

VI BOB. 4-MAVZU.

Suvning kimyoviy xossalari

O'rganiladigan natijalar

- Asoslar
- Kislotalar

Keling, suv ishtirok etuvchi biladigan barcha reaksiyalarimizni eslaylik. Buning uchun ilgari duch kelgan reaksiya tenglamalarini yozamiz va ularni sistemaga keltiramiz. Bundan ma'lum bo'ladiki, suv juda faol kimyoviy moddadir.

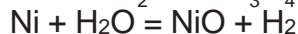
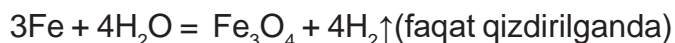
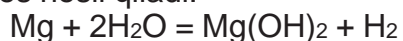
1. Suv ko'plab metallar bilan reaksiyaga kirishib, asos hosil qiladi va vodorod ajralib chiqadi:



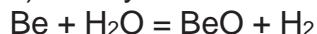
Faol metallar: Li, Na, K, Rb, Cs, Fr, Ca, Sr, Ba, Ra



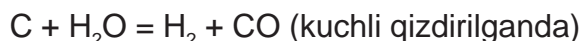
b) Magniy issiq suv bilan reaksiyaga kirishib, erimaydigan asos hosil qiladi:



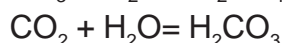
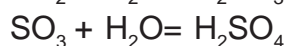
c) Berilliy suv bilan amfoter oksid hosil qiladi:



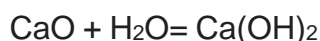
2. Metallmaslar orasida, masalan, uglerod va uning vodorod birikmasi (metan) suv bilan reaksiyaga kirishadi. Ushbu moddalar metallarga qaraganda ancha kam faol, ammo yuqori haroratlarda suv bilan reaksiyaga kirisha oladi:



3. Suv ko'plab metallmaslar oksidlari bilan reaksiyaga kirishadi va kislotalat hosil qiladi:



4. Ba'zi metall oksidlari ham suv bilan reaksiyaga kirishib, asos hosil qiladi:



Hamma metall oksidlari ham suv bilan reaksiyaga kirisha olmaydi.

Ulardan ba'zilar suvda amalda erimaydi va shuning uchun suv bilan reaksiyaga kirishmaydi. Bular ZnO , TiO_2 , Cr_2O_3 bo'lib, ulardan, masalan, suvga chidamli bo'yoqlar tayyorlanadi. Temir oksidlari ham suvda erimaydi va u bilan reaksiyaga kirishmaydi.

Asosiy tushunchalar:

Asoslar (gidroksidlar) – molekularida metall atomlari va bir yoki bir nechta OH gidroksil guruhi bo'lgan murakkab moddalar.

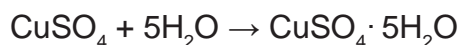
Kislotalar – vodorod atomlari hamda kislota qoldig'idan iborat bo'lgan murakkab moddalar.

Eslab qoling!

Faqat faol metallarning oksidlari suv bilan reaksiyaga kirishadi. O'rta faollikdagi metallar oksidlari va faollik qatorida vodoroddan keyin turgan metallar suvda erimaydi, masalan, $\text{CuO} + \text{H}_2\text{O} =$ reaksiya bormaydi.



5. Suv ko'p sonli birikmalar hosil qiladi, ularda uning molekulasini to'liq saqlanib qoladi. Bular gidratlar deb ataladi. Agar gidrat kristalli bo'lsa, u kristallogidrat deb ataladi. Misol uchun:

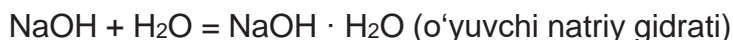
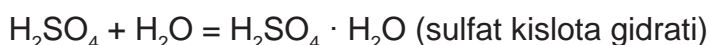


Oq rangli modda
suvsiz mis sulfati



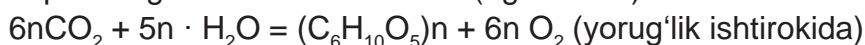
kristallogidrat ko'k
rangli mis kuporosi

Gidratlarning hosil bo'lishiga boshqa misollar keltiraylik:

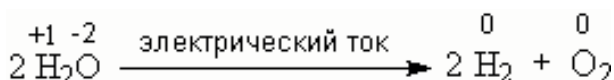
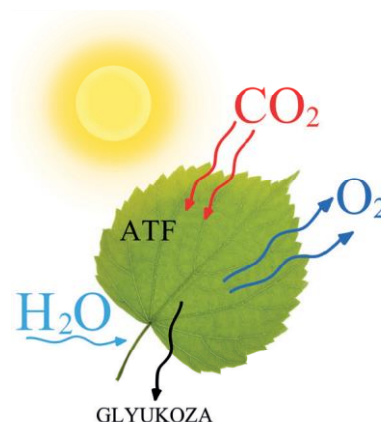


Suvni gidratlarga va kristallogidratlarga bog'laydigan birikmalar qurituvchi sifatida ishlatiladi. Ularning yordami bilan, masalan, nam atmosfera havosidan suv bug'ini olib tashlanadi.

6) Suvning maxsus reaksiyasi – kislorodning chiqishi bilan sodir bo'ladigan o'simliklar tomonidan kraxmal $(\text{C}_6\text{H}_{10}\text{O}_5)_n$ va boshqa shunga o'xshash birikmalar (uglevodlar) sintezi:



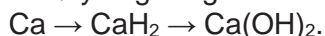
Suv elektr toki ta'sirida vodorod va kislorodga parchalanadi:



Topshiriqlar

1. 64 g oltingugurtdan olingan barcha oltingugurt oksidini (VI) sulfat kislotaga aylantirish uchun necha gramm suv kerak bo'ladi? Bu qancha sulfat kislota hosil qiladi?

2. Quyidagi o'zgarishlarni amalga oshirish uchun reaksiya tenglamalarini yozing:



3. Amalga oshirilishi mumkin bo'lgan reaksiya tenglamalarini tugating, reaksiya mahsullarini nomlang.

