

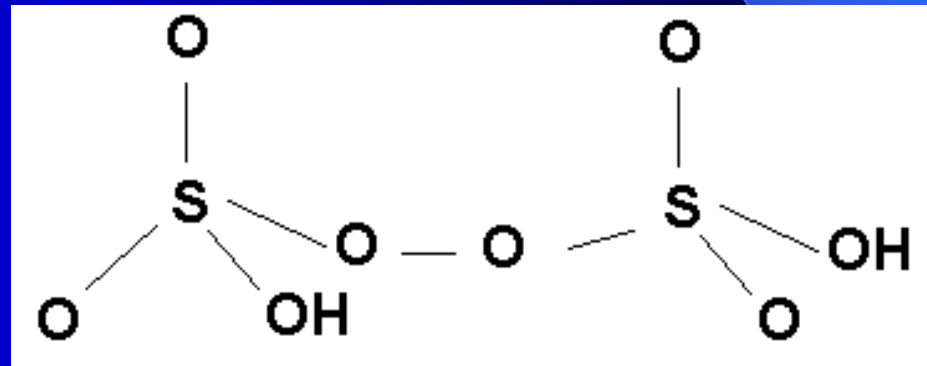
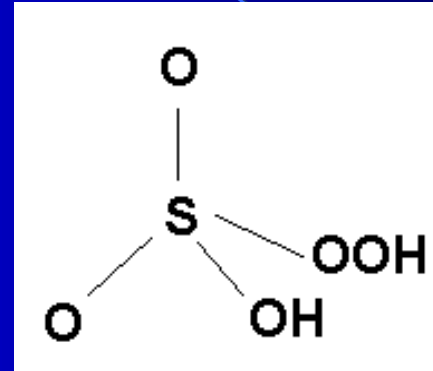
KONTAKTNI POSTUPAK

- $\overset{\text{IV}}{1} \quad \quad \quad \overset{\text{V}}{\text{V}}$
- $2 \text{VO}_2 + \frac{1}{2} \text{O}_2 \rightarrow \text{V}_2\text{O}_5$
- $\overset{\text{V}}{\text{V}_2\text{O}_5} + \text{SO}_2 \rightarrow 2 \overset{\text{IV}}{\text{VO}_2} + \text{SO}_3$
- $\overset{\text{IV}}{\text{SO}_2} + \frac{1}{2} \text{O}_2 \rightarrow \overset{\text{VI}}{\text{SO}_3}$

SVOJSTVA:

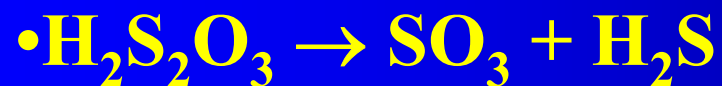
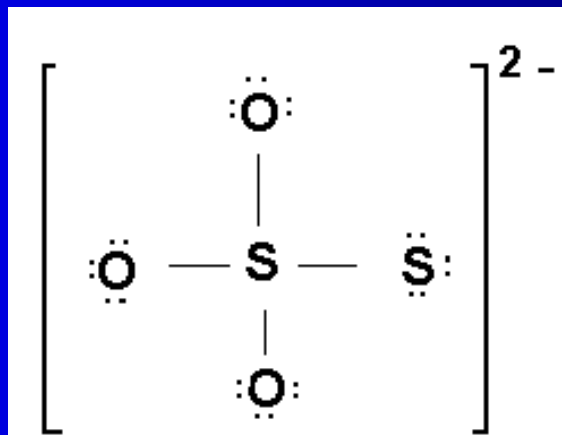
- $\text{H}_2\text{SO}_4 \leftrightarrow \text{H}^+ + \text{HSO}_4^-$
- $\text{HSO}_4^- \leftrightarrow \text{H}^+ + \text{SO}_4^{2-} \quad K_2 \sim 10^{-2} \text{ mol/L}$
- -OKSIDACIJSKO DJELOVANJE
- VRUĆA KONC. H_2SO_4
- -
- $\text{Cu} + 3 \text{H}^+ + \text{HSO}_4^- \rightarrow \text{Cu}^{2+} + \text{SO}_2 + 2 \text{H}_2\text{O}$
- -DEHIDRATACIJSKO DJELOVANJE
- SOLI:
- GALICE: $\text{MSO}_4 \cdot 7 \text{H}_2\text{O}$ ili $5 \text{H}_2\text{O}$
- ALAUNI: $\text{MM}(\text{SO}_4)_2 \cdot 12 \text{H}_2\text{O}$
- ŠENITI: $\text{M}_2\text{M}(\text{SO}_4)_2 \cdot 6 \text{H}_2\text{O}$

PEROKSOKISELINE

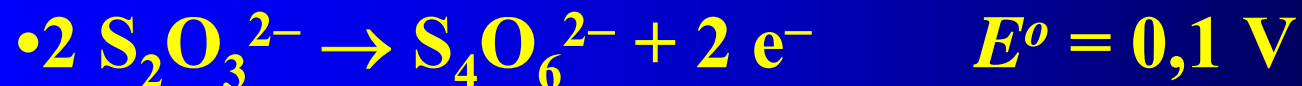


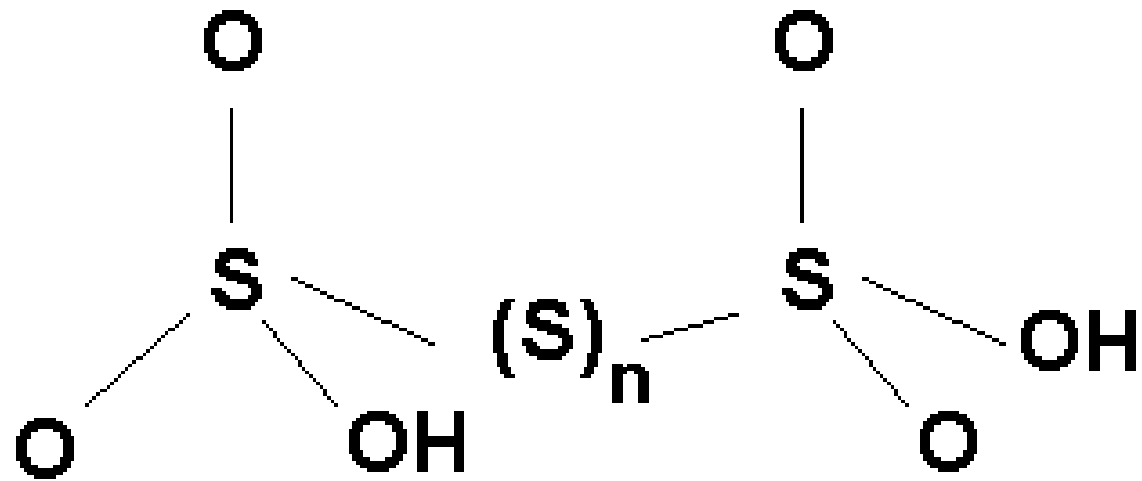
$E^0 = 2,05 \text{ V}$

TIOKISELINE



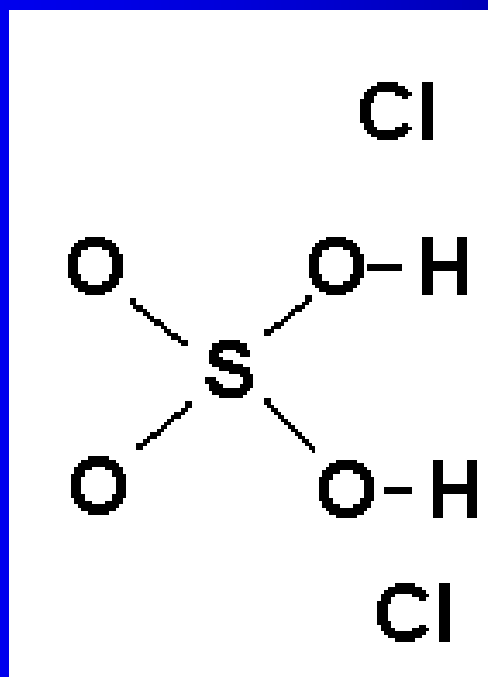
- **BEZVODNA SREDINA**

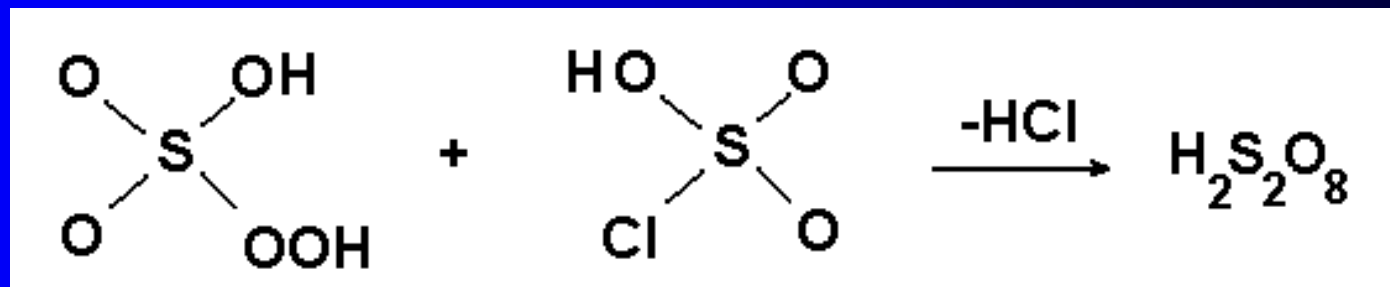
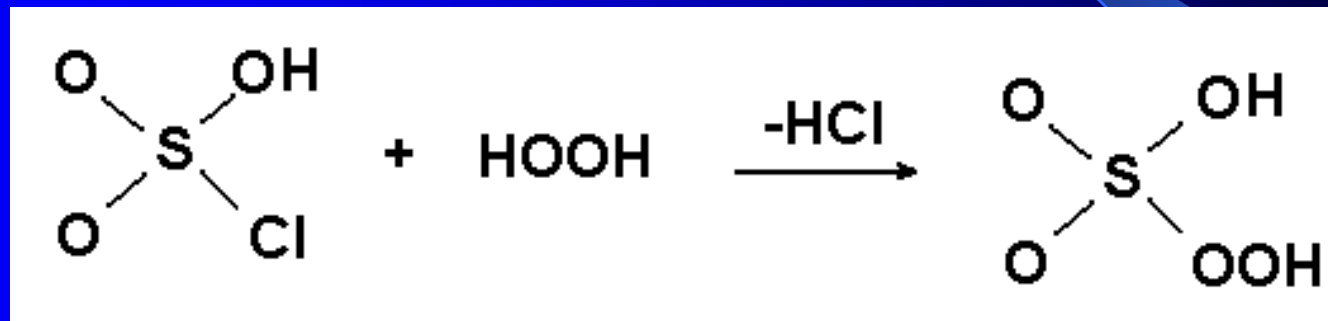
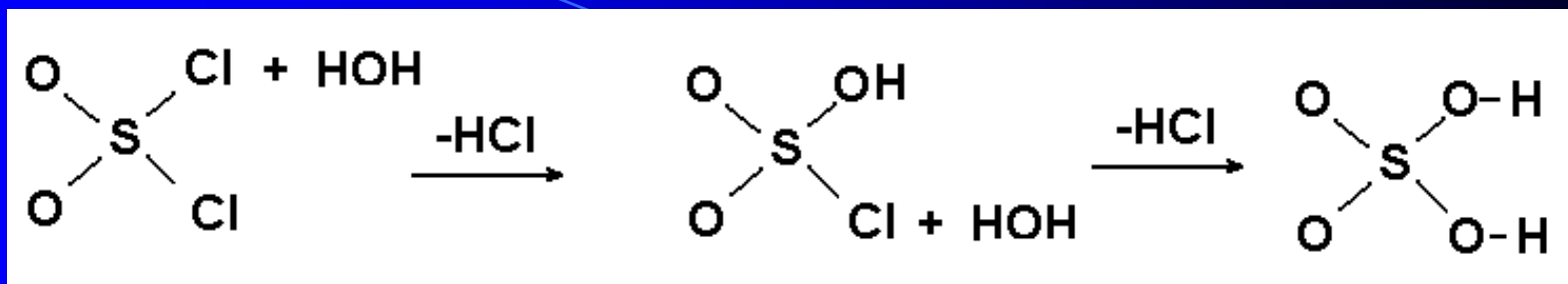




HALOGENSKI DERIVATI SUMPORNE KISELINE

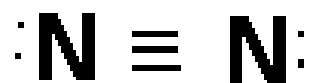
- **mono:** $\text{SO}_3 + \text{HCl} \rightarrow \text{HSO}_3\text{Cl}$
kat.
- **di:** $\text{SO}_2 + \text{Cl}_2 \rightarrow \text{SO}_2\text{Cl}_2$
sulfuril - klorid



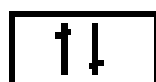


XV SKUPINA $ns^2 np^3$

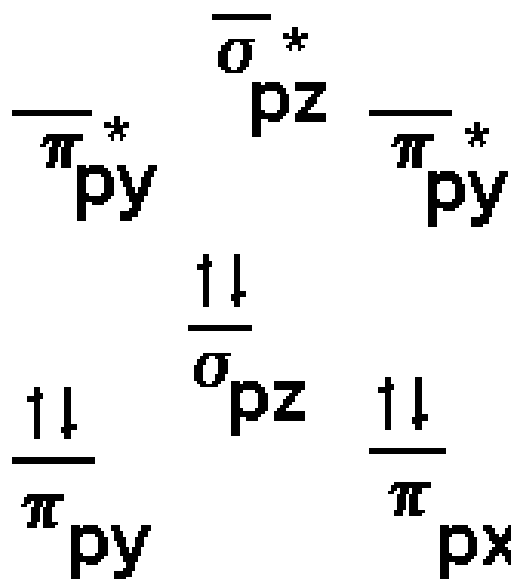
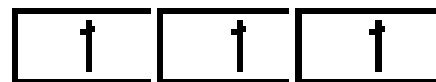
	N	P	As	Sb	Bi
• <u>E_i</u>	14,5	11	10	8,6	8
• eV					
• χ	3	2,1	2,0	1,9	1,9
• E^0/N	0,3	~0	-0,5	-0,5	-0,8
•					
• $Z + 3 H^+ + 3 e^- \leftrightarrow ZH_3$					



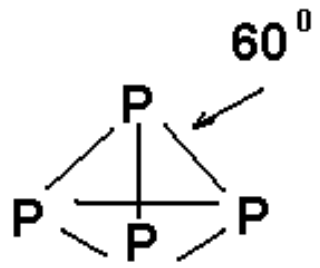
2s



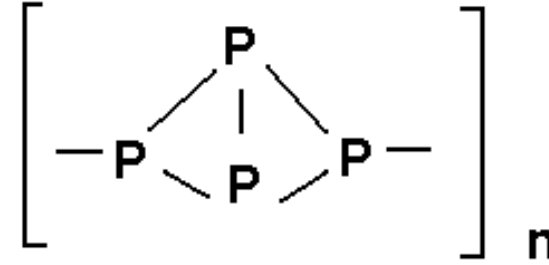
2p



P_4



P_n



-
-
-
-
-

Asn

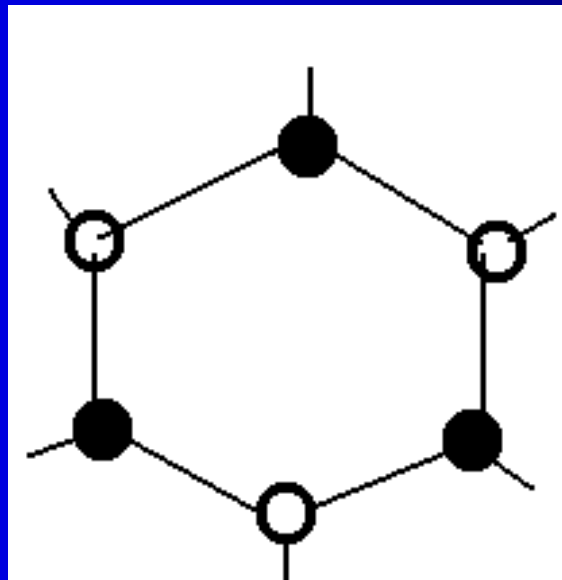
Sbn

Bin

tt / °C
sublimira

631

271



DOBIVANJE: DUŠIK



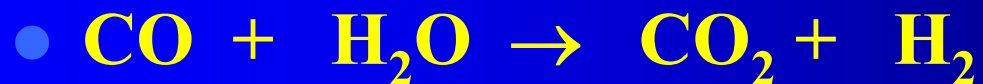
- **Industr. iz zraka**

- **1.) - FRAKCIJSKA DESTILACIJA**



- $\underbrace{\hspace{10em}}$

- **zrak**



FOSFOR

- $\text{Ca}_3(\text{PO}_4)_2$ Fosforit
- $\text{Ca}_5(\text{PO}_4)_3\text{F}$ Fluoroapatit
- $2\text{Ca}_3(\text{PO}_4)_2 + 10 \text{C} + 6 \text{SiO}_2 \leftrightarrow 6 \text{CaSiO}_3 + 10 \text{CO} + \text{P}_4 (\text{g})$
- $\text{P}_4 + 3 \text{Cu}^{2+} + 6 \text{H}_2\text{O} \leftrightarrow \text{Cu}_3\text{P}_2 + 2 \text{H}_3\text{PO}_3 + 6\text{H}^+$

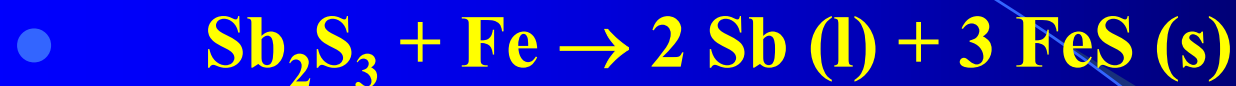
ARSEN

- **FeAsS** **Arsenopirit**
- **As₄S₄** **Realgar, As₂S₃,**
auripigment
- **Dobivanje:** **4 FeAsS → 4 FeS + As₄ (g)**
- **(FeAs₂ · FeS₂)**

- ANTIMON



Antimonit



- BIZMUT



Bizmutov sjajnik



PREGLED REAKCIJA



- metal



- halogen

-

Bi



Pad reaktivnosti
od N do Bi

za N_2

osim za N_2

osim za N_2

uz višak F_2, Cl_2, Br_2

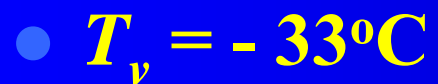
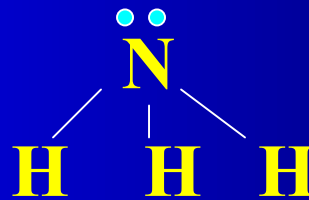
ZX_5 osim N i

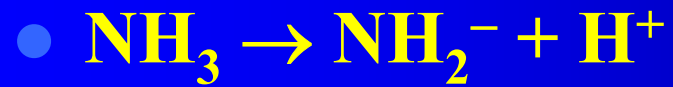
posebno kod Sb i Bi

SPOJEVI



←
Raste bazičnost





- Dobivanje:

- Laboratorijsko:



-

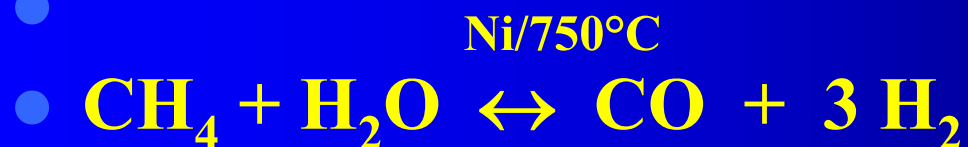
- Industrijsko:

-

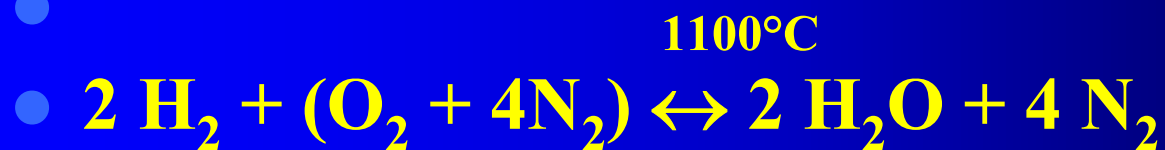


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-



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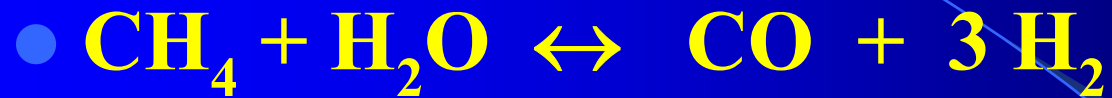
- zrak

-

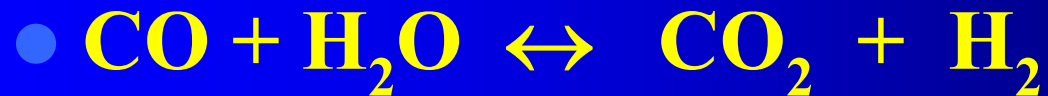
- ostatak CH_4 (9%)

- **ostatak CH₄ (9%)**

Ni/1000°C



-



Fe O /400 C

Cu²/200 C



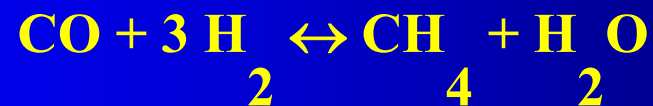
- **ostatak CO (0,3%)**

-

Ni/350° C

-

-



- **sastav sinteznog plina:**

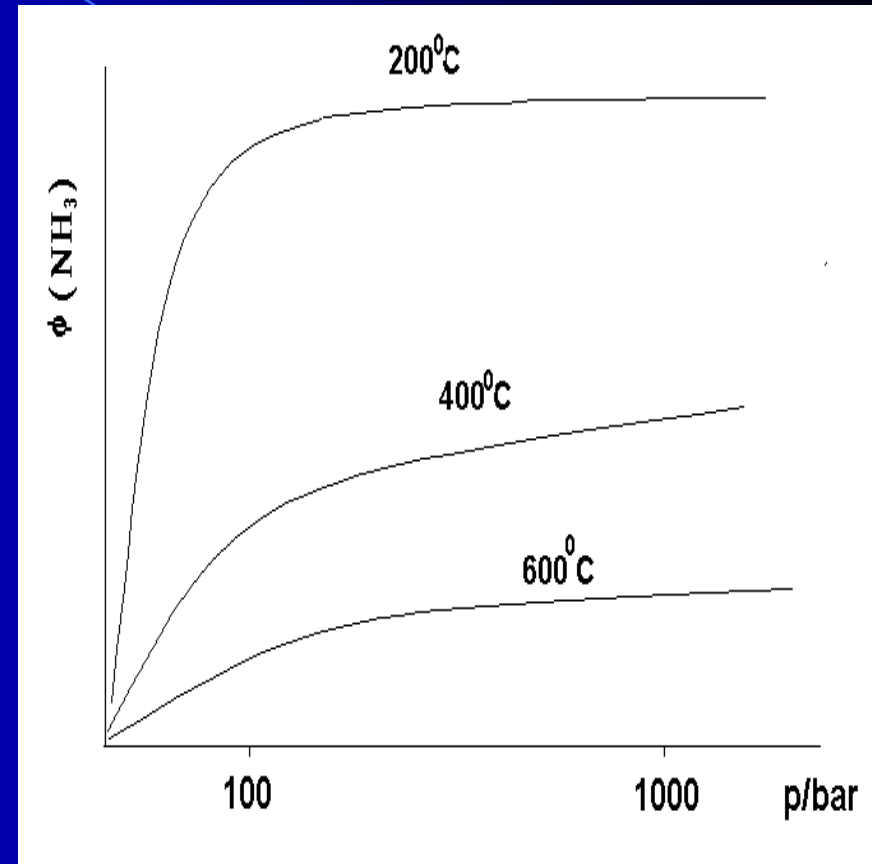
-
- $\varphi(\text{H}_2) = 74,3\%$
- $\varphi(\text{N}_2) = 24,7\%$
- $\varphi(\text{CH}_4) = 0,8\%$
- $\varphi(\text{Ar}) = 0,3\%$
- $\varphi(\text{CO}) = 1 - 2 \text{ ppm}$



- $\varphi(\text{NH}_3) = 15\%$



- (čelik)



THE END

The image features a blue gradient background that transitions from a lighter blue on the left to a darker blue on the right. A curved line starts near the top left and curves downwards towards the bottom right. The text "THE END" is centered in the upper half of the image in a yellow, sans-serif font.