Thermiculite™ 866

A High Temperature, High Performance Gasket Material for SOFC Applications

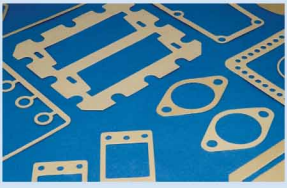
Thermiculite™ 866 was designed for, and has been proven in, SOFC applications.

The components of Thermiculite™ 866 ensure that a seal is created and then the seal is maintained in service.

The material consists of highly aligned platelets of chemically exfoliated vermiculite that are blended with, and bind together, plates of steatite.

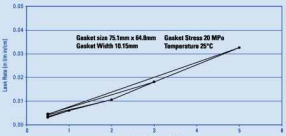
Both of these minerals are very soft, resulting in a compressible and flexible material that is completely free of organic content and produced in a roll form.

Gaskets of intricate and complex shape may be easily cut.



The soft, compressible material consisting of aligned plates ensures that high levels of seal are readily created.

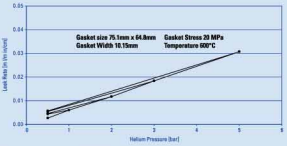
Sealing Curve for Thermiculite™ 866 of 0.92mm "as made" thickness at 25°C



Vermiculite and steatite are both highly temperature resistant and, as there is no organic content, there is no burn off at SOFC operational temperatures.

The lack of burn off means that there is no increase in porosity and no additional leakage at elevated temperature.

Sealing Curve for Thermiculite™ 866 of 0.92mm "as made" thickness at 600°C



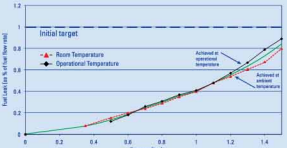
Please note that 600°C represents the highest temperature that the test rig could achieve, the temperature limit of Thermiculite™ 866 is 1050°C

As there is no burn off at elevated temperature there is also no reduction in the gasket thickness at temperature and no resulting relaxation of the bolts.

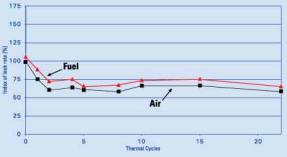
The seal is therefore stable during cycling between ambient and operational temperatures.

The features and benefits listed above result in excellent service performance as illustrated by the following stack results obtained by a customer and reproduced with their full permission.

SOFC Stack Sealing Performance achieved with Thermiculite™ 866 Compared with Initial Project Target



SOFC Stack Sealing with Thermiculite™ 866 Remains Stable during Thermal Cycling to Operational Temperature



To ensure that the best performance is achieved in service, full support will be given in the use of the material, gasket design considerations and stack assembly techniques.