

P153a PEACHES IV: Sulfur-bearing Molecules in Protostars in the Perseus Molecular Cloud

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In low-mass protostars, sulfur-bearing molecules (e.g., SO and SO₂) are effective probes for the heated regions, such as shocked gas around the accretion disks and along the outflow cavity walls. The unbiased Perseus ALMA Chemical Survey (PEACHES) covers ~ 50 protostars in Perseus, ~ 20 of which are abundant with sulfur-bearing molecules (SO, ³⁴SO, SO₂, and CS are detected around the central sources). Here we present the distributions and analyses of sulfur-bearing molecules in the sulfur-rich protostars from PEACHES survey. The molecular abundances and physical properties are estimated with NLTE calculations. Overall, SO/SO₂ emission concentrate at shocked-regions while CS emission is more extended. For Class I sources, sulfur-species are often enhanced around the disks due to the accretion shocks. While for the younger Class 0 sources, SO/SO₂ emission are often associated with outflows and dynamic interactions.