



# ***Acidithiobacillus ferrooxidans* (Temple and Colmer) Kelly and Wood**

**19859™**

## **Description**

This strain is recommended by ATCC® for use in the tests described in ASTM Standard Test Method E1357-90 where only the taxon is specified.

**Strain designation:** NCIB 9490

**Deposited As:** *Thiobacillus ferrooxidans* Temple and Colmer

**Type strain:** No

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## **Storage Conditions**

**Product format:** Test tube

**Storage conditions:** See handling procedure

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## **Intended Use**

This product is intended for laboratory research use only. It is not intended for any animal or human therapeutic use, any human or animal consumption, or any diagnostic use.

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## **BSL 1**

ATCC determines the biosafety level of a material based on our risk assessment as guided by the current edition of *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, U.S. Department of Health and Human Services. It is your responsibility to understand the hazards associated with the material per your organization's policies and procedures as well as any other applicable regulations as enforced by your local

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or national agencies.

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ATCC highly recommends that appropriate personal protective equipment is always used when handling vials. For cultures that require storage in liquid nitrogen, it is important to note that some vials may leak when submersed in liquid nitrogen and will slowly fill with liquid nitrogen. Upon thawing, the conversion of the liquid nitrogen back to its gas phase may result in the vial exploding or blowing off its cap with dangerous force creating flying debris. Unless necessary, ATCC recommends that these cultures be stored in the vapor phase of liquid nitrogen rather than submersed in liquid nitrogen.

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## **Certificate of Analysis**

For batch-specific test results, refer to the applicable certificate of analysis that can be found at [www.atcc.org](http://www.atcc.org).

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## **Growth Conditions**

### **Medium:**

ATCC Medium 2039: *Acidithiobacillus ferrooxidans* Medium

**Temperature:** 26°C

**Atmosphere:** Aerobic

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## **Handling Procedures**

1. Incubate test tube cultures under above conditions upon receipt. It is helpful to incubate test tubes in a slanted position to increase gas exchange in broth. Transfer culture to fresh media within one week of arrival.
2. Gently vortex the test-tube to dislodge the iron that has oxidized onto the

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- glass. Aseptically withdraw approximately 1.0 mL of the broth culture and transfer into 5 mL of fresh broth.
3. Incubate the broth in a static and slanted position.
  4. Growth is evident within one to two weeks, when yellow-orange iron oxide deposits are observed.
  5. Transfer the culture approximately every two to four weeks.
  6. Transfer more tubes than needed as a backup source in the event of low viability due to repeated passage. The culture will remain viable for a minimum of one month and for up to three months when stored at room temperature without shaking.
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### **Notes**

The cells are motile and rod-shaped.

This strain is cited to produces hydrogen sulfide:ferric ion oxidoreductase (Appl. Environ. Microbiol. 58: 431-433, 1992) and is used in the testing of the bioleaching rate of iron from pyrite.

Additional information on this culture is available on the ATCC® web site at [www.atcc.org](http://www.atcc.org).

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### **Material Citation**

If use of this material results in a scientific publication, please cite the material in the following manner: *Acidithiobacillus ferrooxidans* (Temple and Colmer) Kelly and Wood (ATCC 19859)

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### **References**

References and other information relating to this material are available at [www.atcc.org](http://www.atcc.org).

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