

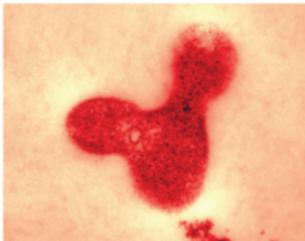
Acidophiles

sourpusses

**life in the
extremes**

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Ferroplasma acidiphilum
extracts energy from iron—it
“eats” the metal and leaves
rust behind.

EXTREME ABILITY Acids, such as the citric acid in lemons, taste sour. Even the word acid comes from the Latin word *acidus* meaning “sour.” Acidophiles survive in very acidic environments where pH rarely rises above 3. When other organisms are exposed to such acidic conditions their DNA is damaged beyond repair.

EXTREME ENVIRONMENTS These organisms are most commonly found in mine drainages, waste treatment plants, and sulfuric acid hot springs. Scientists speculate that acidophiles could live in the toxic clouds of Venus’ atmosphere.

EXTREME EXAMPLES Acidophiles play a complex role in acid mine drainage and some are used in coal mining to recover metallic minerals and to reduce sulfur levels.

Photo Credit: Algae flow patterns at Yellowstone National Park - J. Schmidt, NPS (front); *Ferroplasma acidiphilum* - Helmholtz Centre for Infection Research (back). For more information visit <http://astrobiology.nasa.gov/>