

SYNTHESIS OF XENON DIFLUORIDE BY XENON DIFFUSION COMBUSTION IN FLUORINE

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The object of this work is an investigation of the XeF_2 synthesis by diffusion combustion of previously non-mixed gaseous xenon and fluorine and creating an industrial XeF_2 of effect of various parameters, including the initial conditions of a diffusion flare ignition of the xenon-fluorine systems were studied. The maximum length of the diffusion flare were determined using the following equation

$$L_{\max} = 11,5 \cdot \left(1 + \frac{m P_{\text{OF}}}{P_{\text{OXe}}} \right) \cdot d_0,$$

where m is a theoretical amount of fluorine, necessary for combustion of 1 m^3 of Xe , P_{OF} and P_{OXe} - the densities of F and Xe respectively. The optimal conditions of the process were established and using them the XeF_2 with the degree of purity more than 99,5 % were obtained.