

## LOCATING COMPLEX, SATURATED ORGANIC MOLECULES IN THE INTERSTELLAR MEDIUM

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Astronomers have known for two decades now that the chemistry of the interstellar medium can be quite interesting. Millimeter wavelength lines of complex, saturated organic molecules such as methyl formate ( $\text{HCOOCH}_3$ ), ethyl cyanide ( $\text{CH}_3\text{CH}_2\text{CN}$ ), and ethanol ( $\text{CH}_3\text{CH}_2\text{OH}$ ) were first detected more than two decades ago. Recently, we have exploited advances in millimeter interferometry to pinpoint the locations of these sources. We have surveyed several regions containing these molecules and have been able to develop a unified empirical picture of the environment in which they exist. Our results indicate these molecules exist in the gas phase only in the dense, dusty, hot cores of molecular clouds in which massive star formation has recently occurred. Our empirical picture supports models in which these complex species are formed on the surfaces of icy grains. After a nearby massive star forms, these molecules (or their precursors) are evaporated off the grains into the gas phase.

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