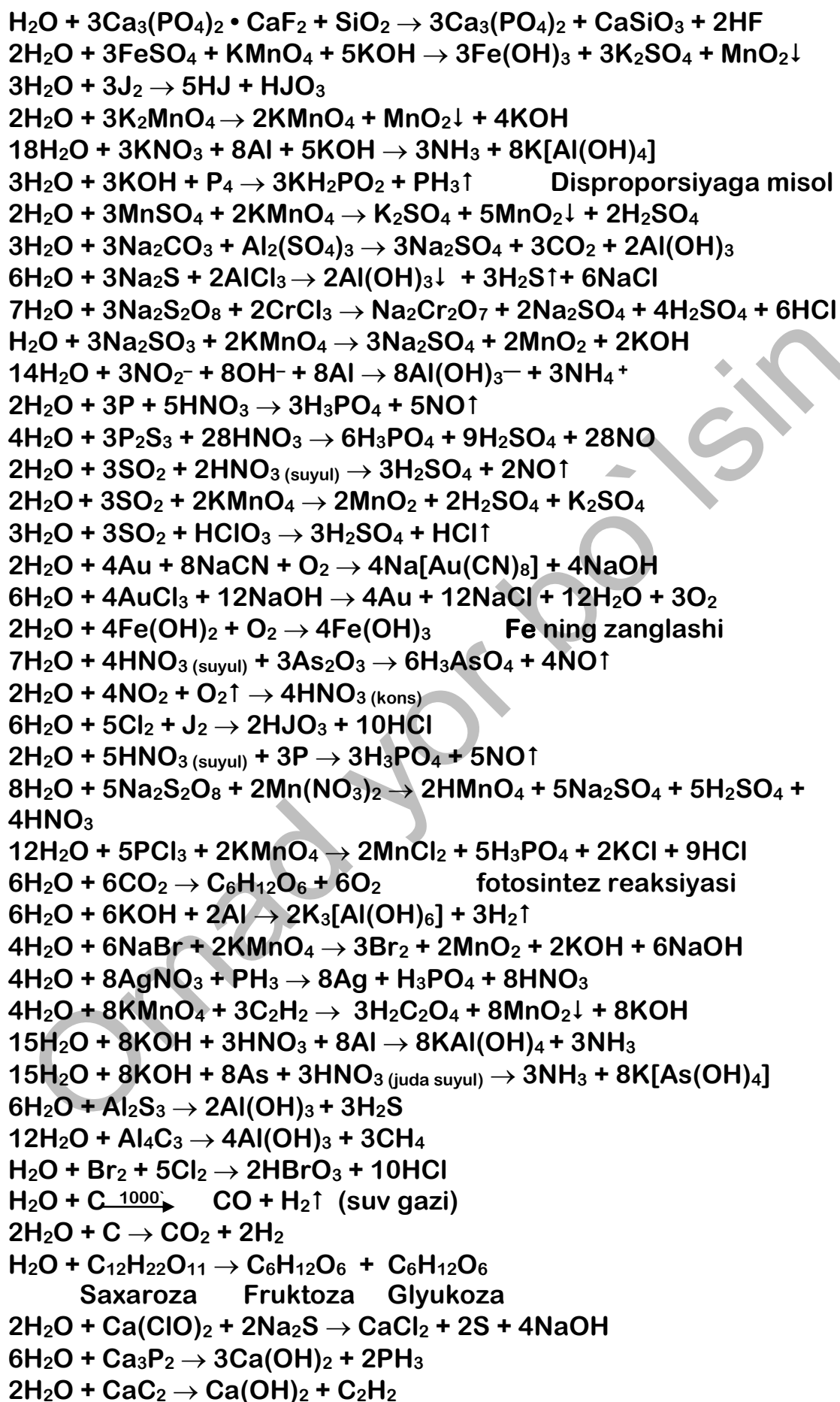
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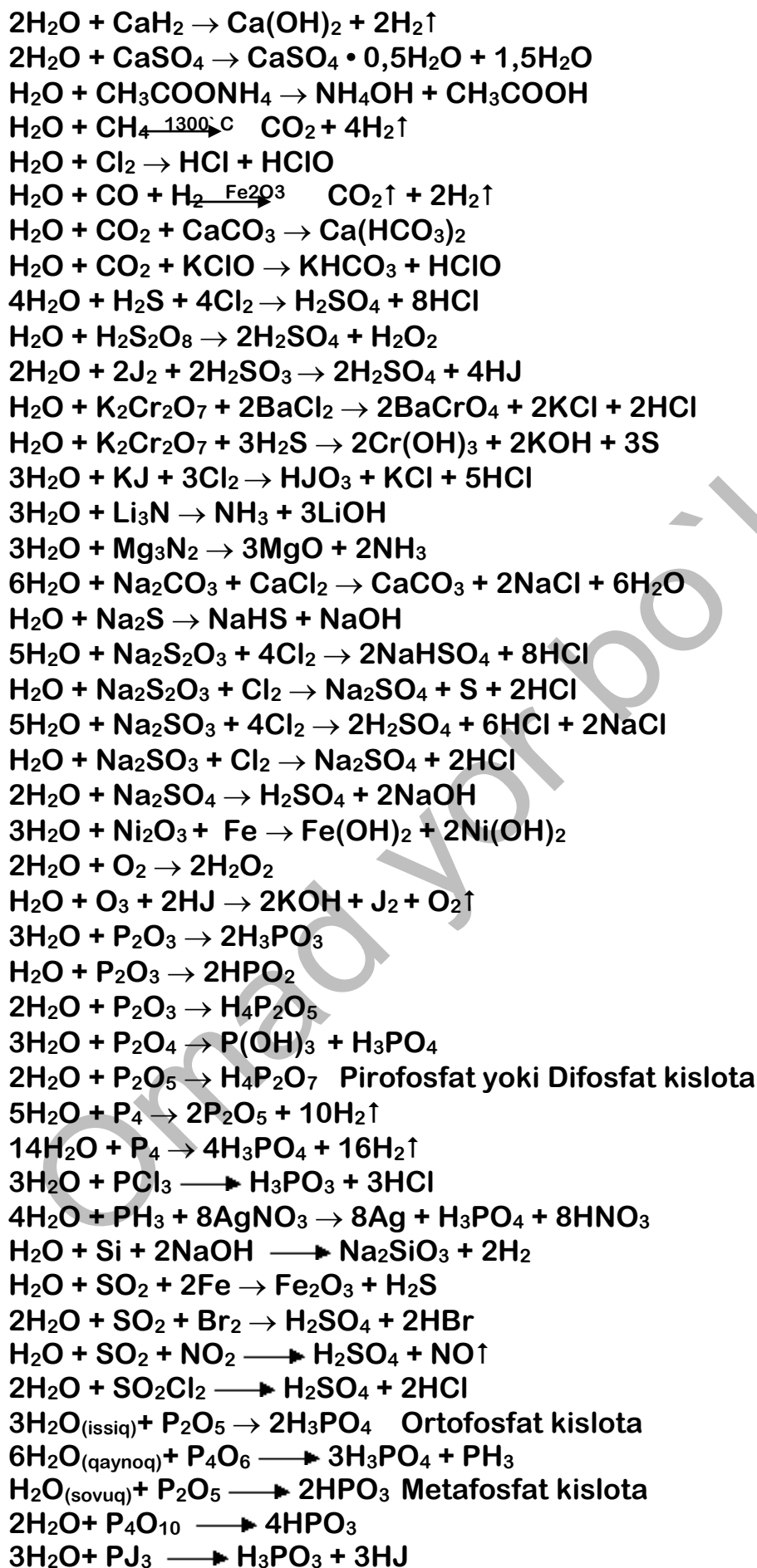


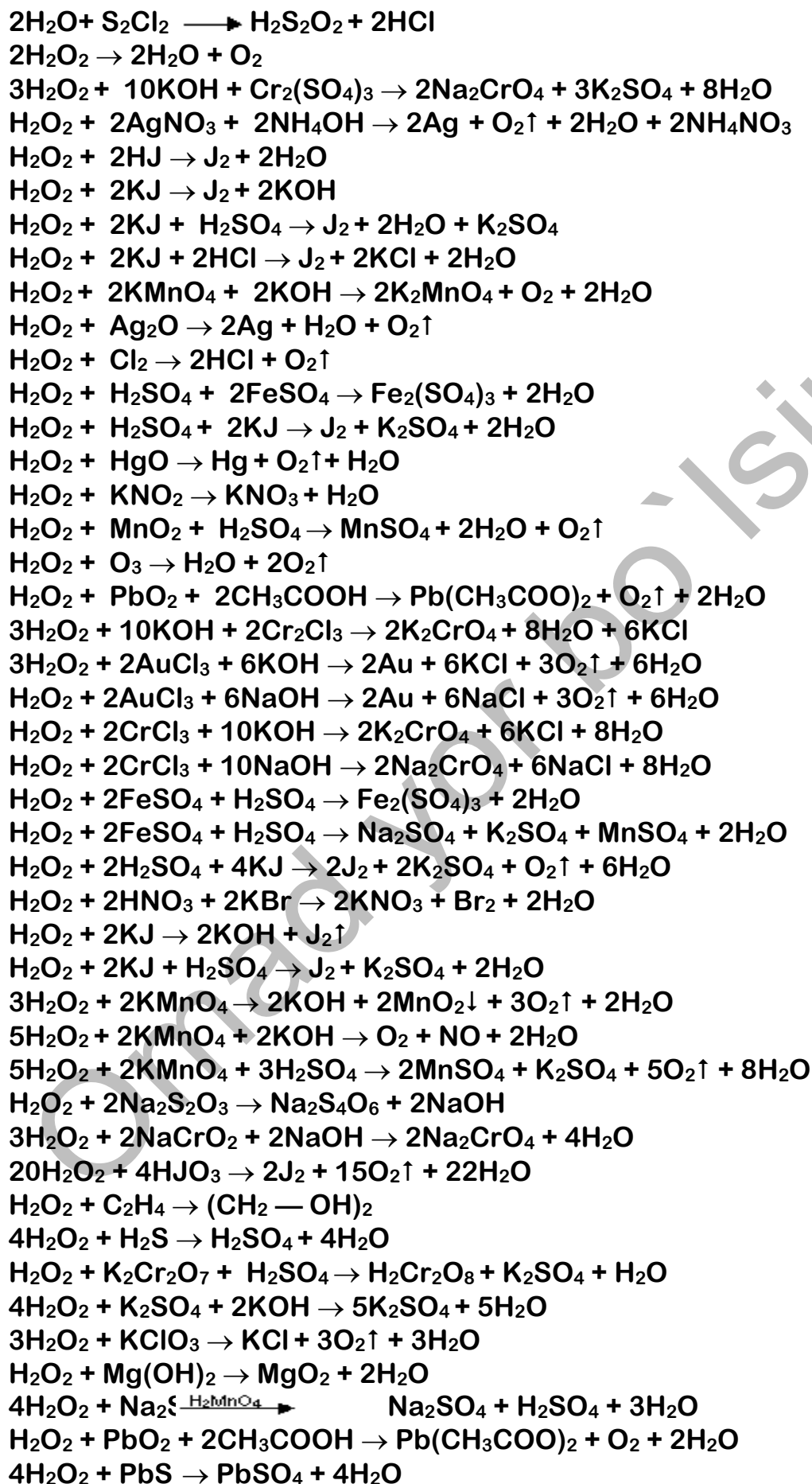
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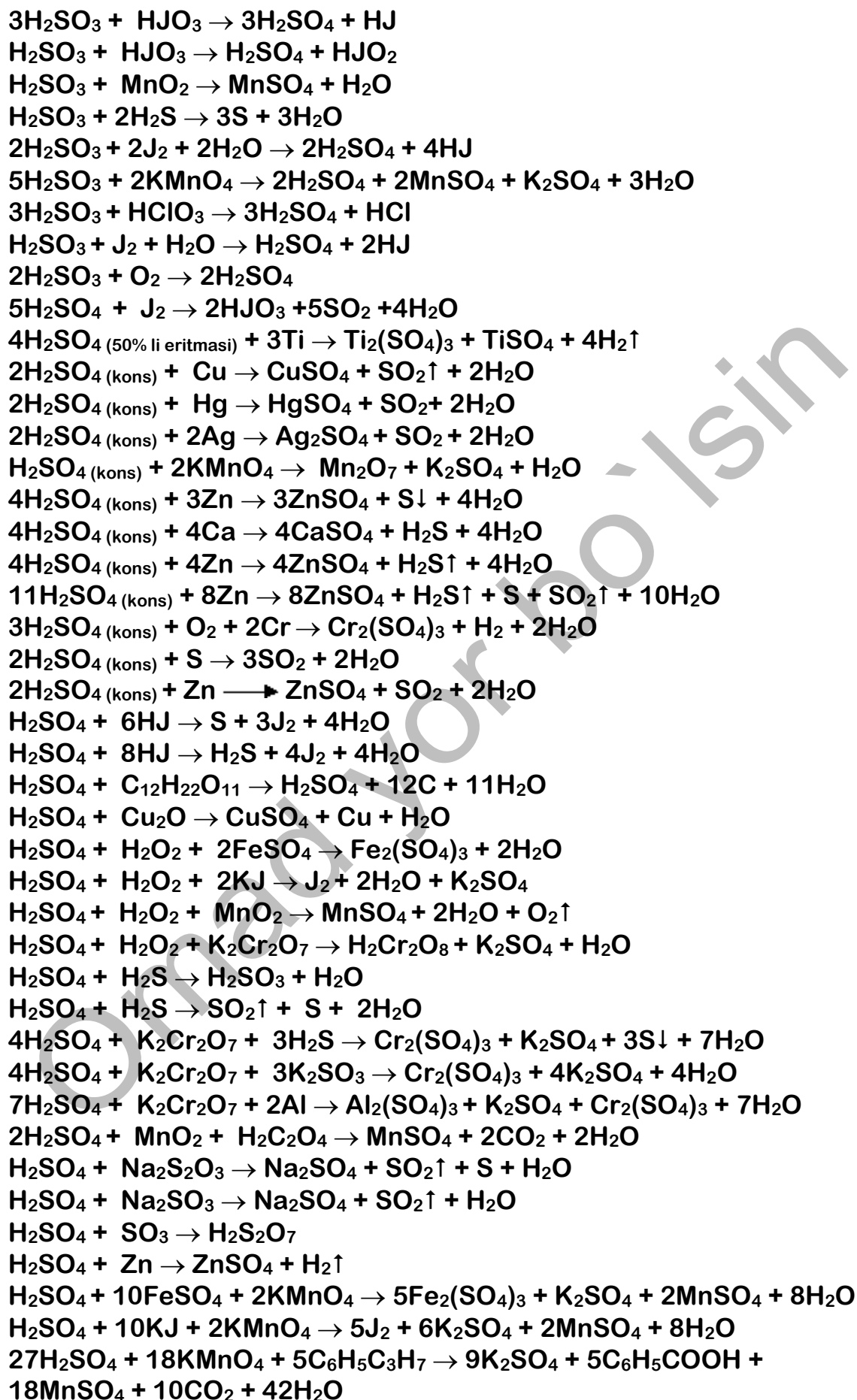


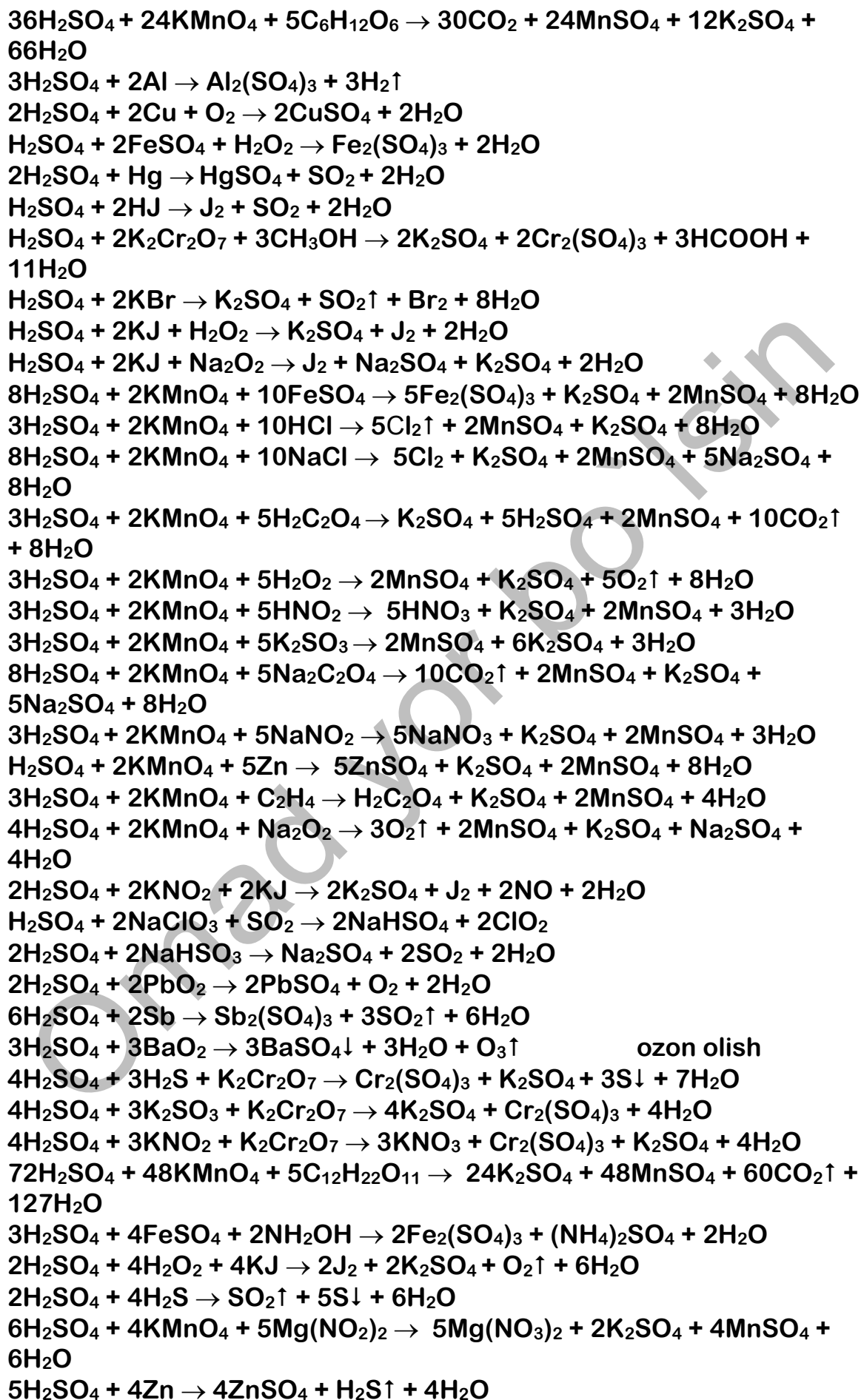


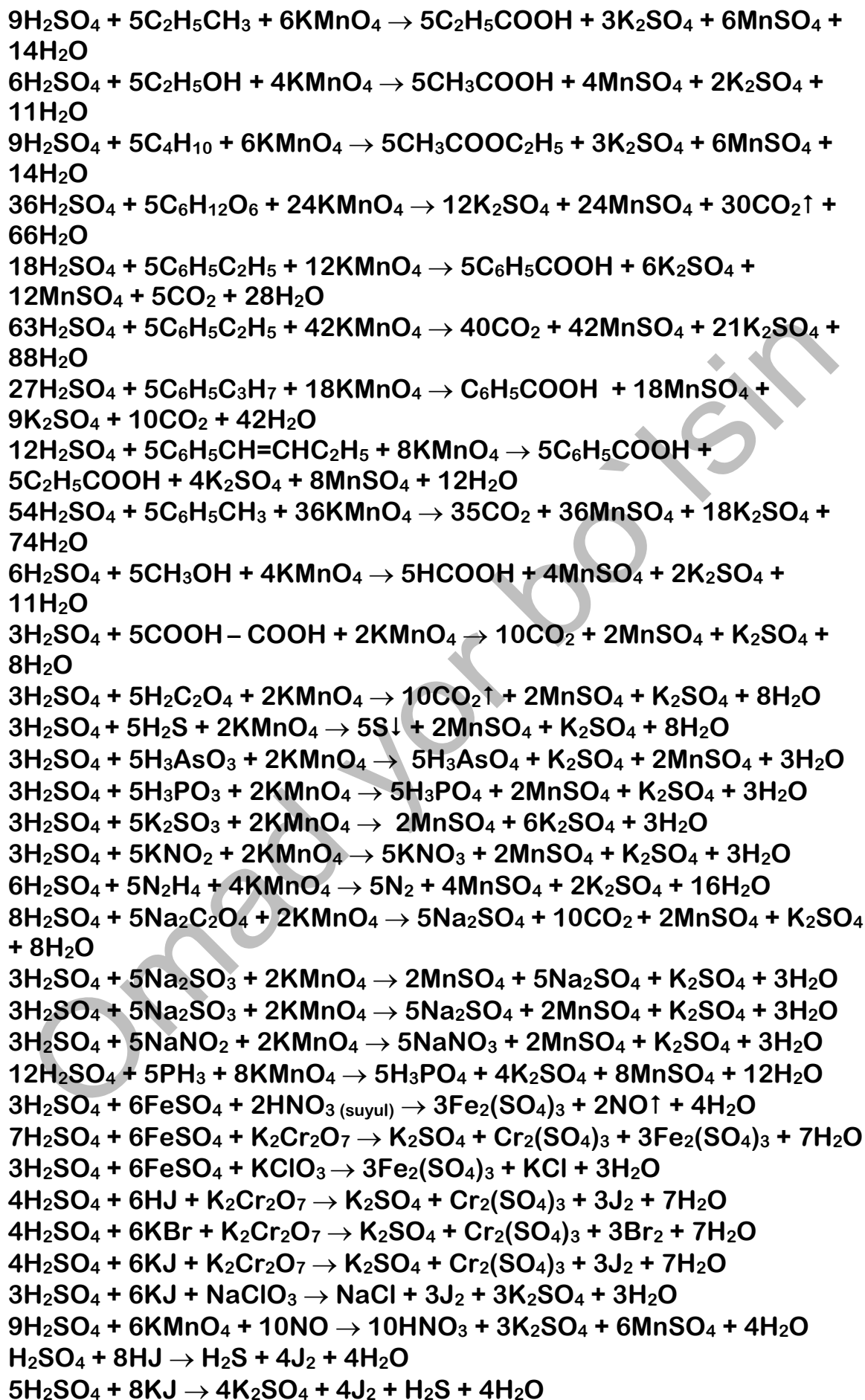


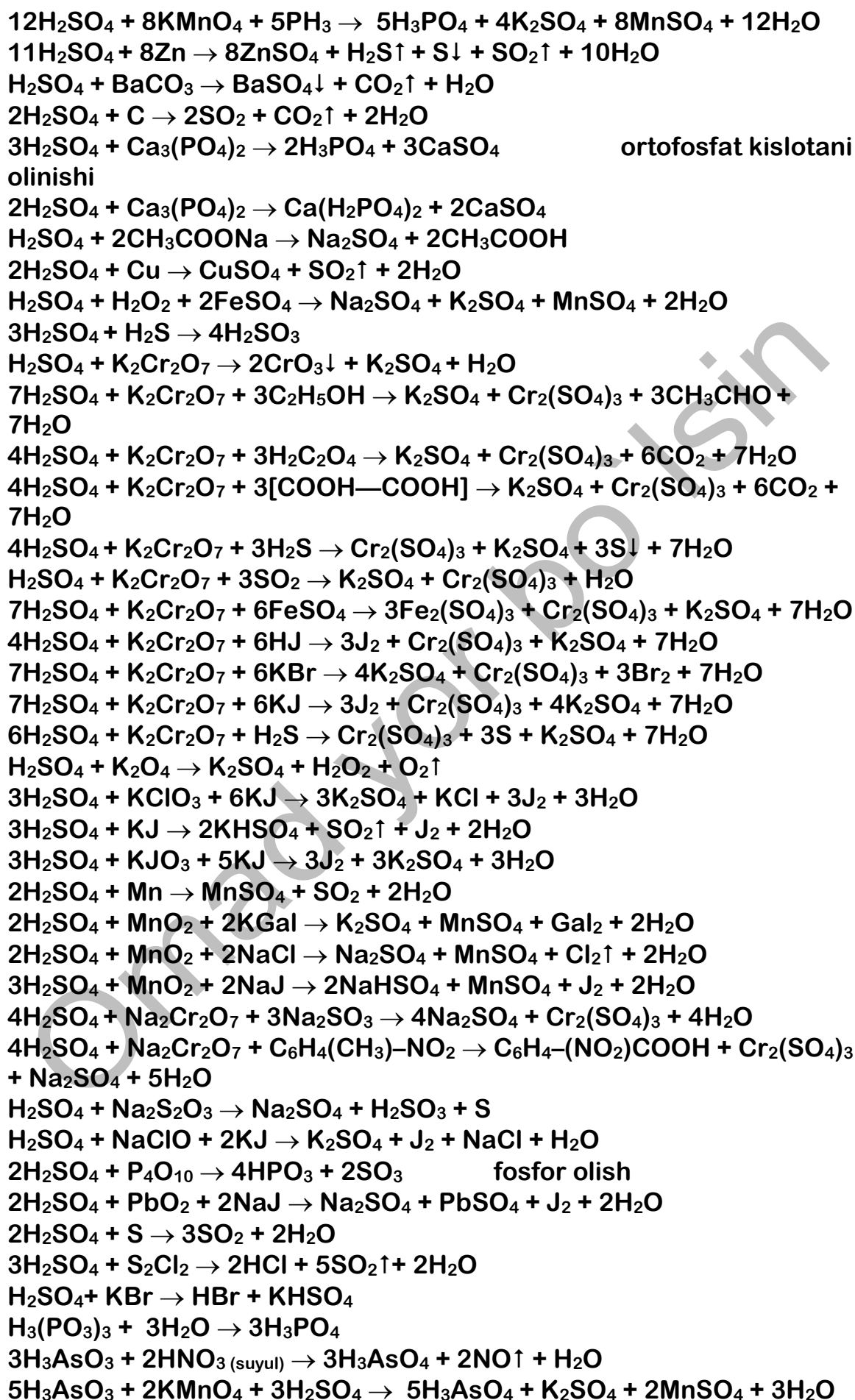


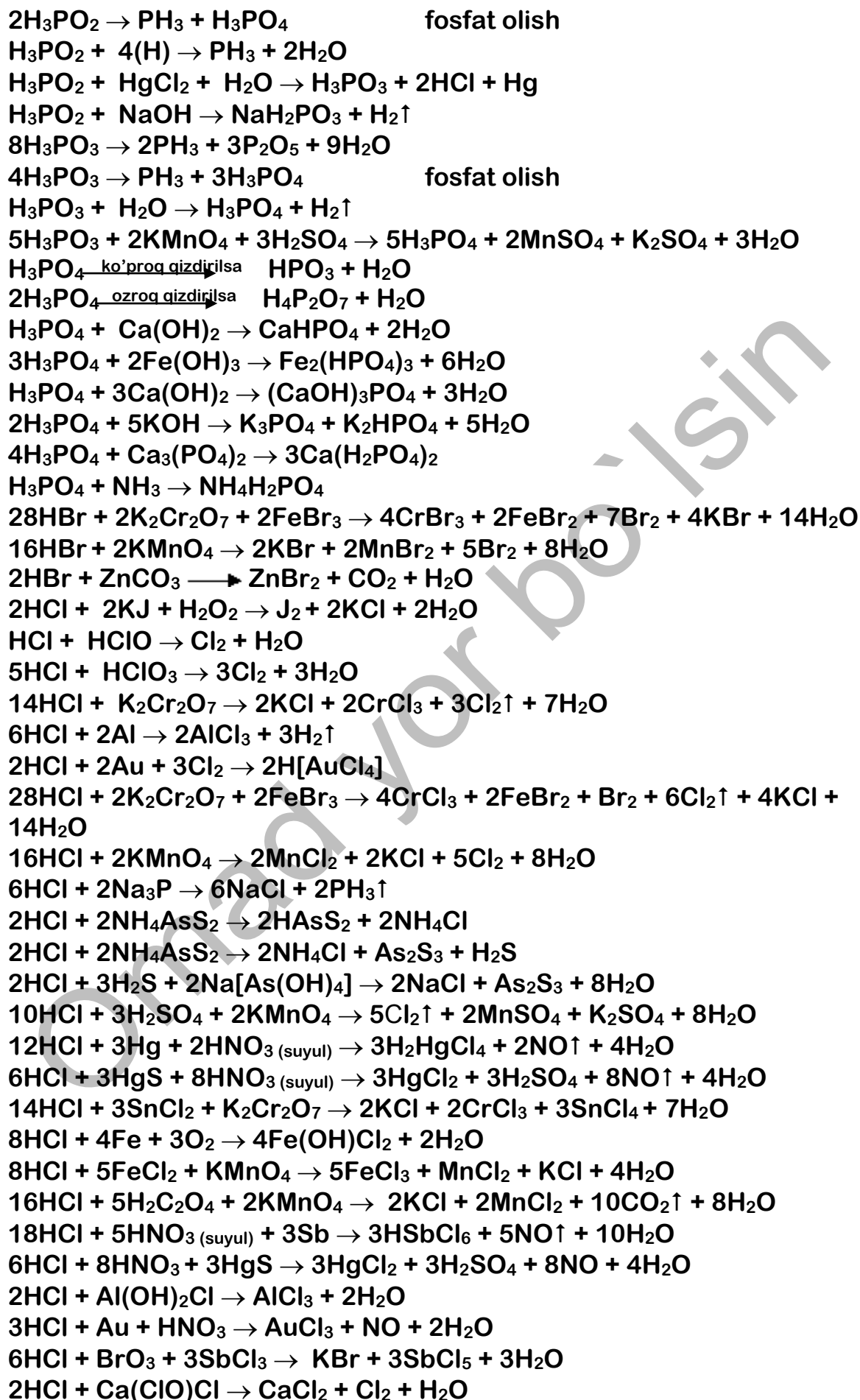


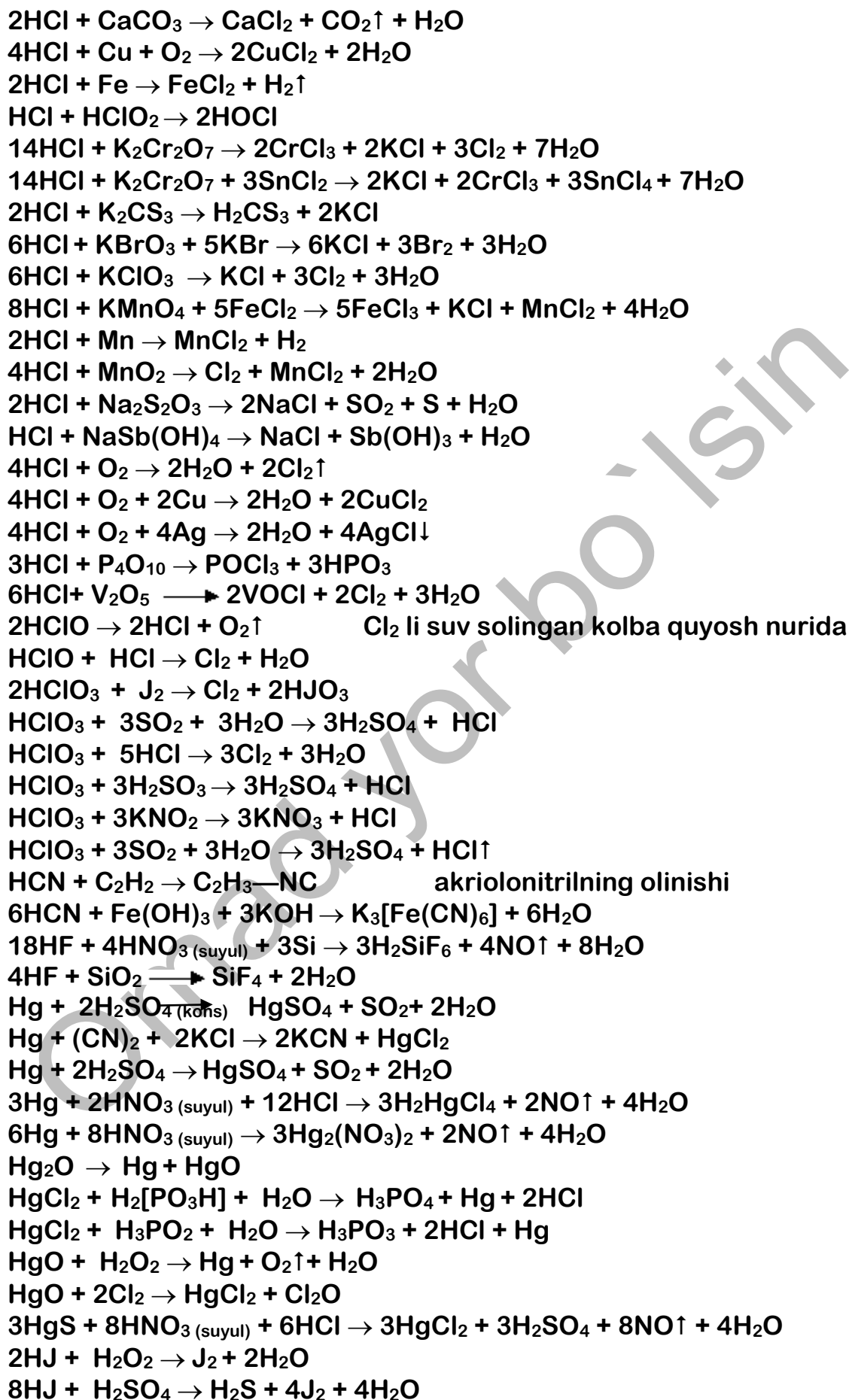




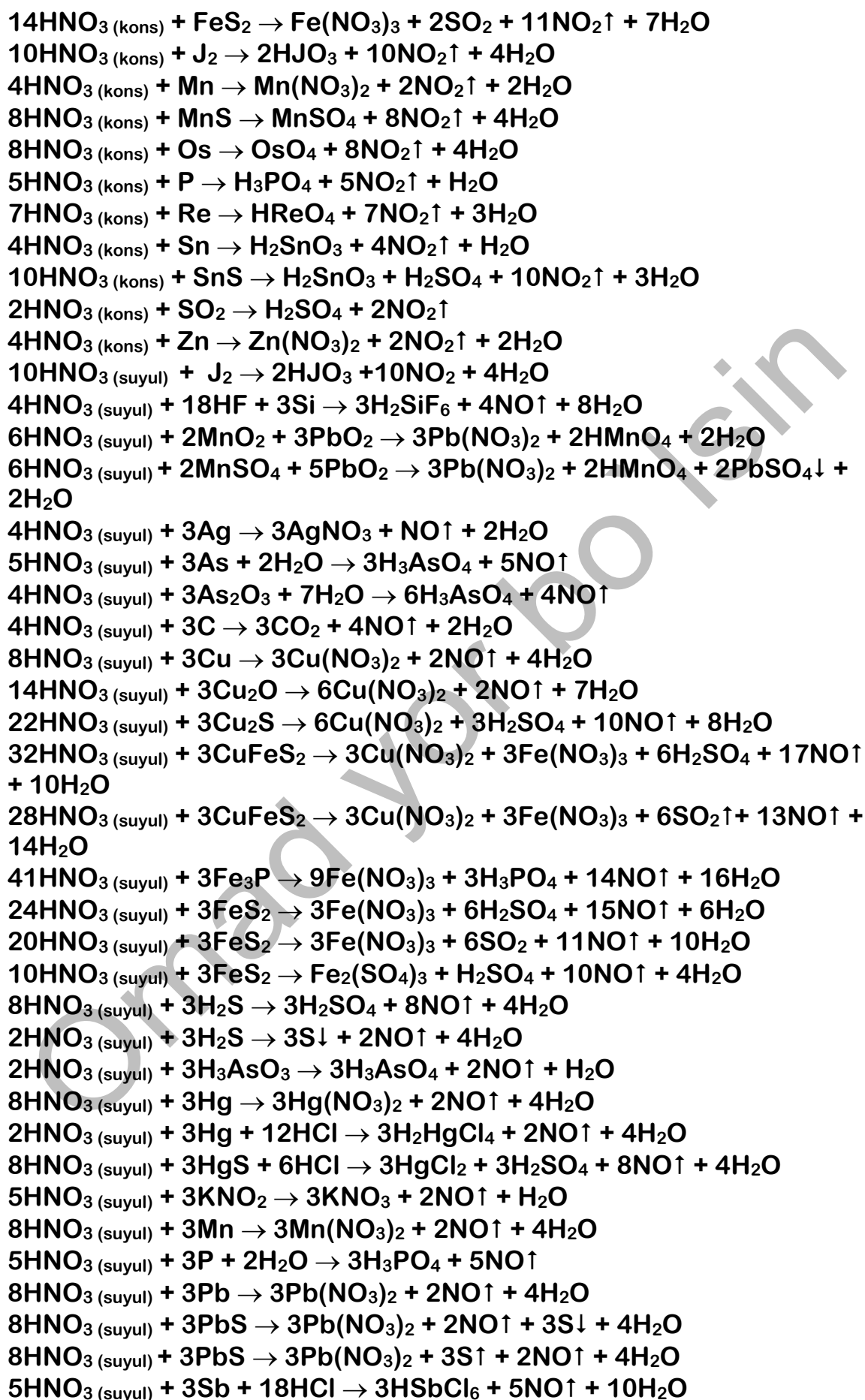


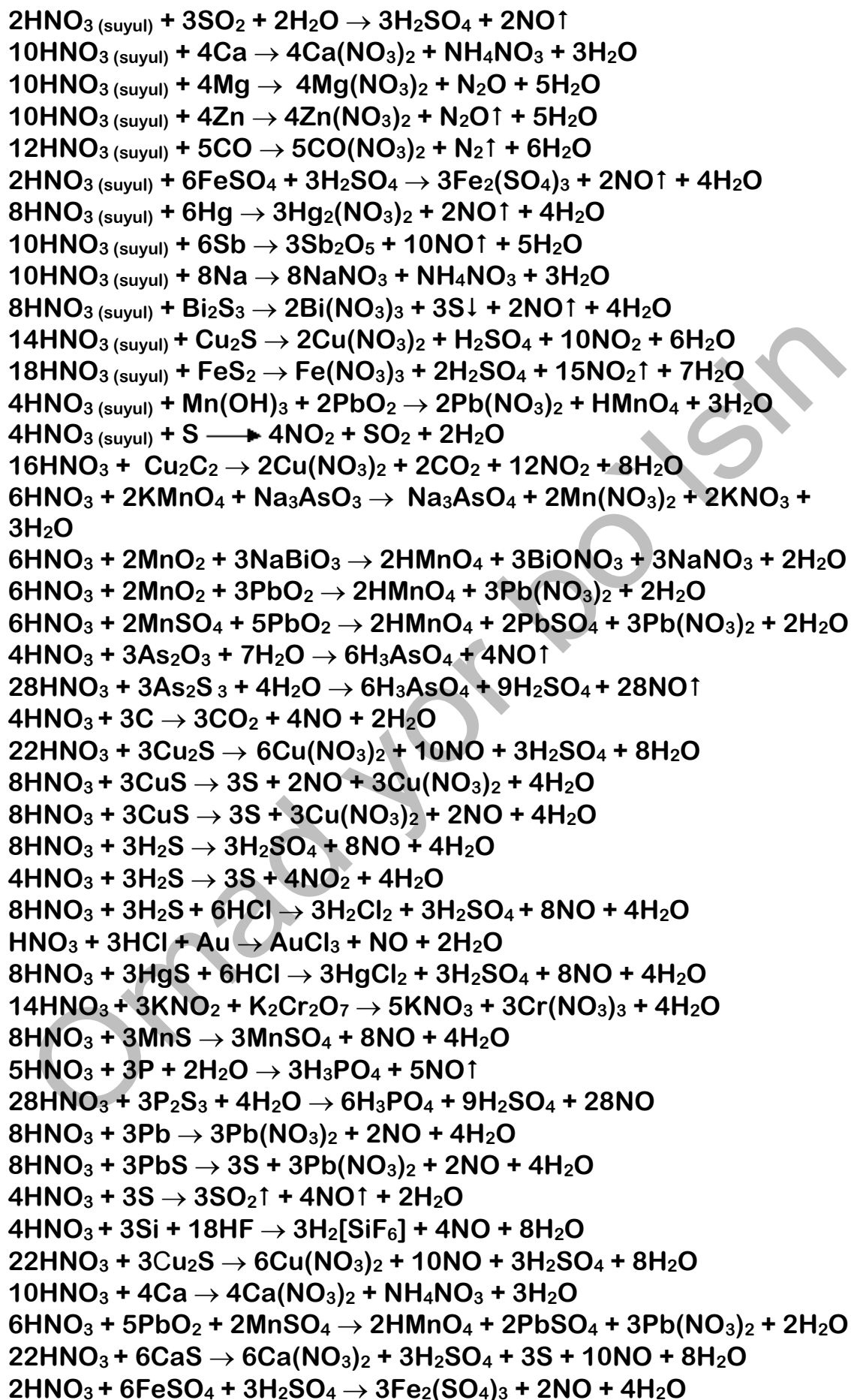


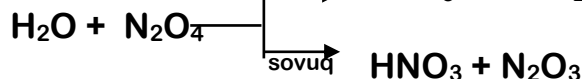
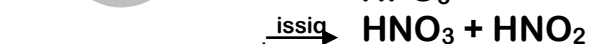
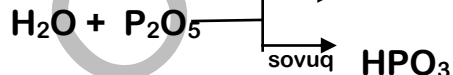
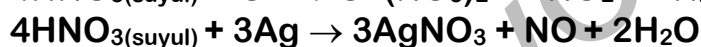
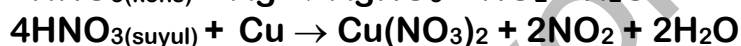
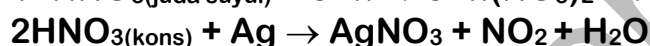
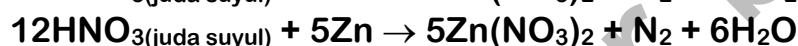
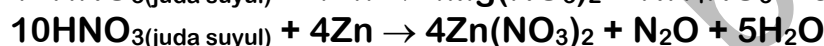
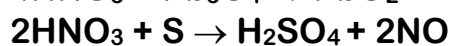
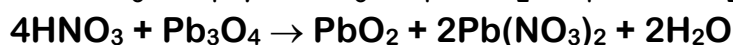
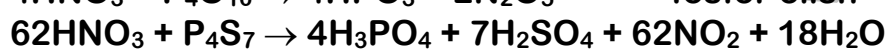
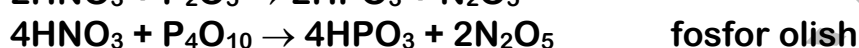
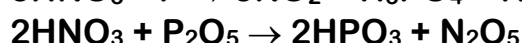
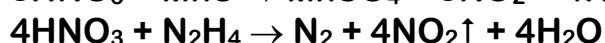
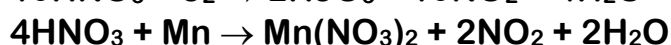
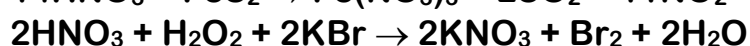
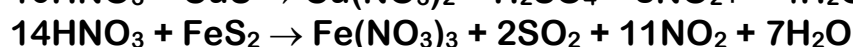
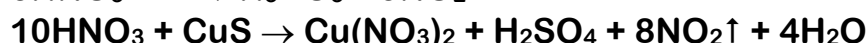
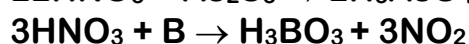
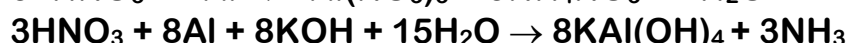




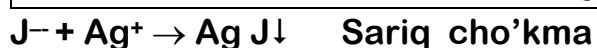




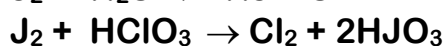
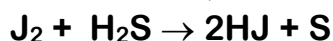
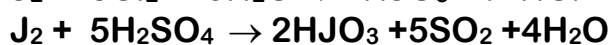
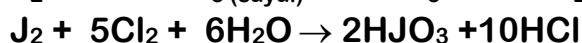
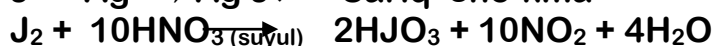


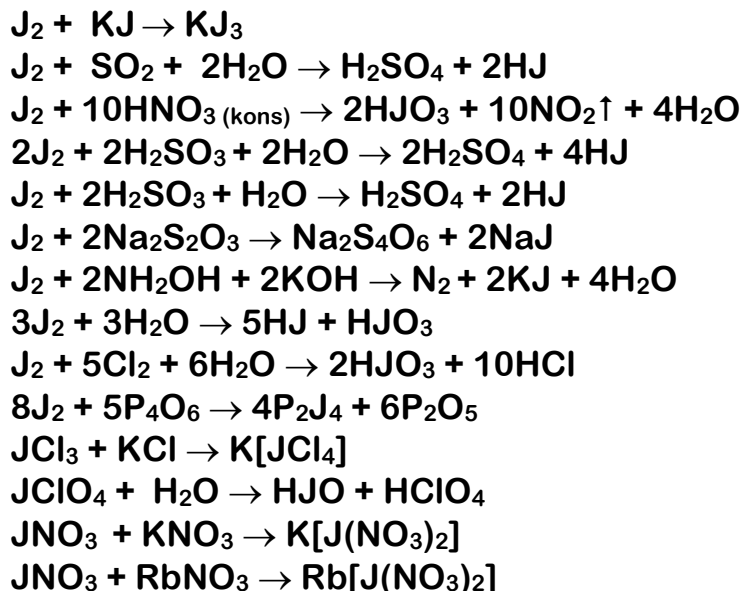


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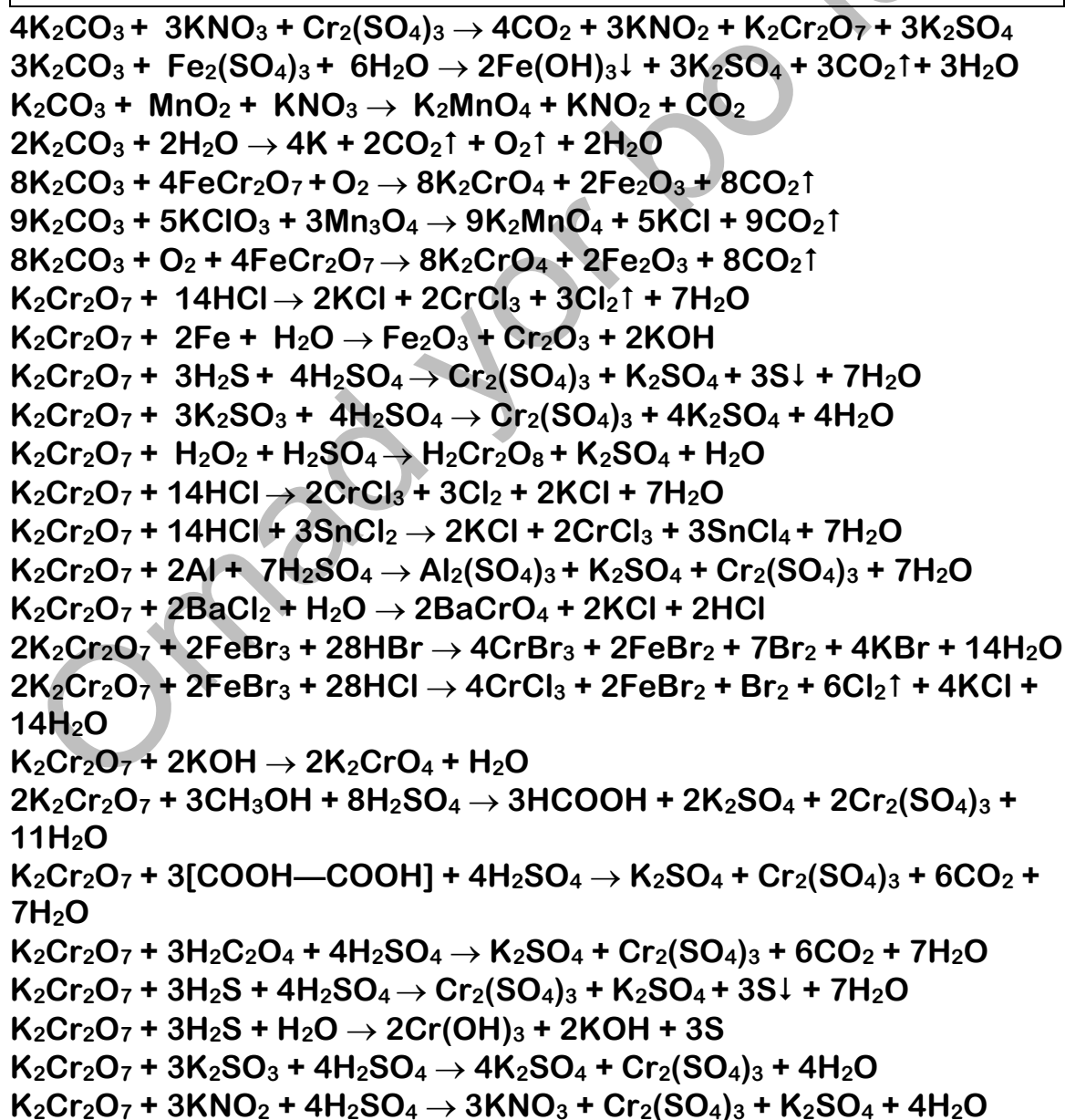


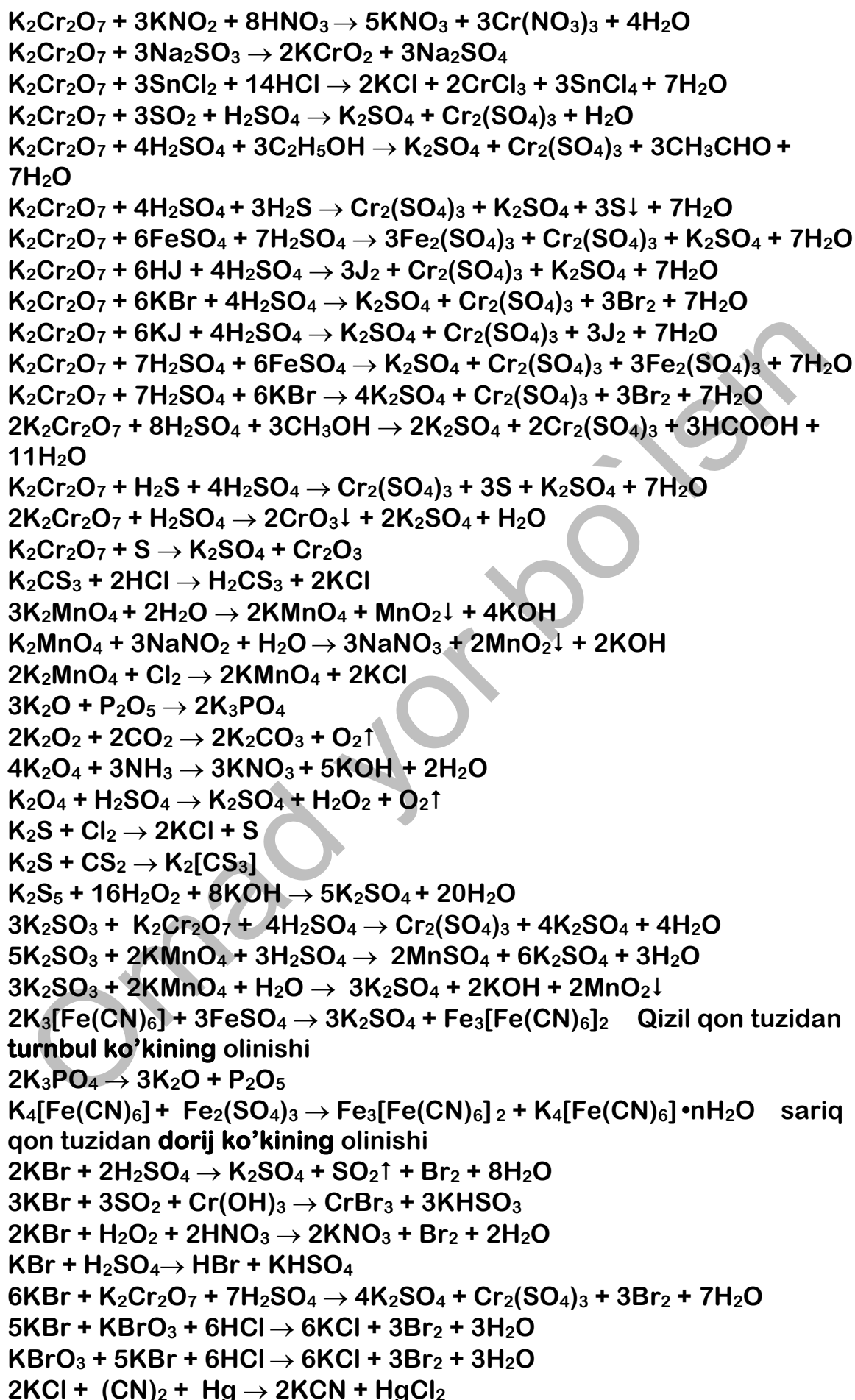
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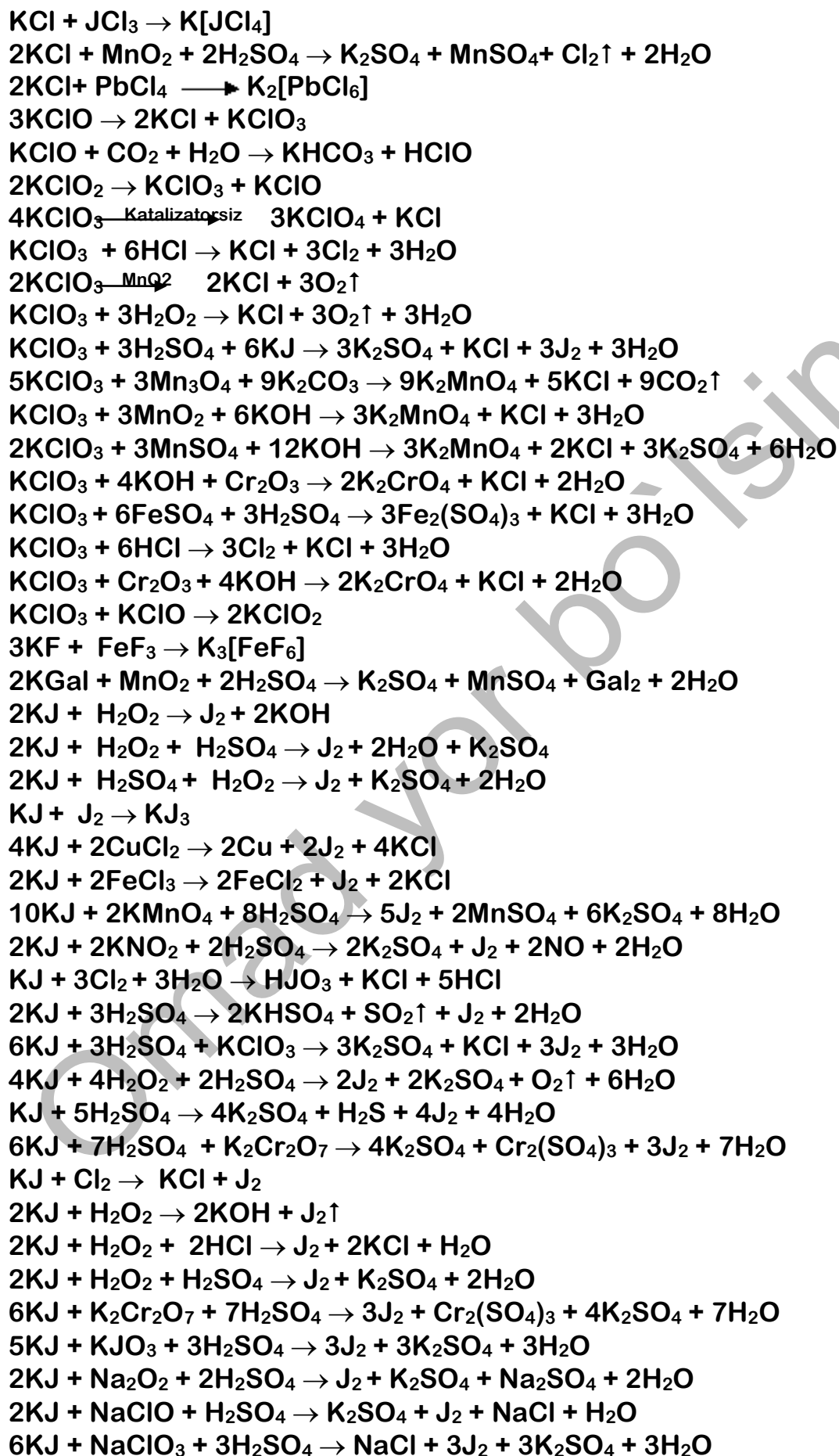


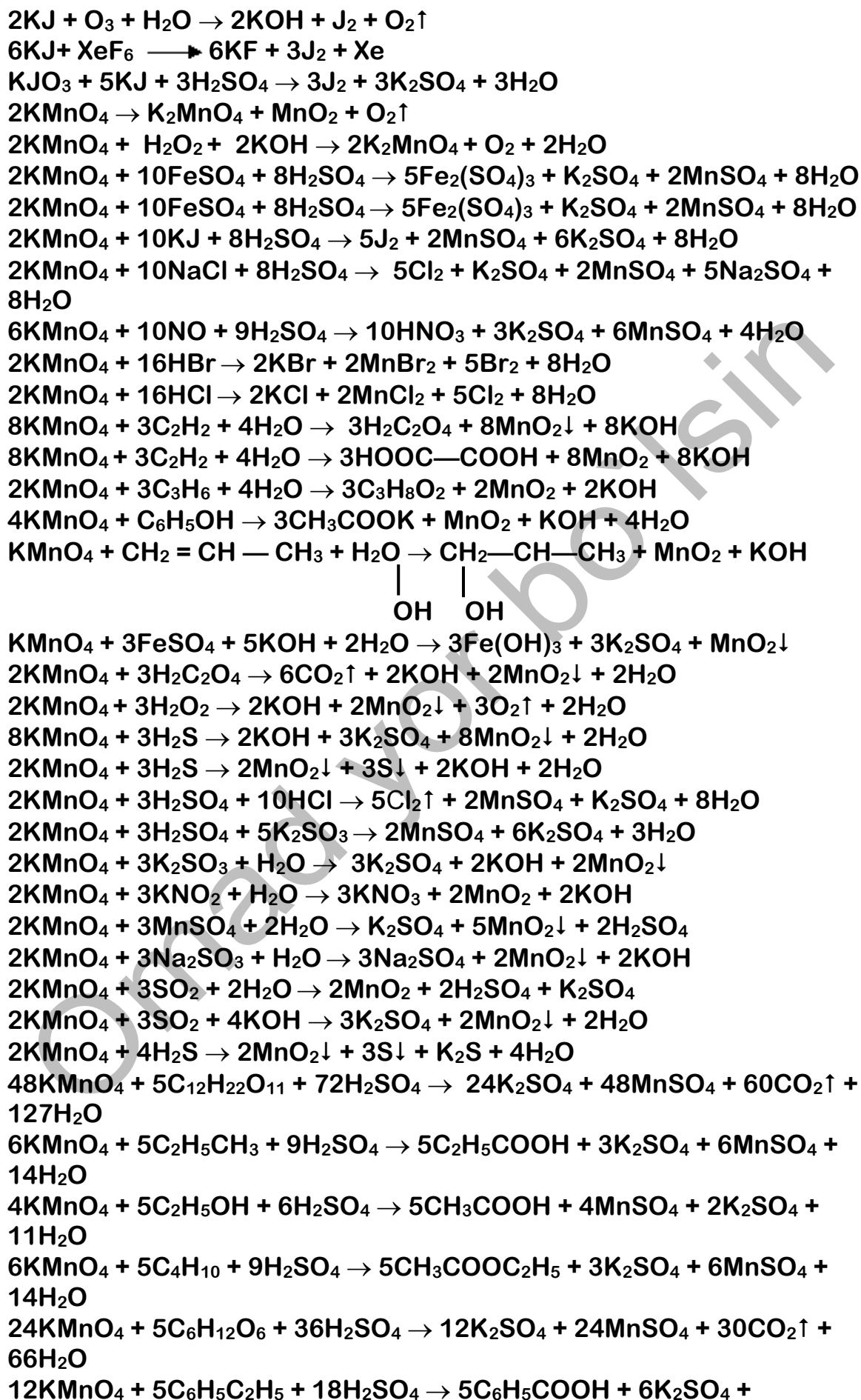


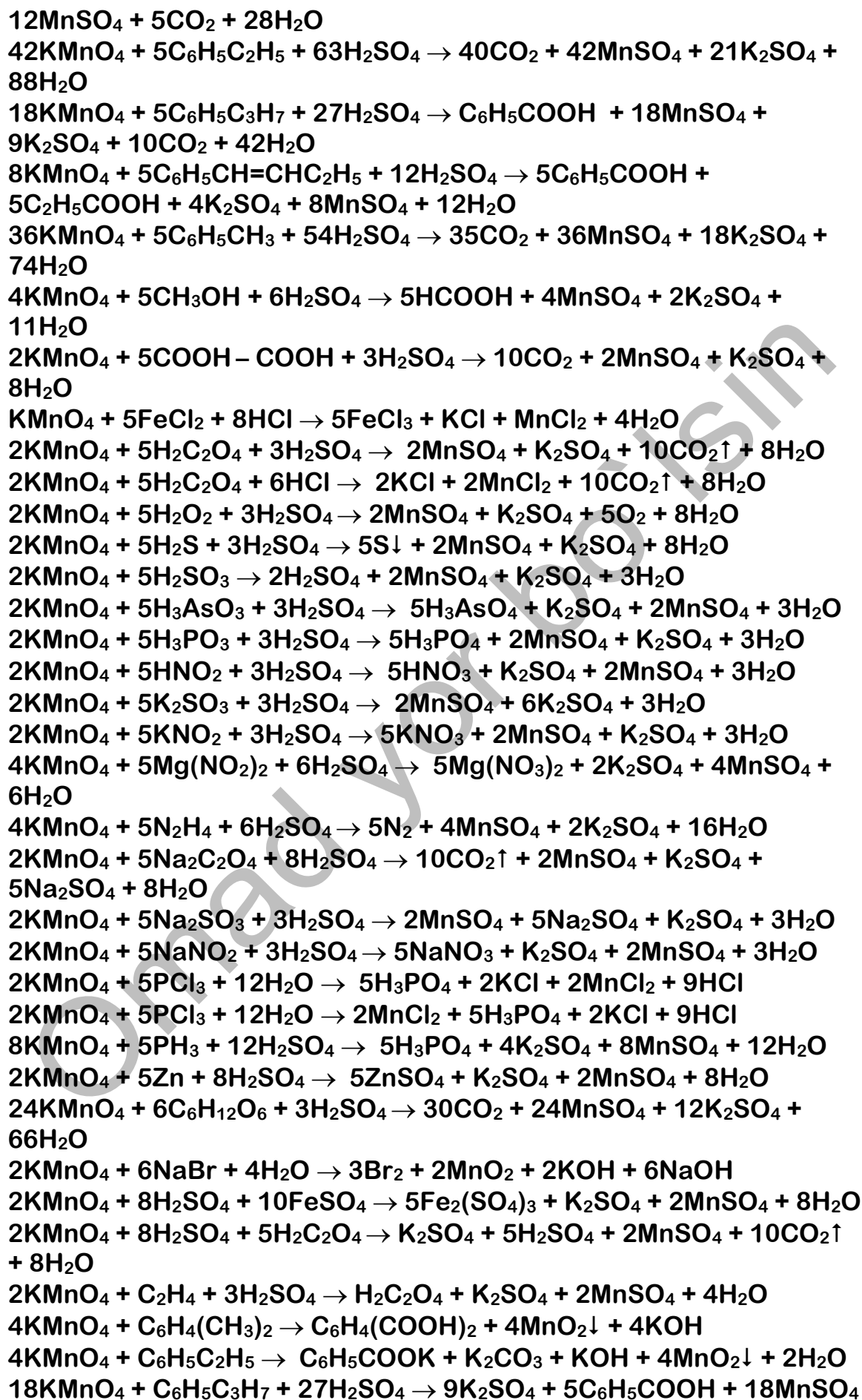
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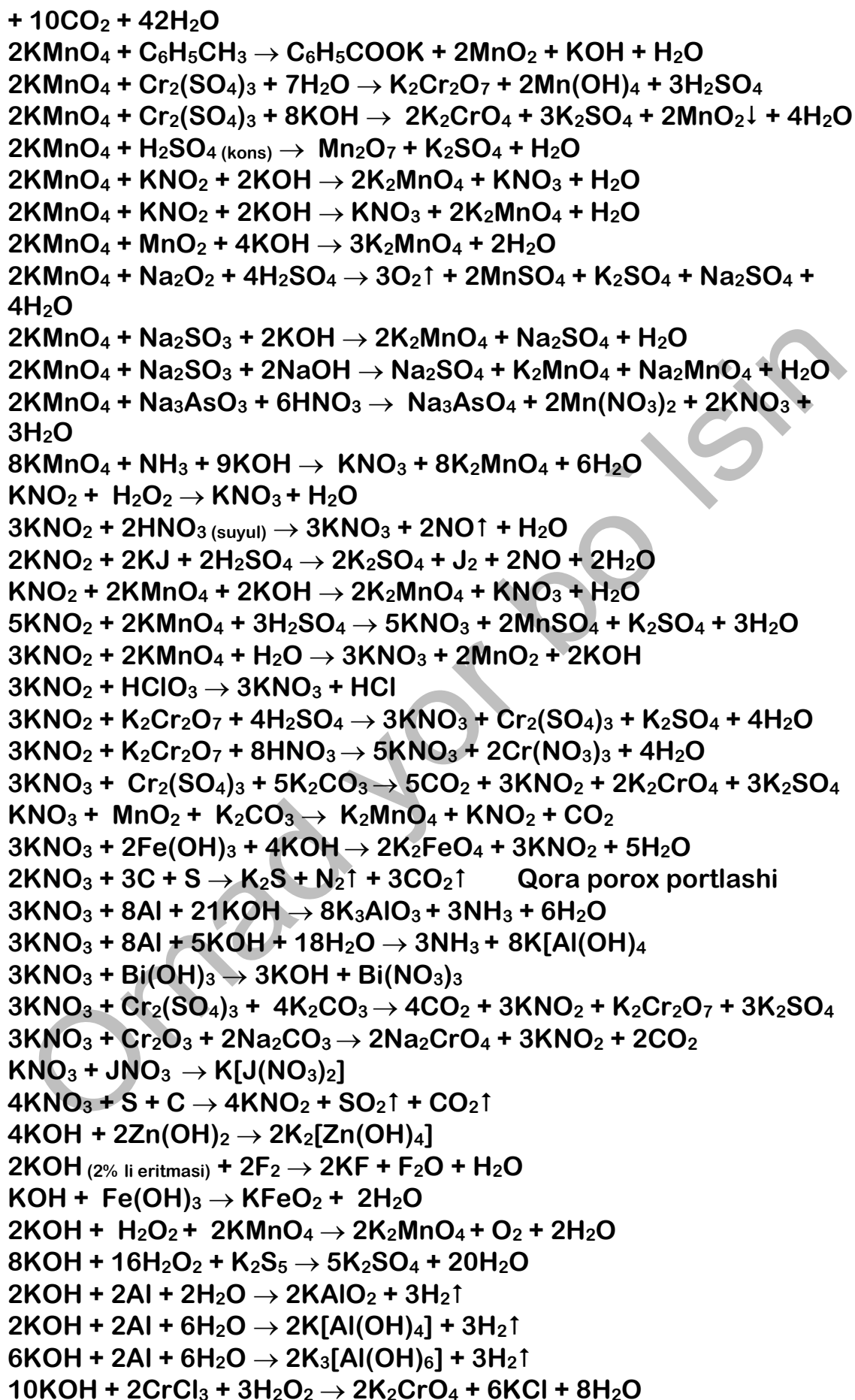


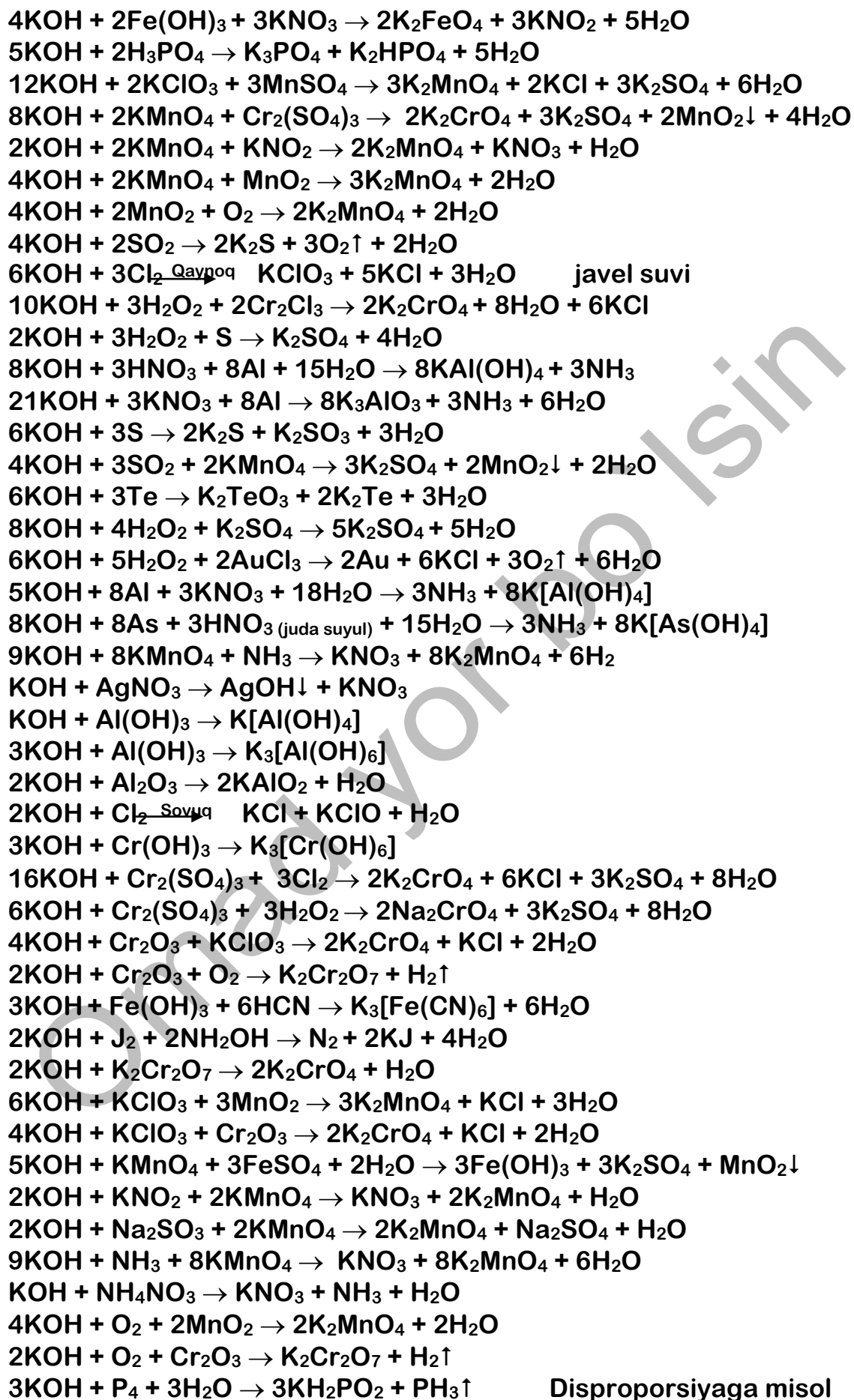


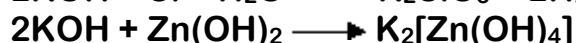
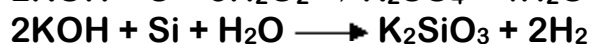
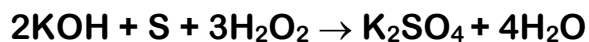




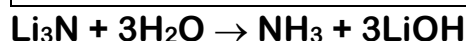




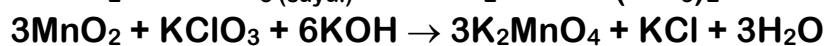
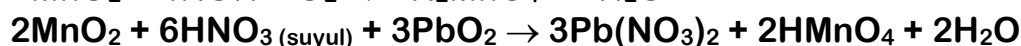
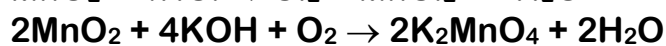
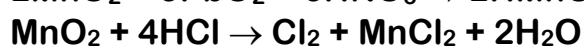
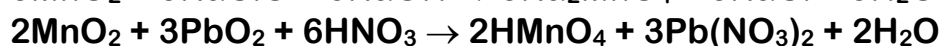
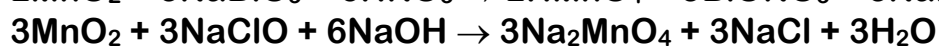
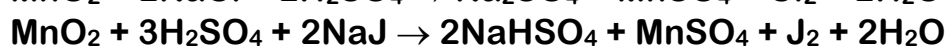
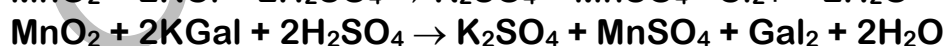
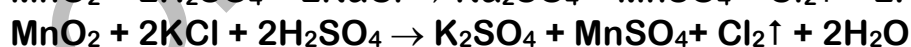
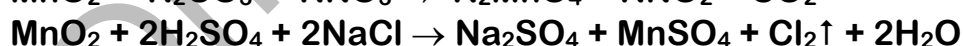
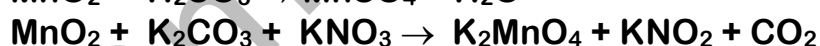
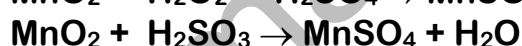
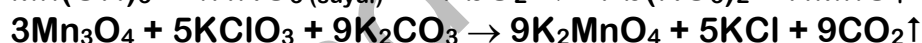
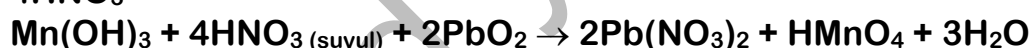
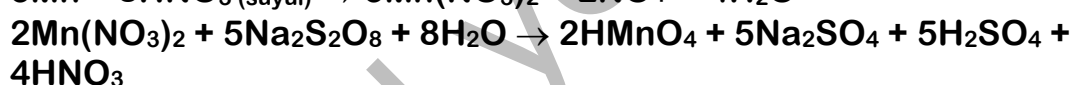
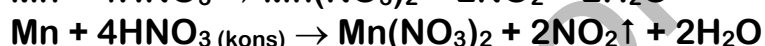
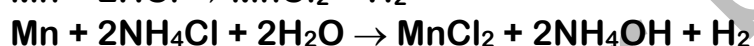
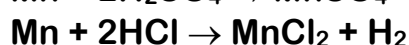
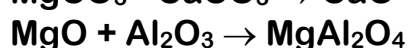
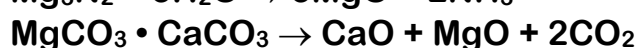
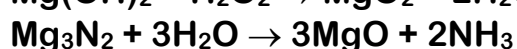
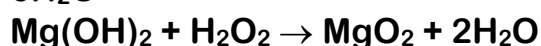
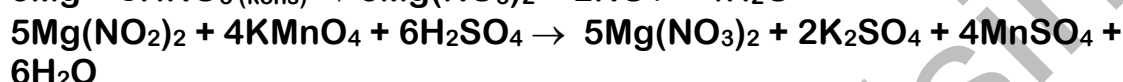
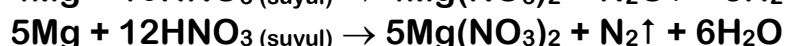
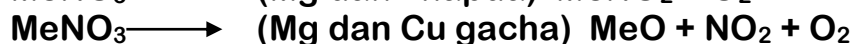
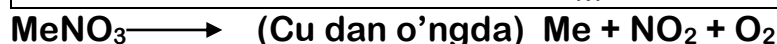


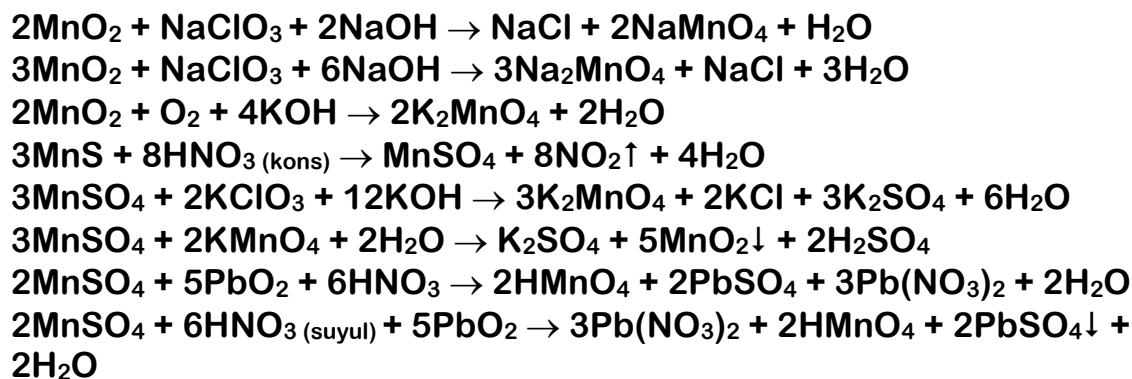


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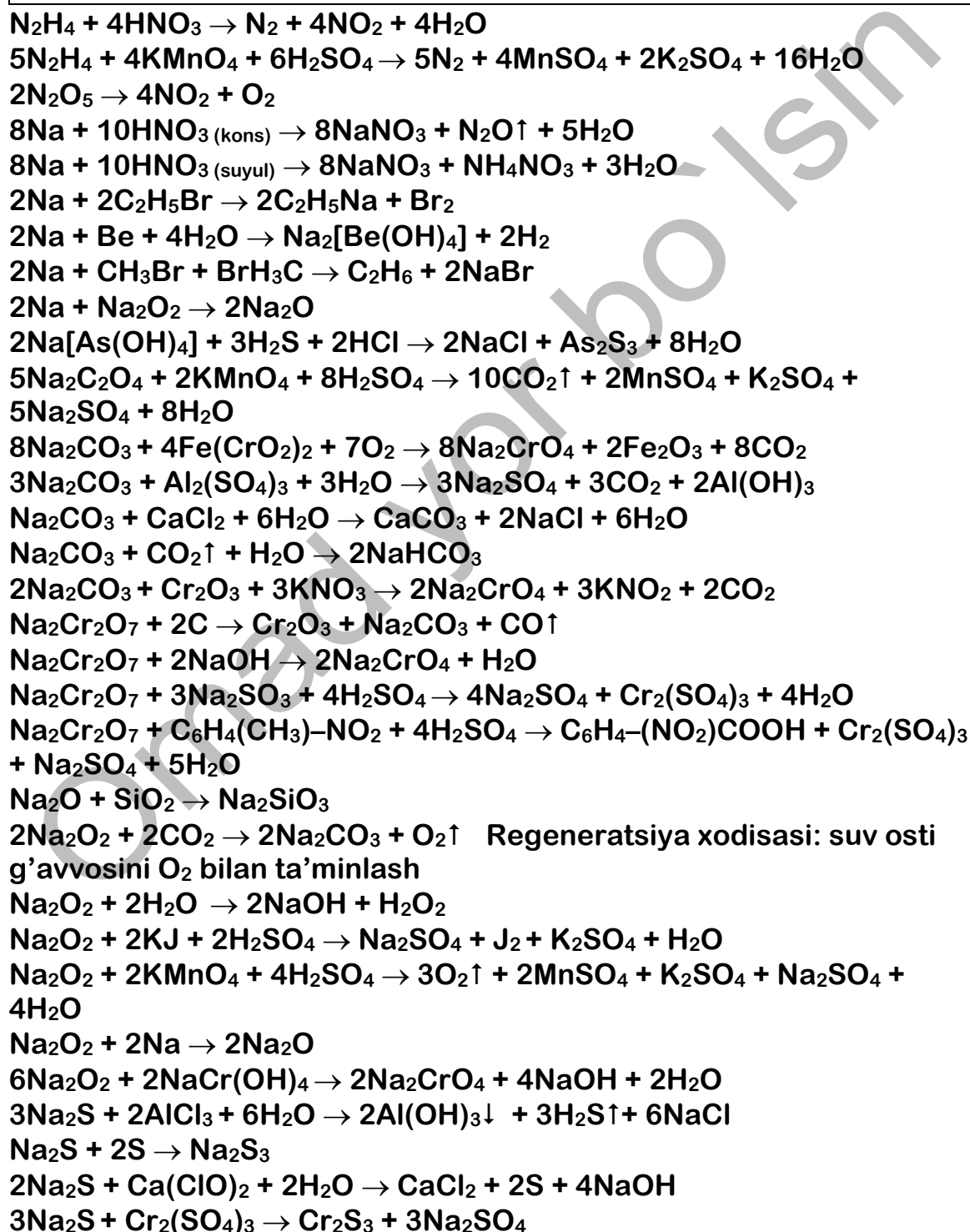


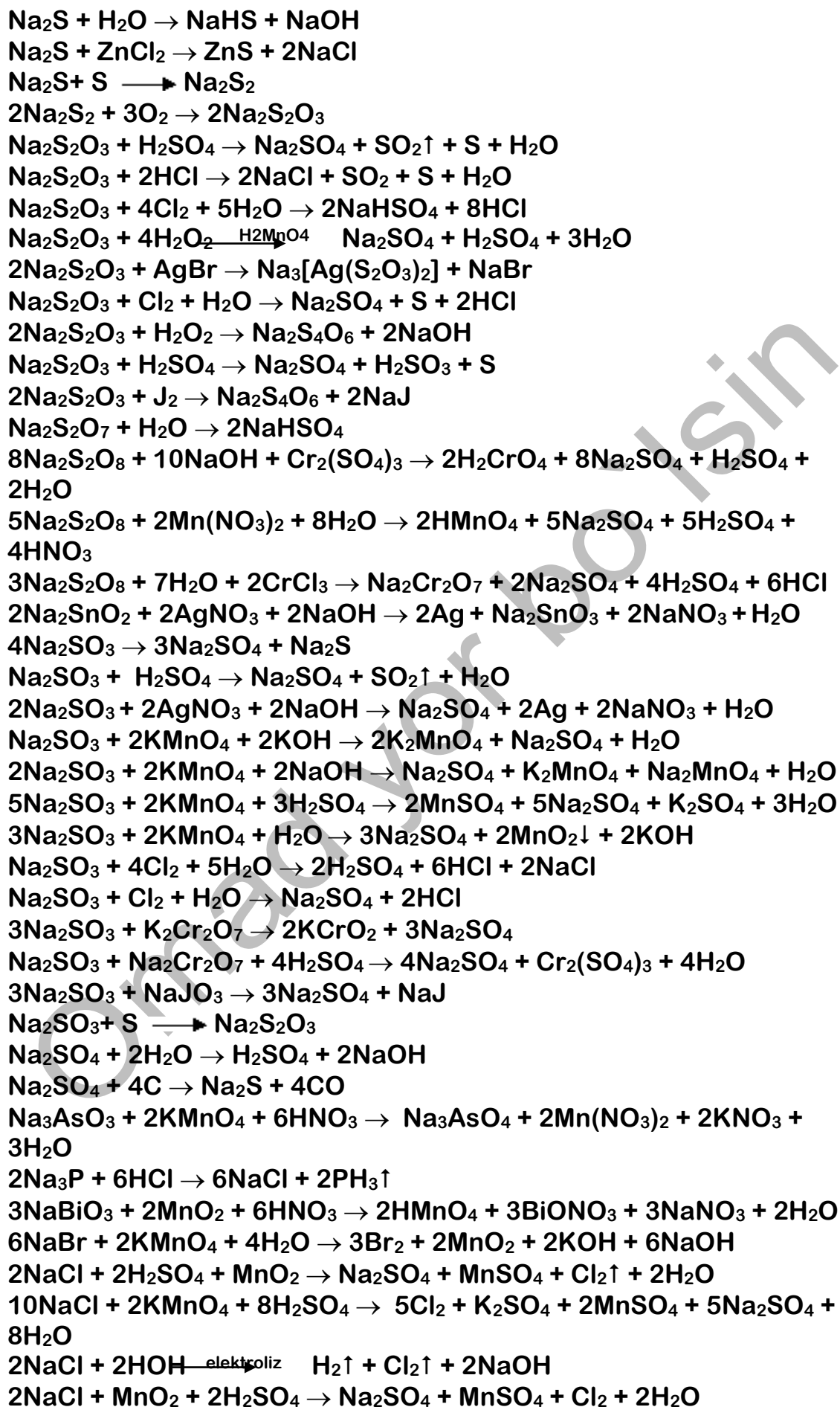
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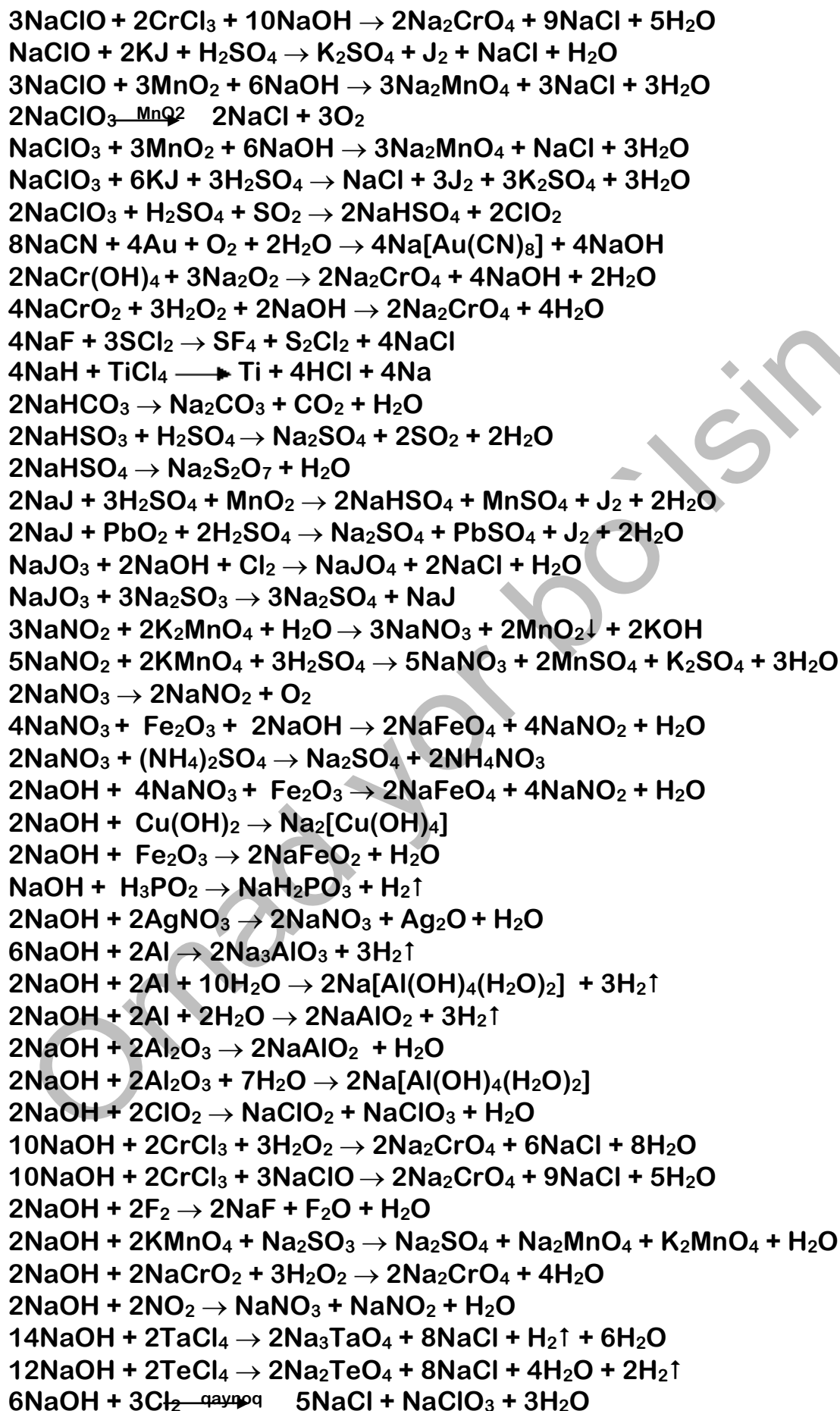


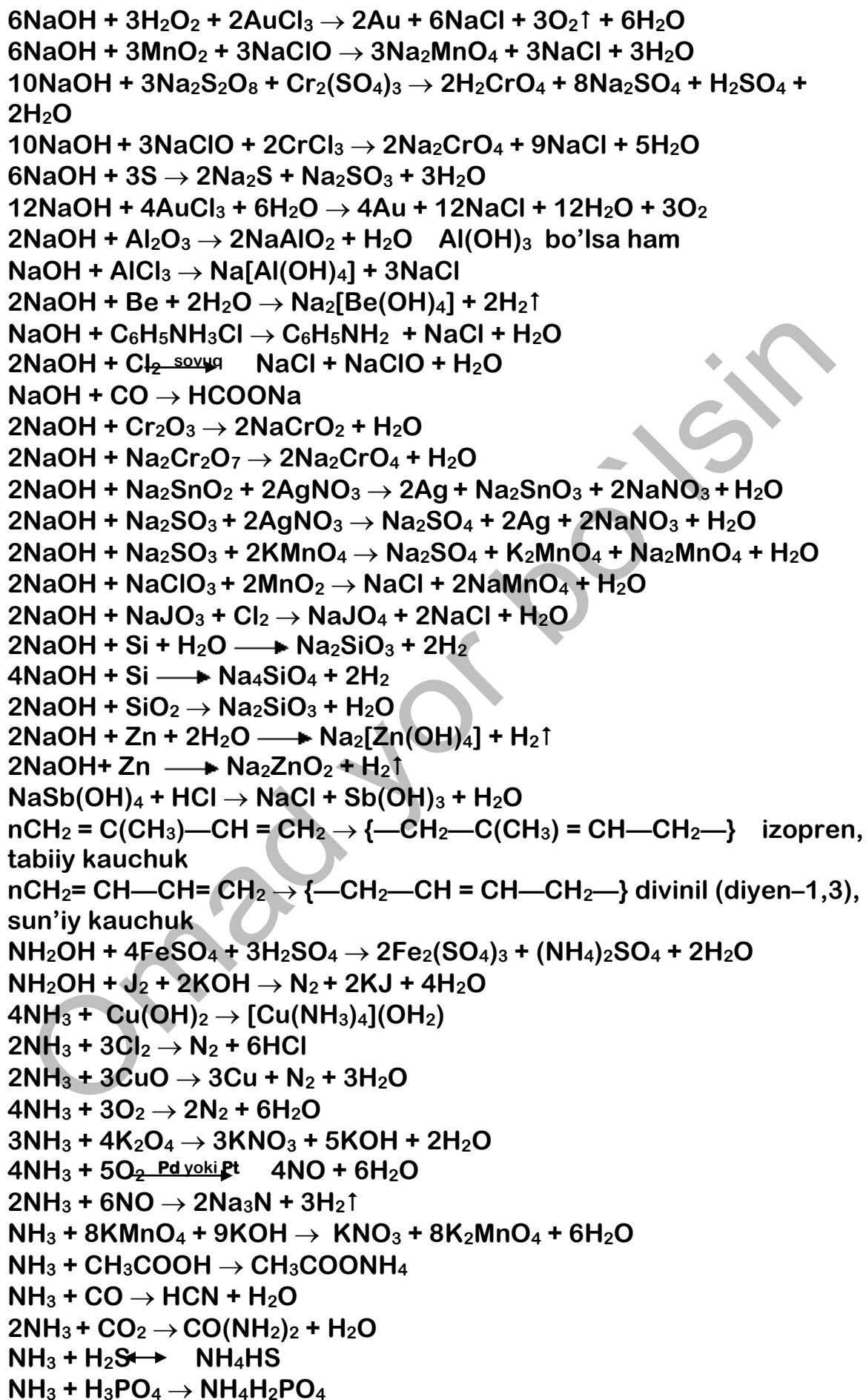


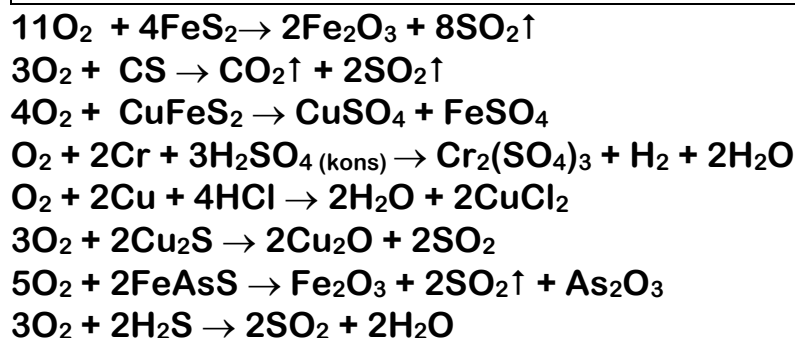
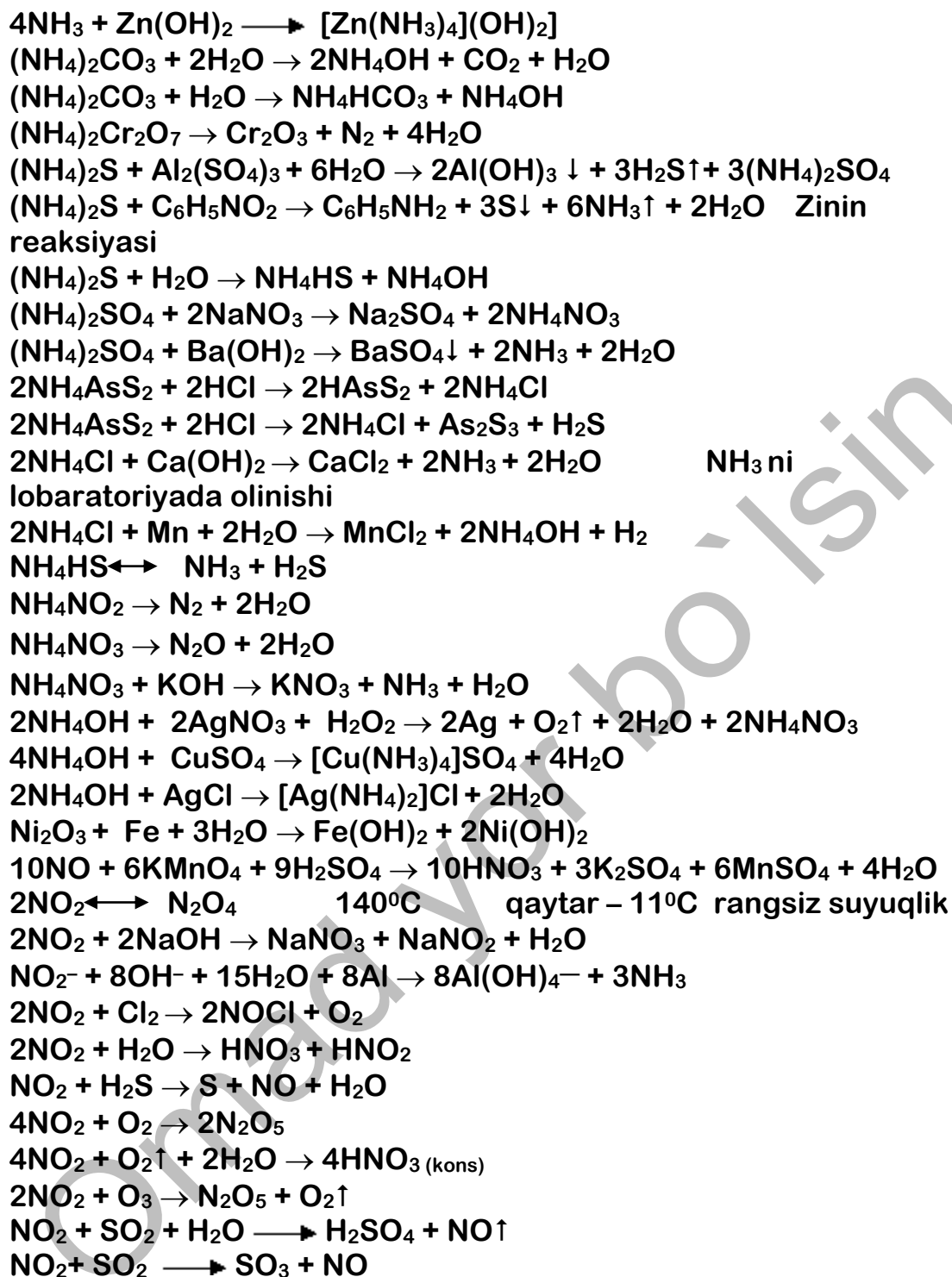
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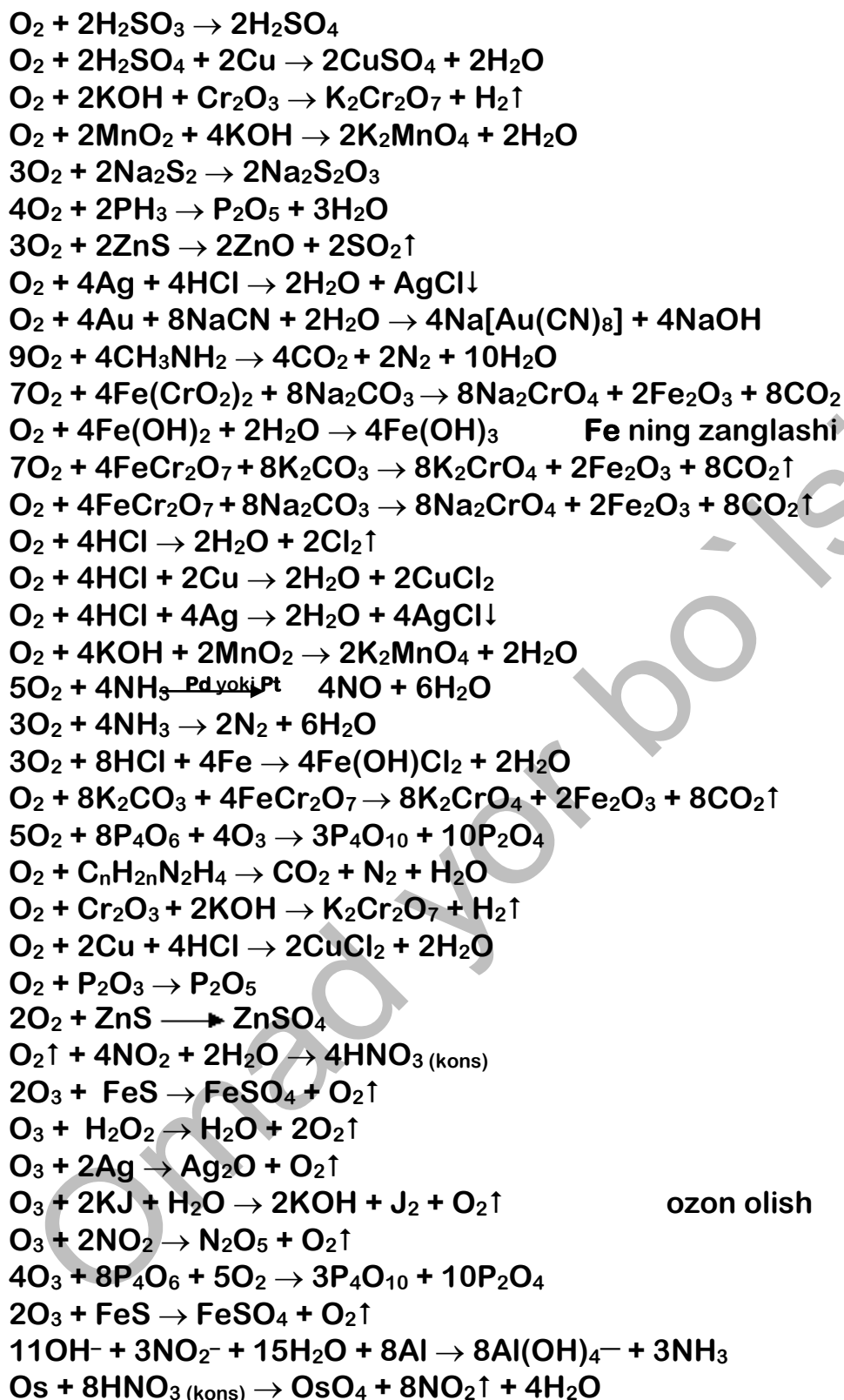




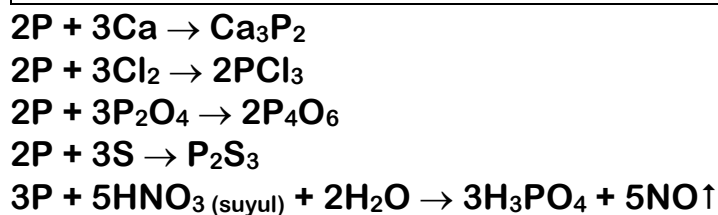


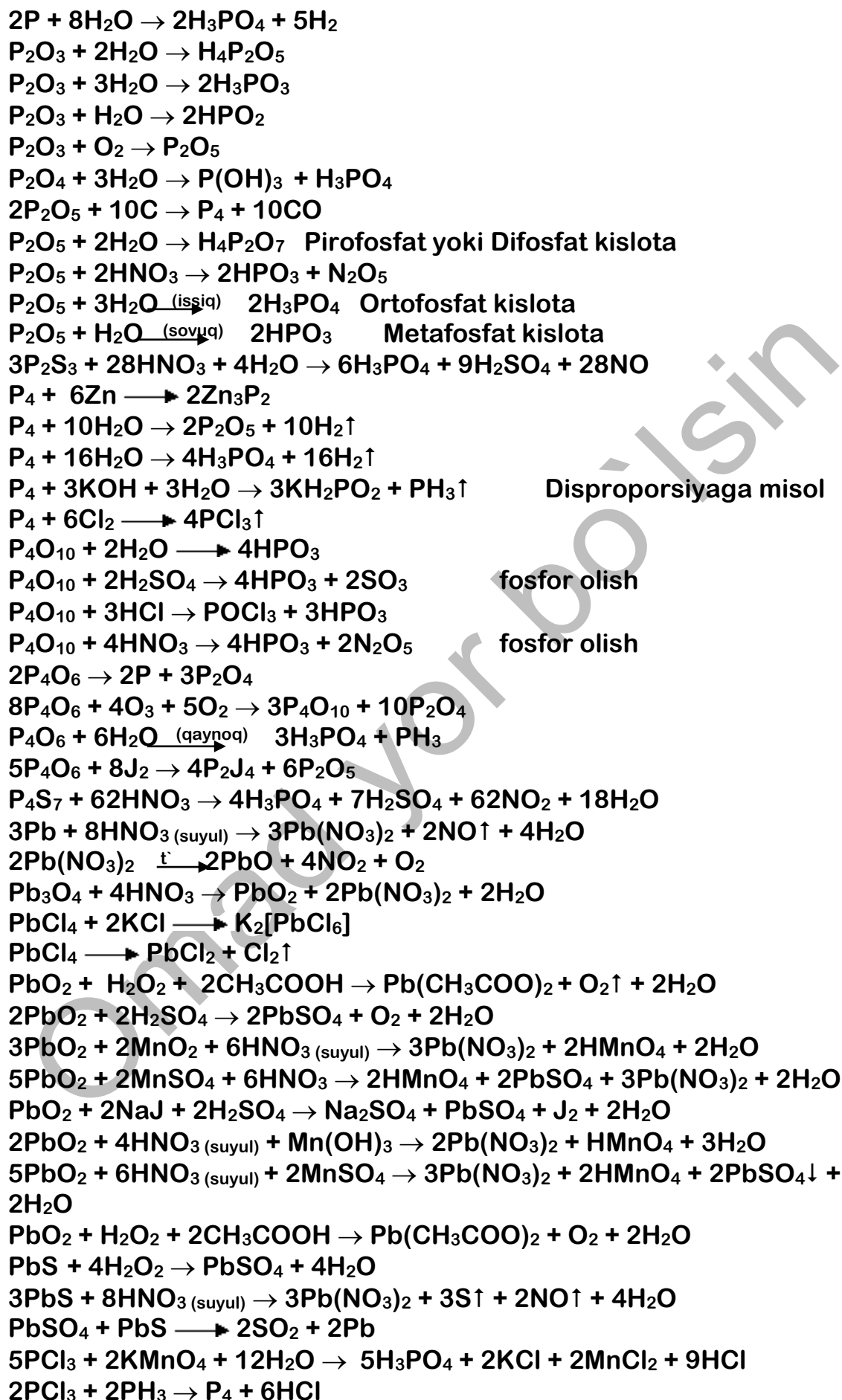


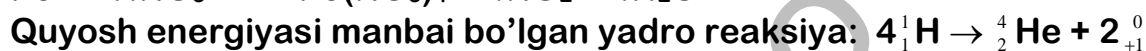
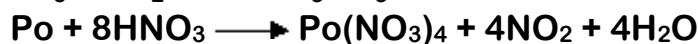
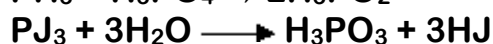
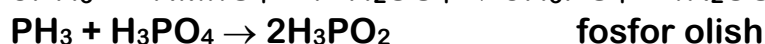
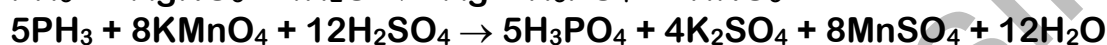
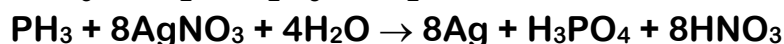
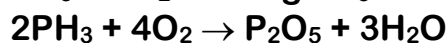
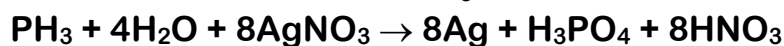
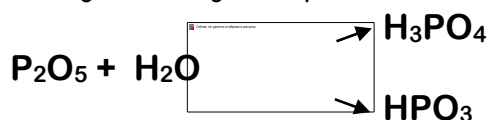
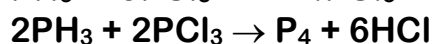
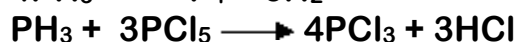
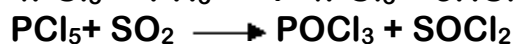
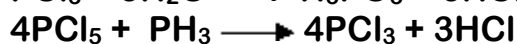




P

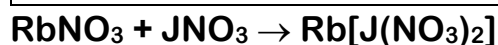




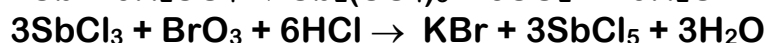
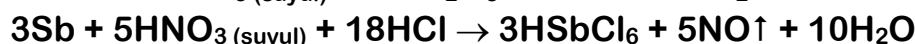
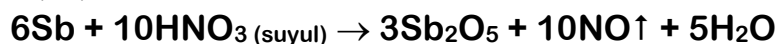
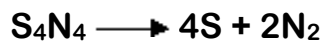
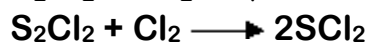
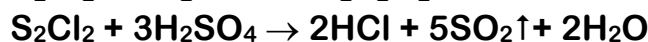
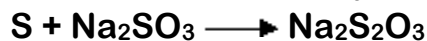
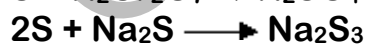
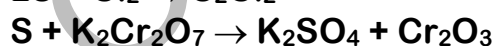
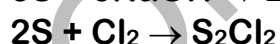
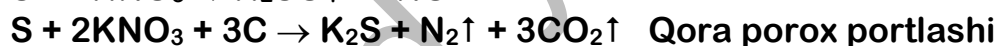
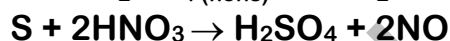
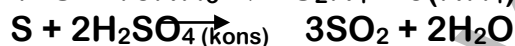
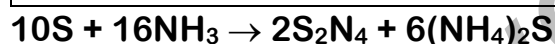


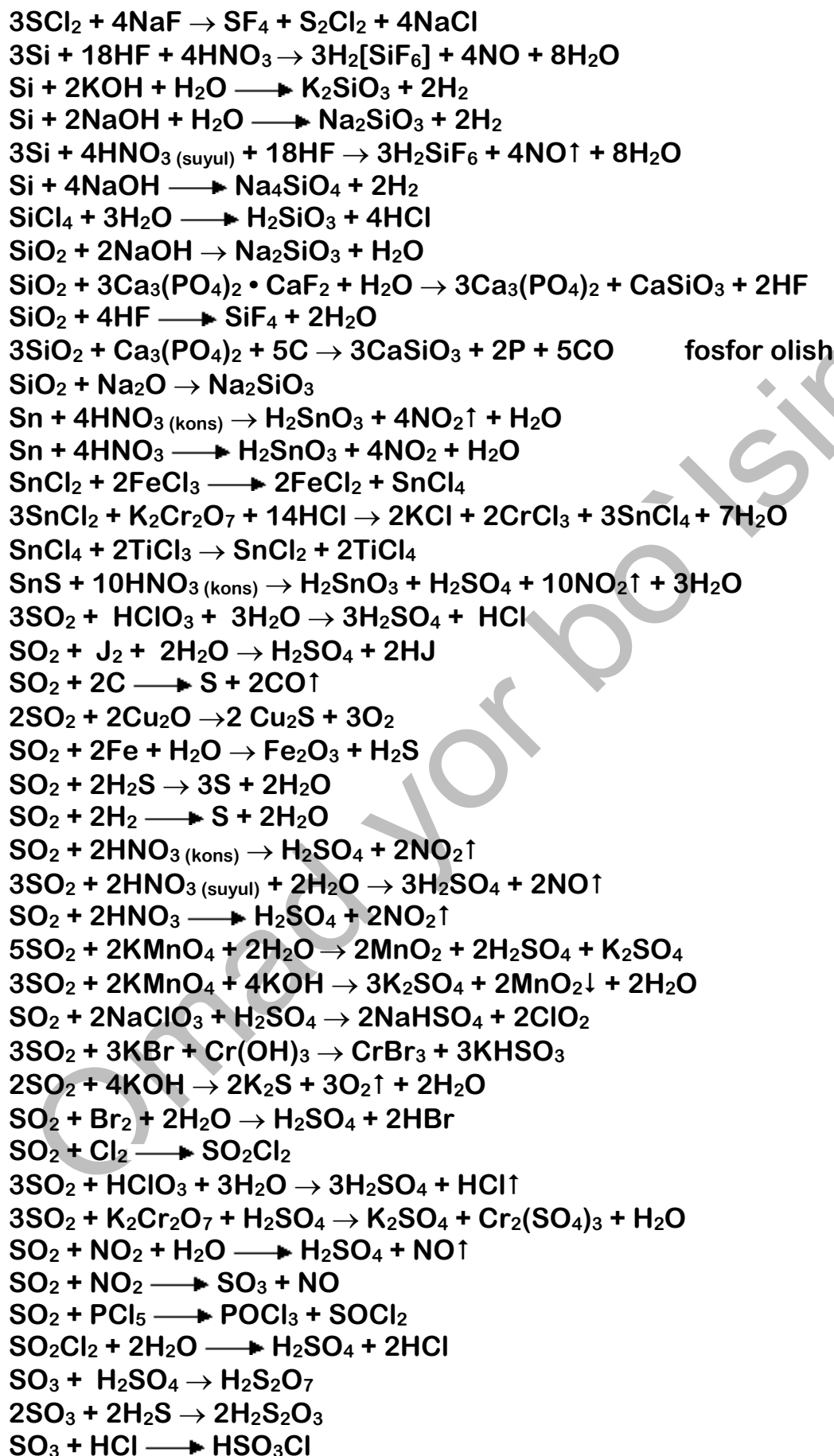
β^+

R

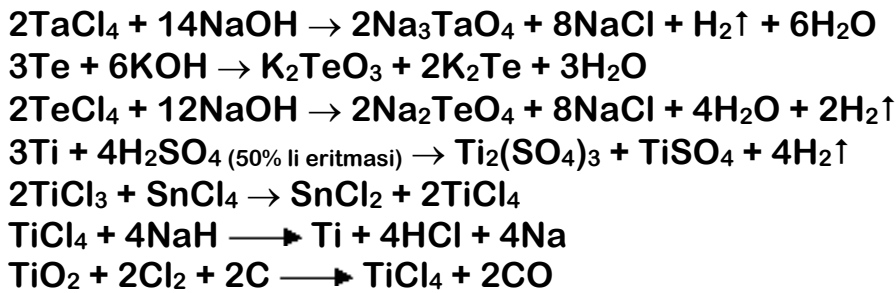


S

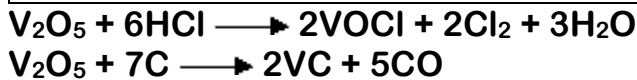




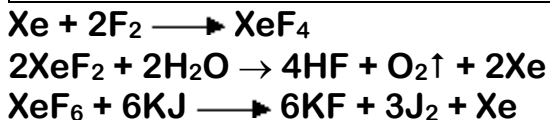
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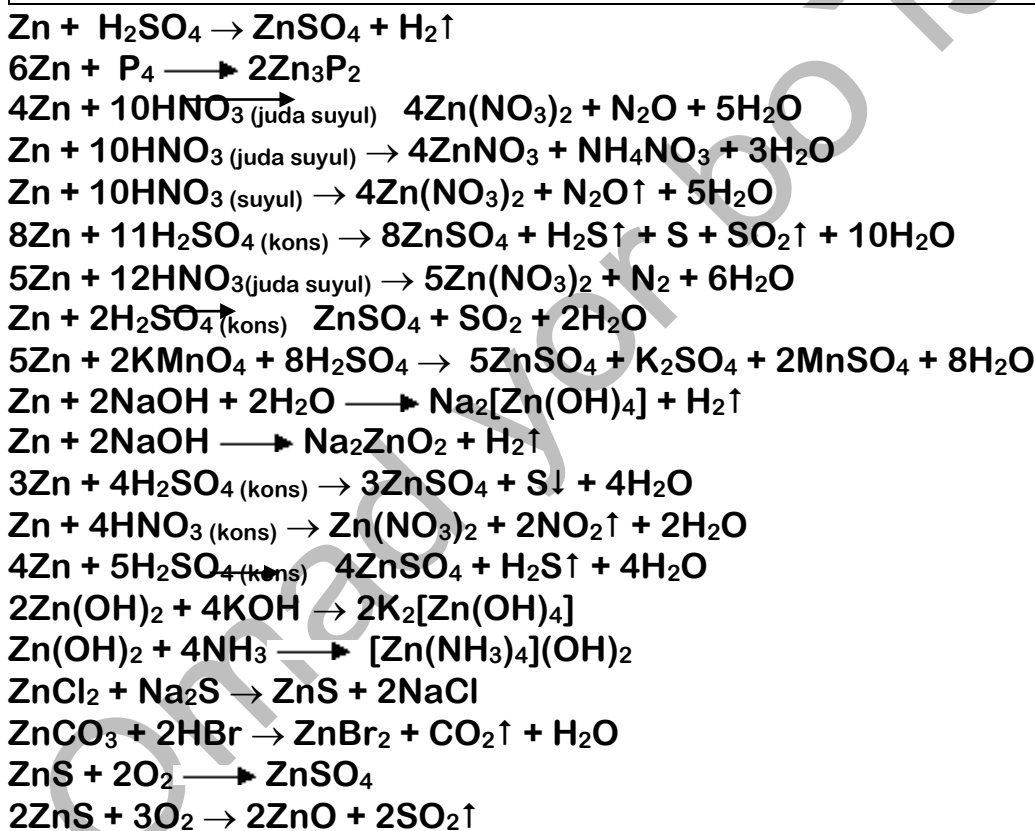
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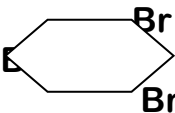


X



Z



Anilin	$\xrightarrow{\text{HCl}}$	$\text{C}_2\text{H}_5\text{NH}_3\text{Cl}$	$\xrightarrow{\text{NaOH}}$	Anilin	$\xrightarrow{\text{Br}_2, \text{H}_2\text{O}}$	2,4,6 Trinitrobrom
Al_2O_3	$\xrightarrow{\text{H}_2\text{O}}$	A	$\xrightarrow{\text{Ar}}$	B	$\xrightarrow{\text{KOH}, \text{H}_2\text{O}}$	C
CaCH_3	$\xrightarrow{\text{H}_2\text{O}}$	X	$\xrightarrow{\text{H}_2}$	Y	$\xrightarrow{[\text{O}]}$	t
Anilin	$\xrightarrow{\text{HCl}}$	X	$\xrightarrow{\text{NaOH}}$	Y	$\xrightarrow{\text{Br}_2}$	Z
						NH_3
Al	$\xrightarrow{\text{O}_2}$	Al_2O_3	$\xrightarrow{\text{HCl}}$	AlCl_3	$\xrightarrow{\text{NaOH}}$	$\text{Al}(\text{OH})_3$
Butanol	$\xrightarrow[\text{H}_2\text{SO}_4]{140^\circ}$	1		Buten	$\xrightarrow[\text{H}_2\text{SO}_4]{\text{H}_2\text{O}}$	Prapanol
						2
						CH_3COOH
						2

Metilatsetat		
Butanol -1	$\xrightarrow{H_2SO_4, 140^\circ}$	Buten -1 $\rightarrow H_2O + H_2SO_4$ Butanol -2 CH_3COOH
Izobutilatsetat		
Butan	$\xrightarrow{Br_2, h\nu}$ A $\xrightarrow{KOH + SPIRT}$ B (POLIMER)	X $[-CH(CH_3)CH(CH_3)-]_n$
Buten -2	$\xrightarrow{Br_2}$ A $\xrightarrow{t^+C (KOH + SPIRT)}$	X Butin -2
Boksid	\rightarrow Eritma	III Cho'kma III Al_2O_3 I CO_2 oqish; II qizg'ish; III (KOH)NaOH H^+O^C
Izobutan	\xrightarrow{HBr}	2 Metil 1- Br Propan Na 2,5 Dimetilgeksan
Izobutil Spirt	\xrightarrow{HBr}	2 Metil 1- Br Propan Na 2,5 Dimetilgeptan
Izobutan	$\xrightarrow{Br_2, h\nu}$ A $\xrightarrow{KOH + SPIRT}$ B (POLIMER)	X $[-C(CH_3)_2-CH_2-]_n$
Izopentan	$\xrightarrow{Br_2, h\nu}$ X $\xrightarrow{KOH + SPIRT}$ Y $\xrightarrow{PIROLIZ}$ Z	Z $[-C(CH_3)_2C(CH_3)_2-]_n$
K $\xrightarrow{O_2}$	$\rightarrow K_2O \xrightarrow{H_2O} KOH \xrightarrow{CuCl_2} Cu(OH)_2 \xrightarrow{t^+} CuO + H_2O$	
K $\xrightarrow{O_2}$	$\rightarrow K_2O \xrightarrow{H_2O} KOH \xrightarrow{SO_2} KHSO_3 \rightarrow KOH \xrightarrow{K_2CO_3} HBr \xrightarrow{KCl}$	
Kraxmat	$\xrightarrow{H_2O}$	Propan kislota + Sirka anhidrid $CH_4; C_2H_6$
K	$\xrightarrow{H_2O} KOH \xrightarrow{CO_2} K_2CO_3 \xrightarrow{BaCl_2} KCl \xrightarrow{AgNO_3} KNO_3$	
Kraxmat	$\xrightarrow{H_2O}$ X ₁ $\xrightarrow{Bijg'ish}$ X ₂ $\xrightarrow{t^+} 140^\circ C$	A Dimetilefir
K $\xrightarrow{O_2}$	A $\xrightarrow{H_2O}$ B $\xrightarrow{CuOH_2}$ C $\xrightarrow{t^+}$	$CuOH + H_2O$
Propanol -1		Propanol \rightarrow 2 Xlorpropan
Propil spirt	$\xrightarrow{[O]}$ Propanol $\xrightarrow{Ag_2O}$	Propan kislota $CH_3-CH_2-C(=O)-OH$
Propil benzol	$\xrightarrow{KMnO_4} C_6H_5COOH \xrightarrow{C_6H_5COOH} C_6H_5COOC_2H_5$	
Pentanol -1	$\xrightarrow{H_2SO_4, 130^\circ}$ M ₁ $\xrightarrow{2HBr}$ M ₂ $\xrightarrow{3Na}$ M ₃	M ₃ 1,5 Dimetilgeksan
Propin -2	$\xrightarrow{H_2O}$ X ₁ $\xrightarrow{H_2O}$ X ₂ \rightarrow	A Atseton
Zn	$\xrightarrow{+H_2SO_4} ZnSO_4 \xrightarrow{+NaOH} Zn(OH)_2 + NaOH \xrightarrow{Cu(OH)_2} Na_2ZnO_2$	
(CH ₃) ₂ CH-CH ₂ -J	\xrightarrow{KOH}	2 Metilpropilen \xrightarrow{HBr} 2 Br 2 Metilpropan
C ₂ H ₆	$\xrightarrow{Br_2}$ CH ₂ -CH ₂ Br $\xrightarrow{KOH, H_2O}$	CH ₃ CH ₂ OH Etilatsetat
CH ₄	$\xrightarrow{t^+} C_2H_4 \xrightarrow{H_2O} CH_3-C(=O)-H$ [O] $CH_3-C(=O)-OH$ Br ₂ $CH_3(CH_2)COOH$	NH ₃ CH ₃ COOH
C ₆ H ₆	$\xrightarrow{Cl_2, h\nu} C_6H_5Cl \xrightarrow{KOH} C_2H_4 \xrightarrow{KOH, H_2SO_4} C_2H_5OH \xrightarrow{Zn, NaOH} -CH_2=CH_2$	H ₂ O Hg CH ₃ -C-H
C ₂ H ₆	$\xrightarrow{Br_2} C_2H_5Br \xrightarrow{NaOH} C_2H_5OH \xrightarrow{H_2O, H_2SO_4} (C_2H_5)_2O$	
CH ₃ -CH ₃	$\xrightarrow{Br_2} CHBr-CHBr \xrightarrow{+H_2O, +H_2O} CH_3-CH_2OH$ [O] $CH_3-C(=O)-H + H_2O$ Ag ₂ O $CH_3-CH_2-C(=O)-OH$	
C ₃ H ₆ + Cl ₂	$\xrightarrow{500-6500^\circ} -H$ 3 Xlorpenten B Geksadiyen 1,5	
C _n H _{2n+2}	\rightarrow X ₁ $\rightarrow CH\equiv CH \xrightarrow{H_2, H_2O} X_2 \rightarrow$ Atsetildegid X ₃ $\rightarrow C_2H_5OH$ [O] X ₄ CH ₃ OH X ₅ \rightarrow Etan kislota	
C ₂ H ₄ O	$\xrightarrow{H, Ni} X_1 \xrightarrow{H_2SO_4 (suyul), 140^\circ C} X_2 \xrightarrow{HBr} X_3 \xrightarrow{Na} X_4 \xrightarrow{Pt (katalizator)} X_5 \rightarrow$	$CH_2=CH-CH=CH_2$
CH ₃ CH ₂ COOH	$\xrightarrow{Br_2} \dots \xrightarrow{NaOH, H_2O} \dots \xrightarrow{CH_2OH-H} X \rightarrow$	Sut kislota metil efiri
CH ₃ CH ₂ COOH	$\xrightarrow{Br_2} \dots \xrightarrow{NaOH} \dots \xrightarrow{H_2O} X \rightarrow$	Sut kislota

$\text{CH}_3\text{CH}_2\text{COOH} \xrightarrow{\text{Br}_2} \dots \xrightarrow{\text{NaOH}} \dots \xrightarrow{\text{HBr}} \dots \xrightarrow{\text{NH}_3} \text{X} \rightarrow \text{Anilin}$
$\text{CH}_3\text{COONa} \xrightarrow{\text{NaOH}} \text{X}_1 \xrightarrow{1500^\circ\text{C}} \text{X}_2 \xrightarrow{\text{Ti (katalizator)}} \text{X}_3 \xrightarrow{\text{CH}_3, \text{AlCl}_3} \text{X}_4 \xrightarrow{\text{HNO}_3} \text{X}_5 \rightarrow \text{Trinitrotoluol}$
$\text{CO} + 2\text{H}_2 \xrightarrow{\text{Pb (katalizator)}} \text{X}_1 \xrightarrow{\text{HCl}} \text{X}_2 \xrightarrow{\text{Ni}} \text{X}_3 \xrightarrow{\text{Cl}_2} \text{X}_4 \xrightarrow{\text{NaOH, H}_2\text{O}} \text{X}_5 \rightarrow \text{Etanol}$
$\text{C}_2\text{H}_4 \xrightarrow{\text{HCl}} \text{X} \rightarrow \text{Xloretan} \xrightarrow{\text{H}_2\text{O, KOH}} \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{H}_2\text{SO}_4} \text{Y} \xrightarrow{\text{H}_2\text{O}} \text{Z} \rightarrow \text{Etanol}$
$\text{CH}_4 \xrightarrow{\text{Br}_2} \text{X}_1 \xrightarrow{\text{Na}} \text{X}_2 \xrightarrow{\text{Br}_2} \text{X}_3 \xrightarrow{\text{NaOH}} \text{H}_2 \xrightarrow{\text{X}_4} \text{CuO} \rightarrow \text{A} \rightarrow \text{CH}_3\text{—}\overset{\text{O}}{\parallel}\text{C—H}$
$\text{CH}_4 \xrightarrow{\text{t}} \text{X}_1 \xrightarrow{\text{H}_2\text{O}} \text{X}_2 \xrightarrow{[\text{O}]} \text{X}_3 \xrightarrow{\text{Cl}_2} \text{X}_4 \xrightarrow{\text{NH}_3} \text{A} \rightarrow \text{Dirol}$
$\text{C}_2\text{H}_2 \xrightarrow{\text{H}_2\text{O}} \text{CH}_3\text{COH} \xrightarrow{\text{H}_2} \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{HBr}} \text{C}_2\text{H}_7\text{Br}$
$(\text{CH}_3)_2\text{CHCH}_3 + \text{Zn} \xrightarrow{\text{KOH, P}} \text{X} \xrightarrow{\text{HBr}} \text{Y} \rightarrow \text{Uchlamchi butil amid}$
C_3H_8 x 2,3 Dimetil buten reagent 3)Br 4)hv 5)(NO)
$\text{C}_2\text{H}_2 \xrightarrow{\text{H}_2\text{O, Hg}} \text{A} \xrightarrow{\text{H}_2} \text{B} \xrightarrow{\text{Na}} \text{C} \rightarrow \text{Na etilat}$
$\text{C—C}_2\text{H}_2 \xrightarrow{\text{H}_2} \text{A} \xrightarrow{\text{H}_2\text{O, KMnO}_4} \text{B} \xrightarrow{[\text{O}]} \text{E} \rightarrow \text{COOH}$
$\text{CH}_2\text{CH}_2\text{CH}_3 \xrightarrow{\text{HNO}_3} \text{X} \xrightarrow{\text{Qaytarilish}} \text{Y} \rightarrow \text{Aminopropan}$
$\text{Ca} \xrightarrow{\text{H}_2} \text{CaH}_2 \xrightarrow{\text{H}_2\text{O, SPIRT}} \text{Ca(OH)}_2 \xrightarrow{\text{CO}_2} \text{CaCO}_3 \xrightarrow{\text{H}_2\text{CO}_3} \text{Ca(HCO}_3)_2$
$\text{X} \xrightarrow{\text{H}_2\text{O, KOH}} \dots \xrightarrow{\text{KCl, Na}} \text{Buten} \quad \text{X} \rightarrow \text{Etanol}$
$\text{X} + \text{NaOH} \longrightarrow (\text{CH}_3\text{—CH}_2)_2\text{CHCH}_3 + \text{Na}_2\text{CO}_3$ $\text{X} = (\text{CH}_3\text{CH}_2)_2\text{CHCH}_2\text{COONa, CH}_3\text{—CH}_2\text{—CH(CH}_3\text{)CH}_2\text{COONa, (CH}_2\text{—CH}_2\text{)CHCH}_2\text{—COOH}$
$\text{X} \xrightarrow{2\text{HCl}} \text{Y} \xrightarrow{\text{NaOH, H}_2\text{O}} \text{Metil izobutil keton} \quad \text{X} - 4 \text{ metil } 1 \text{ pentan}$
$\text{Siklopropan} \xrightarrow{\text{HBr}} \begin{array}{c} \text{Br} \\ \\ \text{C—C—C} \\ \quad \quad \\ \text{Na} \quad \text{C}_6\text{H}_{14} \text{ (Geksan)} \end{array}$
$\text{Siklopropan} \xrightarrow{\text{Br}_2} \begin{array}{c} \text{Br} \quad \text{Br} \\ \quad \\ \text{C—C—C} \\ \quad \quad \\ \text{OH} \quad \text{OH} \end{array} \xrightarrow{\text{KOH (H}_2\text{O)}} \begin{array}{c} \text{C—C—C} \\ \quad \quad \\ \text{OH} \quad \text{OH} \end{array}$
$\text{Siklogeksan} \xrightarrow{\text{H}_2} \text{C}_6\text{H}_6 \xrightarrow{\text{Cl}_2} \text{C}_6\text{H}_5\text{Cl} \xrightarrow{\text{KOH}} \text{C}_6\text{H}_5\text{OH} \xrightarrow{\text{CH}_3\text{Cl}} \text{C}_6\text{H}_5\text{CH}_3 \xrightarrow{[\text{O}]} \text{C}_6\text{H}_5\text{COOH}$
$\text{Selluloza} \xrightarrow{\text{H}_2\text{O} + \text{H}_2\text{SO}_4} \text{Glyukoza} \xrightarrow{(\text{CH}_3\text{CO})_2\text{O}} \text{Glyukozaning } 5\alpha\text{'zoli sirka efiri}$
Siklobutan + HBr + O₂ + Br₂ bilan reaksiyaga kirishadi !!!
$1,3 \text{ dixlorbutan} \xrightarrow{\text{Zn}} \text{A metiksiklopropan} \xrightarrow{\text{HBr}} \text{B } 2\text{-brombutan} \xrightarrow{\text{KOH}} \text{C butanol -2}$
$1 \text{ brom } 2\text{metilbutan} \xrightarrow{\text{KOH}} \text{SPIRT} \rightarrow \text{X}_1 \xrightarrow{\text{HBr}} \text{X}_2 \xrightarrow{\text{KOH} + \text{SPIRT}} \text{X}_3 \xrightarrow{\text{HCl, H}_2\text{O}} \text{X}_4 \text{ Na}$ $\text{X}_5 \rightarrow 2,3,4,5 \text{ tetrametilgeptan}$
$2 \text{ metilpropan kislota} \xrightarrow{\text{Br}_2} \dots \xrightarrow{\text{NaOH(O)}} \dots \xrightarrow{\text{CH}_3\text{OH}} \text{Metilmetakrilat}$
$\begin{array}{c} \text{CH}_2 \\ / \quad \backslash \\ \text{H}_2\text{C} \quad \text{CH}_2 \end{array} \xrightarrow{\text{Br}_2, hv} \text{X} \xrightarrow{\text{Na}} \text{Y izopropilen bromid} \quad \text{Z} \rightarrow 2,3$
$\begin{array}{c} \text{CH}_2 \\ / \quad \backslash \\ \text{H}_2\text{C} \quad \text{CH}_2 \end{array} \xrightarrow{\text{Br}_2} \text{X} \xrightarrow{\text{KOH, H}_2\text{O}} \text{Y propandiol } 1,3$
$\begin{array}{c} \text{CH}_2 \\ / \quad \backslash \\ \text{H}_2\text{C} \quad \text{CH}_2 \end{array} \xrightarrow{\text{Cl}_2} \text{X}_1 \xrightarrow{\text{CH}_3\text{Cl, Na}} \text{X}_2 \xrightarrow{[\text{O}]} \text{A}$ Benzoy kislota

$\begin{array}{c} \text{H}_2\text{C} \quad \text{CH}_2 \\ \quad \\ \text{CH}_2 \end{array}$	
Etanol	$\xrightarrow{\text{H}_2 \text{ (katalizator)}}$ Etanol $\xrightarrow{\text{HCl}}$ Etilklor $\xrightarrow{\text{Na}}$ Butan
Etanol	$\xrightarrow{\text{H}_2\text{N}}$ X ₁ $\xrightarrow{\text{H}_2\text{SO}_4}$ KOH $\xrightarrow{\text{X}_2}$ HBr $\xrightarrow{\text{X}_3}$ Na $\xrightarrow{\text{X}_4}$ Al (katalizator) $\xrightarrow{\text{X}_5}$ Butadiyen 1,3
Etanol	$\xrightarrow{\text{Cl}_2 \text{ } h\nu}$ X $\xrightarrow{\text{KOH} + \text{SPIRT}}$ Y $\xrightarrow{\text{H}_2\text{O}}$ H ₂ SO ₄ $\xrightarrow{\text{Z}}$ J ₂ $\xrightarrow{\text{NaOH t'}}$ Q Yodoform
$\begin{array}{c} \text{C} \\ \diagup \quad \diagdown \\ \text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{OH} \end{array}$	$\xrightarrow{\text{Br}_2}$ 1,4-Dibrombutan $\xrightarrow{\text{NaOH}}$
$\begin{array}{c} \text{C} \quad \text{C}-\text{CH}_3 \\ \quad \\ \text{C} \quad \text{C} \\ \quad \\ \text{H}_2\text{O} \quad \text{C} \end{array}$	$\xrightarrow{\text{Br}_2}$ $\xrightarrow{\text{KOH} + \text{SPIRT}}$ C = C - C = C + 2KBr +
$\begin{array}{c} \text{C} \quad \text{C} \\ \quad \\ \text{C} \quad \text{C} \\ \quad \\ \text{CH}-\text{CH}_2- \end{array}_n$	$\xrightarrow{\text{Br}_2}$ A $\xrightarrow{\text{KOH} + \text{SPIRT}}$ B polimer C = (—CH ₂ —CH—
CaC ₂	$\xrightarrow{\text{H}_2\text{O}}$ C ₂ H ₂ $\xrightarrow{\text{H}_2\text{O}}$ H ₂ SO ₄ $\xrightarrow{\text{H}_2}$ CH ₃ COOH $\xrightarrow{\text{Zn}}$ NaOH $\xrightarrow{\text{NaOH}}$ Trinitro anilin
Ca	$\xrightarrow{\text{H}_2}$ CaH ₂ $\xrightarrow{\text{H}_2\text{O}}$ Ca(OH) ₂ $\xrightarrow{\text{CO}_2}$ CaCO ₃ $\xrightarrow{\text{CO}_2; \text{H}_2\text{O}}$ Ca(HCO ₃) ₂
CaCl ₂	$\xrightarrow{\text{Na}_2\text{CO}_3}$ CaCO ₃ $\xrightarrow{\text{t'}}$ CaO $\xrightarrow{\text{H}_2\text{O}}$ Ca(OH) ₂ $\xrightarrow{\text{CO}_2}$ CaCO ₃ $\xrightarrow{\text{H}_2\text{O}; \text{CO}_2}$ Ca(HCO ₃) ₂
CH ₃ COOH	$\xrightarrow{\text{H}_2 \text{ (katalizator)}}$ X ₁ $\xrightarrow{\text{H}_2\text{SO}_4 < 140^\circ\text{C}}$ X ₂ $\xrightarrow{\text{HCl}}$ X ₃ $\xrightarrow{\text{Na}}$ X ₄ $\xrightarrow{\text{t' AlCl}_3}$ Buten - 1
Fe	$\xrightarrow{\text{CuSO}_4}$ FeSO ₄ $\xrightarrow{\text{NaOH}}$ Fe(OH) ₂ $\xrightarrow{\text{H}_2\text{O}}$ Fe(OH) ₂ $\xrightarrow{\text{HCl}}$ FeCl ₃
Fe ₃ O ₄	$\xrightarrow{\text{CO}}$ Fe $\xrightarrow{\text{HCl}}$ FeCl ₂ $\xrightarrow{\text{NaOH}}$ Fe(OH) ₂ $\xrightarrow{\text{H}_2\text{O} + \text{O}_2}$ Fe(OH) ₃
Fe	$\xrightarrow{\text{Cl}_2}$ FeCl ₃ $\xrightarrow{\text{NaOH}}$ Fe(OH) ₃ $\xrightarrow{\text{t'}}$ Fe ₂ O ₃ $\xrightarrow{\text{H}_2\text{SO}_4}$ Fe ₂ (SO ₄) ₃
CH ₃ —CH ₂ —CH ₂	$\xrightarrow{\text{H}_2\text{O}}$ A $\xrightarrow{\text{O}_2}$ B Atseton + C Vodorod
C ₂ H ₂	$\xrightarrow{\text{HCl}}$ X ₁ $\xrightarrow{\text{Na}}$ X ₂ $\xrightarrow{\text{AlCl}_3}$ X ₃ $\xrightarrow{\text{Ni}}$ X ₄ $\xrightarrow{\text{HBr}}$ X ₅ \rightarrow 2 Br 2 metilpropan
CH ₃ CH ₂ OH	$\xrightarrow{\text{H}_2 \text{ (katalizator)}}$ X ₁ $\xrightarrow{\text{H}_2\text{SO}_4 < 140^\circ\text{C}}$ X ₂ $\xrightarrow{\text{HCl}}$ X ₃ $\xrightarrow{\text{Na}}$ X ₄ $\xrightarrow{\text{AlCl}_3}$ X ₅ Izobutan
C + H ₂	$\xrightarrow{\text{Pt (katalizator)}}$ X ₁ $\xrightarrow{\text{Cl}_2 \text{ } h\nu}$ X ₂ $\xrightarrow{\text{H}_2\text{O}}$ NaOH $\xrightarrow{\text{X}_3}$ HBr $\xrightarrow{\text{X}_4}$ Na $\xrightarrow{\text{X}_5}$ Etan
CH ₃ CH(CH ₃)CH ₂ COONa	$\xrightarrow{\text{NaOH}}$ X ₁ $\xrightarrow{\text{Cl}_2 \text{ } h\nu}$ X ₂ $\xrightarrow{\text{KOH} + \text{SPIRT}}$ X ₃ $\xrightarrow{\text{HBr}}$ X ₄ $\xrightarrow{\text{NaOH H}_2\text{O}}$ X ₅ 2 metilpropanol

$C_2H_2 \xrightarrow{N_2H_2} HCN \xrightarrow{H_2} NH_4CN \xrightarrow{NH_3} Ca(NH_2)_2 \xrightarrow{O_2} NH_4CNO \xrightarrow{t} O_2$
$CH_3CH_2CH \xrightarrow{HNO_3} X \xrightarrow{Qaytanuvchi} Y \rightarrow 2 \text{ Metilpropan aminopropan}$
$CH_4 \xrightarrow{1500^\circ C} X_1 \xrightarrow{Al(katalizator)} X_2 \xrightarrow{Cl_2} X_3 \xrightarrow{[O]} X_4 \xrightarrow{[O]} X_5 \xrightarrow{[O]} X_6$
$C_2H_6 \xrightarrow{Br} X_1 \xrightarrow{H_2O} X_2 \xrightarrow{[O]} X_3 \xrightarrow{Ag_2O(NH_3)} A \rightarrow \text{Karbon kislota}$
$C_2H_6 \xrightarrow{Br} C_2H_5Br \xrightarrow{NaOH} C_2H_5OH \xrightarrow{H_2SO_4(katalizator)} (C_2H_5)_2C$
$CH_3COOH \xrightarrow{Na} CH_2(Na)-COOH \xrightarrow{NH_3} CH_2NH_2COOH$
$CH_4 \xrightarrow{Piroliz} CH \equiv CH \xrightarrow{H_2O} CH_2 = \overset{O}{C} - H \xrightarrow{[O]} CH_3COOH \xrightarrow{Cl_2} CH_2Cl-COOH$ $NH_3 \rightarrow CH_2NH_2COOH$
$CH_3-CH_2-CH_3 \xrightarrow{Br_2} 2 \text{ Metil brombutan} \xrightarrow{NaOH, H_2O} 2 \text{ Metil butanol 2}$
$C_6H_6 \xrightarrow{Br_2} C_2H_5Br \xrightarrow{H_2O} C_2H_5OH \xrightarrow{[O]} CH_3COH \xrightarrow{Ag_2O, NH_3} CH_3COOH$
$C \xrightarrow{H_2} C_2H_2 \xrightarrow{H_2} C_2H_4 \xrightarrow{H_2, KMnO_4} C_2H_4(OH)_2 \xrightarrow{[O]} C_2H_2O_4$
$CH_4 \xrightarrow{1500^\circ C} C_2H_2 \xrightarrow{C} C_6H_6 \xrightarrow{Cl_2} C_6H_5Cl \xrightarrow{H_2O} C_6H_5OH$
$CH_4 \xrightarrow{[O]} CH_3OH \xrightarrow{[O]} H - \overset{O}{C} - H$
$C_2H_4 \xrightarrow{HCl} C_2H_5Cl \xrightarrow{H_2O, KOH} C_2H_5OH \xrightarrow{H_2SO_4} C_2H_4 \xrightarrow{H_2O} C_2H_5O$
$C_2H_2 \xrightarrow{CH_3-COH} \begin{cases} CH_3CH_2-OH \\ CH_3CH_2-OH \end{cases} \text{ Etilatsetat}$
$C_2H_2 \xrightarrow{H_2O} CH_3COH \xrightarrow{H_2} C_2H_5OH \xrightarrow{HBr} C_2H_5Br$
$CH_2-C(CH_3)_3 \xrightarrow{KMnO_4} C_6H_5COOH \xrightarrow{\text{Propanol}} \text{Izopropilbenzol}$
$Mg_3N_2 \xrightarrow{D_2O} X \xrightarrow{D_2SO_4} Y = 210g$
$\text{Maltoza} \xrightarrow{I, H_2O, OH} \text{Glyukoza} \xrightarrow{II, Ag(NH_2)OH} \text{Glyukon kislota}$
$\text{Nitrobenzol} \xrightarrow{(NH_4)_2S} \text{Anilin} \xrightarrow{HBr} \text{Fenil ammoniy}$
$Na_2O \xrightarrow{H_2O} NaOH \xrightarrow{CO_2} NaHCO_3 \xrightarrow{NaOH} Na_2CO_3 \xrightarrow{HNO_3} NaNO_3 \xrightarrow{t} NaNO_2$
$N_2 \xrightarrow{H_2} NH_3 \xrightarrow{HCl} NH_4Cl \xrightarrow{Ag_2SO_4} (NH_4)_2SO_4 \xrightarrow{NaOH} NH_3 \xrightarrow{O_2} N_2$
$H - \text{Butil bromid} \xrightarrow{KOH + SPIRT} \text{Butanol} \xrightarrow{+ HBr} CuHgOBr$
$HCl + KOH + K_2Cr_2O_7 \rightarrow X + KCl + H_2O + Cl_2 \quad X + KOH + Y + Cr(OH)_3$
$\text{Butan bromit} \xrightarrow{KOH + SPIRT} X_1 \rightarrow X_2 \rightarrow X_3 \rightarrow X_4 \quad X_5 \text{ 2 Metilpropan}$
$H - \text{Butan bromit} \xrightarrow{KOH + SPIRT} X \text{ Buten-1} \xrightarrow{HBr} 25g \text{ Butan}$
$\text{Vinilpropionat} \xrightarrow{H_2O} \text{Propan kislota} + \text{Sirka anhidrid} \quad CH_4; C_2H_6$
$\text{Vinilatsetat} \xrightarrow{H_2O} \text{Sirka kislota} + \text{Sirka anhidrid} \xrightarrow{Ag_2O} \text{Etilatsetat} + H_2O$
$\text{Vinilatsetat} \xrightarrow{H_2O} CH_3COOH + CH_3-COH \xrightarrow{BaCl_2} CH_3COOH \xrightarrow{Ag_2O} CH_4$
$\text{Vinilatsetat} \xrightarrow{H_2O} CH_3COOH + CH_3-COH \xrightarrow{Ag_2O} CH_3COOH \xrightarrow{C_2H_5OH} CH_3-CH_3 \xrightarrow{Br_2} CH_3-CH_2Br \xrightarrow{NaOH} CH_3CH_2OH \xrightarrow{CH_3COOH} \text{Etilatsetat}$
$\text{Vinilatsetilen} \xrightarrow{H_2O} X + Y \xrightarrow{Ca(OH)_2, t^\circ C} Z \xrightarrow{NaOH, t^\circ C} \text{Metan}$
$D_2O \xrightarrow{CaC_2} X \xrightarrow{D_2O, D_2SO_4} Y \xrightarrow{H_2} Z = 67,5$
$D_2O \xrightarrow{Na} X \xrightarrow{\text{Benzol}} Y = 421,5$
$Z \xrightarrow{H_2SO_4} H \xrightarrow{NaOH} X \text{ Natriy zinkat}$
$\text{Etanal} \xrightarrow{H_2(Ni)} X_1 \xrightarrow{t^\circ > 140^\circ (H_2SO_4)} X_2 \xrightarrow{HBr} X_3 + Na \quad X_4 \text{ Butan}$
$\text{Propan} \xrightarrow{Cl_2, hv} A \xrightarrow{H_2O, KOH} B \xrightarrow{(H_2SO_4), t^\circ > 140^\circ C} C \xrightarrow{HCl} D \text{ Na} \quad E \text{ 2,3 dimetil butan}$

$\text{CH}_4 \xrightarrow{1500^\circ\text{C}} \text{X}_1 \xrightarrow{\text{HOH, Hg}^{2+}} \text{X}_2 \xrightarrow{[\text{O}]} \text{X}_3 \xrightarrow{\text{Cl}_2} \text{X}_4 \xrightarrow{\text{NH}_3} \text{X}_5$	Aminosirka kislota
$\text{Eten} \xrightarrow{\text{KMnO}_4 / \text{H}_2\text{O}} \text{A} \xrightarrow{\text{HCl}} \text{B} \xrightarrow{\text{HCl}} \text{C}$	A – etilenglikol, B – 2-xloretanol, C – 1,2 dixloretan
$\text{Izopentan} \xrightarrow{\text{Br}_2, h\nu} \text{X} \xrightarrow{\text{KOH}} \text{spirt} \xrightarrow{\text{Y}} \text{HBr} \xrightarrow{\text{Z}}$	2 brom 2 metil butan
$\text{CH}_3\text{CHCHCH}_3 \xrightarrow{\text{Br}_2} \text{A} \xrightarrow{\text{Zn}} \text{B} \xrightarrow{\text{HCl}} \text{C} \xrightarrow{\text{KOH/spirt}} \text{D}$	B – buten 2, D – buten 2
$1,1 \text{ dimetilsiklopropan} \xrightarrow{+\text{H}_2} \text{A} \xrightarrow{+\text{Cl}_2} \text{B} \xrightarrow{+\text{Na}, +\text{CH}_3\text{Cl}} \text{C}$	A – dimetiletimetan, B – 2-metil 2-xlorbutan, C – 2,2 dimetilbutan
$\text{X}_1 \xrightarrow{1500^\circ\text{C}} \text{X}_2 \xrightarrow{450^\circ} \text{C}_6\text{H}_6$	X_1 – metan, X_2 – atsetilen,
$\text{CH}_2(\text{Br})\text{CH}(\text{Br})\text{CH}_2\text{CH}_3 \xrightarrow{\text{Zn}} \text{A} \xrightarrow{\text{HBr}} \text{B} \xrightarrow{\text{KOH/spirt}} \text{C}$	B – ikkilamchibutilbromid
$\text{C}_2\text{H}_4 \xrightarrow{\text{KMnO}_4 / \text{H}_2\text{O}} \text{A} \xrightarrow{\text{HCl}} \text{B} \xrightarrow{\text{HCl}} \text{C}$	A – $\text{CH}_2\text{OHCH}_2\text{OH}$, B – $\text{CH}_2\text{OHCH}_2\text{Cl}$ C – $\text{CH}_2\text{ClCH}_2\text{Cl}$
$2 \text{ brom } 2,3,3 \text{ trimetilbutan} \xrightarrow{\text{KOH(sp)}} \text{X}_1 \xrightarrow{\text{HBr}} \text{X}_2 \xrightarrow{\text{Na}} \text{X}_3$	2,2,3,3,4,4,5,5 oktametilgeksan
$\text{CH}_3 - \text{CH}(\text{CH}_3) - \text{CH}_2 - \text{COONa} \xrightarrow{\text{NaOH, t}^\circ} \text{X}_1 \xrightarrow{\text{Br}_2} \text{X}_2 \xrightarrow{+\text{Na}} \text{A}$	2,2,3,3 tetrametil butan
$\text{CH}_3\text{COOH} \xrightarrow{\text{O}_2} \text{X} \xrightarrow{\text{NH}_3} \text{Y}$	Y glikokol
$1,3 \text{ dibromopropan} \xrightarrow{\text{Na}} (1)\text{A} \xrightarrow{\text{H}_2 / \text{Pt}} (2)\text{B} \xrightarrow{\text{Br}_2 / h\nu} (3)\text{C} \xrightarrow{\text{NaOH(sp)}} (4)\text{D} \xrightarrow{\text{HCl}} (5)\text{E} \xrightarrow{\text{Na}} (6)\text{F}$	(4) – propen-1
$\text{Benzol} \xrightarrow{\text{HNO}_3 / \text{H}_2\text{SO}_4} \text{X} \xrightarrow{\text{Fe} + \text{HCl (me'l)}} \text{Y} \xrightarrow{\text{NaOH}} \text{Z}$	X – nitrobenzol, Y – fenilammoniy xlorid, Z – anilin
$1,4 \text{ dixlorbutan} \xrightarrow{\text{Zn}} \text{A} \xrightarrow{\text{Br}_2} \text{B} \xrightarrow{\text{KOH/sp}} \text{C}$	A – siklobutan, B – 1,4 dibrombutan, C – butadiyen 1,3
$\text{K} \xrightarrow{\text{H}_2\text{O}} \text{KOH} \xrightarrow{\text{HCl}} \text{X} \xrightarrow{\text{Y}} \text{Y} \xrightarrow{\text{KNO}_2} \text{X} - \text{KCl}, \text{Y} - \text{KNO}_3$	
$1,6 \text{ dibromgeksan} \xrightarrow{2\text{Na}} \text{A} \xrightarrow{\text{Pd} / 300^\circ\text{C}} \text{B} \xrightarrow{\text{HNO}_3 / \text{H}_2\text{SO}_4} \text{C}$	A – siklogeksan, B – benzol, C – nitrobenzol
$\text{Izopentan} \xrightarrow{\text{Cl}_2, h\nu} (1)\text{A} \xrightarrow{\text{KOH/sp}} (2)\text{B} \xrightarrow{\text{Br}_2} (3)\text{C} \xrightarrow{\text{Zn}} (4)\text{D}$	t-magan ugv: (2) – 2 metil buten-2, (4) - 2 metil buten-2
$\text{Al}_2(\text{SO}_4)_3 \xrightarrow{\text{NaOH}} \text{X} \xrightarrow{\text{t}^\circ} \text{Y} \xrightarrow{\text{Na}} \text{NaOH}$	X – $\text{Al}(\text{OH})_3$, Y – H_2O
$\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{I} \xrightarrow{\text{KOH/spirt}} \text{A} \xrightarrow{\text{H}_2\text{O} / \text{H}_2\text{SO}_4} \text{B} \xrightarrow{\text{t}^\circ > 140^\circ} \text{C} \xrightarrow{\text{H}_2\text{SO}_4} \text{C}$	A – buten-1, B – butanol-2, C – buten-2
$\text{CH}_4 \xrightarrow{1500^\circ\text{C}} \text{X}_1 \xrightarrow{\text{H}_2\text{O}} \text{X}_2 \xrightarrow{[\text{O}]} \text{X}_3 \xrightarrow{\text{Cl}_2} \text{X}_4 \xrightarrow{\text{NH}_3} \text{X}_5$	Glitsin
$\text{CaC}_2 \xrightarrow{2\text{H}_2\text{O}} \text{A} \xrightarrow{\text{C}, (450 - 500)} \text{B} \xrightarrow{\text{HNO}_3 / \text{H}_2\text{SO}_4} \text{C} \xrightarrow{(\text{NH}_4)_2\text{S}} \text{D} \xrightarrow{3\text{Br}_2} \text{E}$	2,4,6 tribromanilin
$\text{Buten-1} \xrightarrow{\text{HBr}} \text{X}_1 \xrightarrow{\text{NaOH}(\text{H}_2\text{O})} \text{X}_2 \xrightarrow{\text{t}^\circ > 140^\circ} (\text{H}_2\text{SO}_4) \text{X}_3$	Buten-2
$1,3 \text{ dixloropropan} \xrightarrow{\text{Zn}} \text{A} \xrightarrow{\text{H}_2 / \text{Pt}} \text{B} \xrightarrow{\text{Cl}_2 / h\nu} \text{C} \xrightarrow{\text{KOH(sp)}} \text{D} \xrightarrow{\text{HBr}} \text{E} \xrightarrow{\text{Na}} \text{F}$	2,3 dimetilbutan
$1,6 \text{ dibrom } 2\text{-metilgeksan} \xrightarrow{\text{Zn}} \text{A} \xrightarrow{\text{Pd} / 300^\circ} \text{B} \xrightarrow{\text{Br}_2} \text{C}$	A – metilsiklogeksan, B – metilbenzol, C – 2,4,6 bromtoluol

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112,1,110,3,108,5,106,7,104,9,102,11,100,13,98,15,96,17,94,19,92,21,90,23,88,25,86,27,84,29,82,31,80,33,78,35,76,37,74,39,72,41,70,43,68,45,66,47,64,49,62,51,60,53,58,55

52,61,50,63,56,57,54,59,44,69,42,71,48,65,46,67,36,77,34,79,40,73,38,75,28,85,26,87,32,81,30,83,20,93,18,95,24,89,22,91,12,101,10,103,16,97,14,99,4,109,2,111,8,105,6,107

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112,1,110,3,108,5,106,7,104,9,102,11,100,13,98,15,96,17,94,19,92,21,90,23,88,25,86,27,84,29,82,31,80,33,78,35,76,37,74,39,72,41,70,43,68,45,66,47,64,49,62,51,60,53,58,55

54,59,56,57,50,63,52,61,46,67,48,65,42,71,44,69,38,75,40,73,34,79,36,77,30,83,32,81,26,87,28,85,22,91,24,89,18,95,20,93,14,99,16,97,10,103,12,101,6,107,8,105,2,111,4,109
