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## **C1Po2B-01 [17]: Numerical study of the effect of the helium-based multi-component gas mixture on the internal purifier**

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The performance of the internal purifier has a direct impact on the liquefaction capacity of the helium liquefier. With increasing impurity level in helium, liquefaction capacity of the helium liquefier reduced significantly. In order to ensure the helium liquefier operates safely and stable, remove the impurities from the helium in the helium liquefier and improve the utilization of the helium, it is necessary for us to develop the technology of purification. In this paper, the impact of changes of multi-component helium mixture on the performance of the internal helium has been developed numerically. The final results show that as the impurities in the helium mixture increases, the performance of the internal purifier decreases first and then increases. It can help us design more efficient and compact internal purifier.

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