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*"A Laboratory within a Pig"*



Patent Pending

MIC-Pig™: MIC-Pig 100

Available in 4" and 6" Sizes ~5lbs.

MIC Corrosion Tek offers the first patent pending in-situ pipeline sampling pig for black powder, sessile (attached) and planktonic (floating) MIC bacteria. It is estimated that 30% of all corrosion in pipelines is attributed to microbiologically influenced corrosion (MIC) bacteria. The MIC-Pig™ is the only device that collects MIC bacteria from the gas, liquid and solid phases of a pipeline in timed stages.

"Black Powder" is a growing concern in pipeline operations and is usually a by-product of the corrosion process.

Present technology consists of data collected from black powder received at the end of a pig run. It is a summation sample and receives only black powder that can be pushed in front of the pig. Currently, the data received from the black powder analyses are sometimes skewed as the higher density black powder can only be suspended for a short time and may not be represented in the final sample. There is an important absence of information, as composition and crystal formation of the black powder may be related to the density of the sample. A true black powder sample is not obtained and may mislead results and causes. The MIC-Pig™ obtains a collective, representative, sample of black powder throughout the pipeline.

MIC-Pig™ may be used before another pig, in a pig train or as a stand-alone in normal pigging operations. MIC-Pig's flow through design; collects representative black powder samples in its internal interlacement, as it travels through the pipeline. Two time-released stages of MIC bacteria sampling devices collect MIC bacteria from gas, liquids and solids; at various time/length segments of the pipeline. This allows for the identification of the MIC bacteria and colonies as they exist in various parts of the pipeline. Analysis of different locations in the pipeline, such as corrosion prone areas, is now possible.

Once the pipeline run has been completed, the MIC-Pig™ should be immediately packaged and sent by (included prepaid label—USA and Canada only) FedEx 2-day services; to our laboratory for MIC bacterium and black powder analysis.

Laboratory analysis includes bacterium culturing of the three timed collection sampling devices to determine MIC bacteria (GHB, SRB and APB) presence & quantitative analysis (MPN), in various sections of the pipeline.

Black powder analysis includes energy dispersive X-ray analysis (EDS) to determine composition.

The above analysis is included in the cost of the MIC-Pig™. An analytical report and recommendation is issued usually within 15-business days from the start of analysis. The MIC-Pig™ may be used for monitoring and mitigation programs.

### **Optional Analysis**

The following optional analyses are available dependent upon the size of sample and your individual discretion:

- DNA Analysis: Black Powder and MIC samples
- Organic Acids: Black Powder and MIC samples
- SEM and ED: Black Powder
- XRD Analysis: Black Powder
- Density: Black Powder
- Protein Analysis: Black Powder
- Particle Size: Black Powder

Other analysis may be available upon request. Optional Analyses are an additional costs not included within the base price of MIC-Pig™.

All laboratory procedures are performed by a certified laboratory and are performed by ASTM, API and NACE standards.