

ABSTRACT

We present 100 and 200 μ m ISOPHOT observations of the dense core L1498. We have mapped the central core by using $\Delta I_{200} = I_{200} - I_{100}/\Theta$ where ΔI_{200} is a measure of the emission from the cold dust and $\Theta = I_{100}/I_{200}$ in the outer regions. The dust continuum emission provides information about the chemical depletion and the properties of cold cores where there is a lack of gas tracers. Previous observations of L1498 show that the emission from CS and CCS lie outside of the NH₃ core. The peak in ΔI_{200} lies close to the previously observed NH₃ peak. Comparison with high spatial resolution observations of C¹⁸O 1-0 emission show that this peaks on either side of the ΔI_{200} maximum with a dip in the core center. We estimate that the depletion factor for C¹⁸O in this region is at least 3 and most likely $\sim 10 - 20$. Such high depletion has significant implications for studies of gas-grain chemistry and protostellar cores.

Subject headings: